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11TH INTERNATIONAL CONFERENCE
ON CANCER IN AFRICA

AORTIC 2017

KIGALI, RWANDA
7-10 NOVEMBER 2017

CANCER IN AFRICA:
MAKING STRIDES,
CREATING SOLUTIONS

ABSTRACT PUBLICATION



Contents

Abila, Derrick Bary.....	1	Anyanful, Akwasi	42
Abraham, Natasha	2	Aruah, Simeon Chinedu.....	43
Abudu, Rachel.....	3	Ashktorab, Hassan	44
Abudu, Rachel.....	4	Asiimwe, Patience.....	45
Abuidris Elmustafa, Dafalla.....	5	Asuzu, Chioma	46
Adamu, Danladi Bojude	6	Asuzu, Chioma	47
Adedimeji, Adebola.....	7	Atawodi, Sunday.....	48
Adedokun, Babatunde	8	Atawodi, Sunday.....	49
Adejimi, Adebola.....	9	Atawodi, Sunday.....	50
Adejumo, Prisca.....	10	Atieno, Mackuline	51
Adeloye, Davies.....	11	Awolude, Olotusin.....	52
Adeloye, Davies.....	12	Awuah, Baffour.....	53
Adeniji-Sofoluwe, Adenike.....	13	Ba, Oumar.....	54
Adoke, Kasimu.....	14	Baine, Fiona.....	55
Adoke, Kasimu.....	15	Barry, Donna	56
Adoke, Kasimu.....	16	Barton-Burke, Margaret	57
Agbeko, Anita Eseenam	17	Basemera, Bernadette.....	58
Agwai, Celia Imaria.....	18	Bassey, Iya Eze	59
Agwai, Celia Imaria.....	19	Bassey, Iya Eze	60
Agwai, Celia Imaria.....	20	Bauknecht, Thomas	61
Ahmadaye, Ibrahim Khalil.....	21	Bazzett-Matabele, Lisa	62
Ahmadaye, Ibrahim Khalil.....	22	Bendahhou, Karima	63
Ahmed, Abdulaziz	23	Bey, Pierre	64
Ajeani, Judith.....	24	Bitty-Anderson, Alexandra	65
Akin-Odanye, Elizabeth Oluwatoyin	25	Blanchard, Charmaine	66
Alabi, Adewumi.....	26	Blanchard, Charmaine	67
Alatise, Olusegun.....	27	Bornman, Riana.....	68
Alatise, Olusegun.....	28	Botteghi, Matteo	69
Alhassan, Solomon Oguche.....	29	Bouka, Jemila	70
Ali, Shaimaa.....	30	Brand, Nathan	71
Ali, Zipporah	31	Brierley, James	72
Aluko, Joel O.	32	Brierley, James	73
Amanya, John Vianney.....	33	Brigman, Meg.....	74
Ambrosio, Maria Raffaella	34	Brinton, Louise	75
Ambrosio, Maria Raffaella	35	Brown, Biobebe.....	76
Ambs, Stefan.....	36	Bruner, Deborah	77
Ana, Godson.....	37	Burgert, Stephen.....	78
Anarado, Agnes	38	Buswell, Lori.....	79
Anarfi, Kwabena Kwarko.....	39	Butonzi, John.....	80
Andrews, Caroline	40	Buyinza, Nasur	81
Anglade, Fabienne	41	Cabanes, Anna	82

Campos, Nicole	83	Denburg, Avram	127
Carvalho, Gonçalo	84	Denburg, Avram	128
Casabonne, Delphine	85	Denny, Lynette.....	129
Castro, Cesar	86	Denny, Lynette.....	130
Cege-Munyoro, Esther	87	Deressa, Biniyam	131
Cege-Munyoro, Esther	88	Deroubaix, Aurelie	132
Cege-Munyoro, Esther	89	Diarra, Abdoul Salam.....	133
Chajes, Veronique	90	Dickens, Caroline	134
Chamberlin, Mary.....	91	Didi-Kouko Coulibaly, Judith.....	135
Chambuso, Ramadhani.....	92	Dimaras, Helen.....	136
Chasimpha, Steady	93	Diop, Halimatou.....	137
Chaussard, Martine.....	94	Dlamini, Xolisile.....	138
Chen, Wenlong Carl	95	Downing, Julia.....	139
Cherniak, William.....	96	Downing, Julia.....	140
Chiahemba, Moses	97	Downing, Julia.....	141
Chibuzo, Ijeoma	98	Dryden-Peterson, Scott	142
Chibuzo, Ijeoma	99	Dugan, Grace	143
Chibuzo, Ijeoma	100	Duncan, Kalina.....	144
Chibuzo, Ijeoma	101	Durosini, Muheez	145
Chidebe, Runcie C.W.	102	Dusengimana, Jean-Marie Vianney	146
Chimiczewski, Przemyslaw	103	Dvaladze, Allison	147
Chinula, Lameck.....	104	Ebusu, Paul.....	148
Chokunonga, Eric	105	Edgerton, Mary.....	149
Chuang, Linus.....	106	Effi, Ahoua.....	150
Chuang, Linus.....	107	Ekanem, Ima-Obong.....	151
Chuang, Linus.....	108	El-khatib, Ziad	152
Chukwuneke, Felix	109	Elmore, Shekinah.....	153
Chukwuocha, Ikechukwu	110	Elshamy, Karima.....	154
Cieslak-Stec, Malgorzata	111	Eltom, Sakina.....	155
Cimino, Francesco	112	Elzawawy, Ahmed.....	156
Cira, Mishka	113	Elzawawy, Ahmed.....	157
Clifford, Gary.....	114	Emeagi, Maurel.....	158
Clifford, Gary.....	115	Erickson, David.....	159
Coghill, Anna.....	116	Ermel, Aaron.....	160
Come, Jotamo	117	Erwin, Erica.....	161
Company Serrat, Assumpta	118	Esther Hortense Murielle, Dina Bell épouse	
Company Serrat, Assumpta	119	Mbassi ndocko.....	162
Cubasch, Herbert	120	Esther Hortense Murielle, Dina Bell épouse	
Dawsey, Sanford	121	Mbassi ndocko.....	163
Ddungu, Henry.....	122	Fadipe, Babatunde.....	164
Ddungu, Henry.....	123	Faduyile, Francis	165
De Sanjose, Silvia	124	Faduyile, Francis	166
DeBoer, Rebecca	125	Faduyile, Francis	167
Decuir, Philippa.....	126	Faruk, Mohammed	168



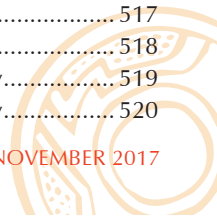
Fatiregun, Omolara.....	169	Hayes, Vanessa.....	213
Fedoriw, Yuri.....	170	Henderson, Marianne.....	214
Fehr, Alexandra.....	171	Henke, Oliver.....	215
Fitch, Margaret.....	172	Henry, Melissa.....	216
Fitch, Margaret.....	173	Henry, Melissa.....	217
Fokom Domgue, Joel.....	174	Henry, Melissa.....	218
Folasire, Olujemisi.....	175	Henry, Melissa.....	219
Folasire, Olujemisi.....	176	Horner, Marie-Josephe.....	220
Forconi, Catherine.....	177	Horner, Marie-Josephe.....	221
Fourie, Samuel.....	178	Horo, Apollinaire.....	222
Francis, Adeyinka.....	179	Hu, Peter.....	223
Freeman, Esther.....	180	Ibraheem, Abiola.....	224
Galvin, John.....	181	Idowu, Oluwaseyi Kayode.....	225
Gany, Francesca.....	182	Idowu, Oluwaseyi Kayode.....	226
Gebremedhin, Amha.....	183	Igbende, Dorothy Aumbur.....	227
George, Johnston.....	184	Iiyambo, Laina.....	228
Giattas, Mary Rose Kahwa.....	185	Ilesanmi, Rose.....	229
Ginindza, Themba G.....	186	Iliyasu, Yawale.....	230
Giovenali, Paolo.....	187	Incrocci, Luca.....	231
Githaiga, Jennifer.....	188	Incrocci, Luca.....	232
Gizaw, Muluken.....	189	Isanga, Anthony.....	233
Glasbey, James.....	190	Isanga, Anthony.....	234
Glasbey, James.....	191	Izuegbuna, Ogochukwu.....	235
Glasbey, James.....	192	Jacobson, Mark.....	236
Gopal, Satish.....	193	Jansen van Rensburg, Kotie.....	237
Gouveia, Mateus.....	194	Jhingran, Anuja.....	238
Grande, Bruno.....	195	Joffe, Maureen.....	239
Guermazi, Fatma.....	196	Joffe, Maureen.....	240
Guermazi, Fatma.....	197	Joffe, Maureen.....	241
Guermazi, Fatma.....	198	Joko W. Fru, Yvonne A.....	242
Guisseve, Assucena.....	199	Joy, Kusiima.....	243
Gupta, Sumit.....	200	Ka, Sidy.....	244
Gupta, Sumit.....	201	Kabagwira, Janviere.....	245
Gupta, Sumit.....	202	Kahesa, Crispin.....	246
Guthua, Symon.....	203	Kaimila, Bongani.....	247
Gutnik, Lily.....	204	Kaimila, Bongani.....	248
Guzzetti, Stefano.....	205	Kakisingi, Christian.....	249
Gwede, Clement.....	206	Kampani, Coxcilly.....	250
Gyan, Kofi.....	207	Kampi, Josephine.....	251
Hadoussa, Myriam.....	208	Kantelhardt, Eva Johanna.....	252
Hadoussa, Myriam.....	209	Kantelhardt, Eva Johanna.....	253
Hadoussa, Myriam.....	210	Kanyamuhunga, Aimable.....	254
Hamdi Cherif, Mokhtar.....	211	Kapambwe, Sharon.....	255
Hayes, Vanessa.....	212	Kapambwe, Sharon.....	256

Karagu, Alfred.....	257	Louati, Sara.....	301
Karim, Safiya.....	258	Low, Daniel	302
Kariuki, Grace.....	259	Low, Daniel	303
Kashaigili, Heronima.....	260	Lu, Enriquito.....	304
Katsidzira, Leolin	261	Lubwama, Margaret.....	305
Kayamba, Violet.....	262	Luyirika, Emmanuel	306
Kayamba, Violet.....	263	Luyirika, Emmanuel	307
Kelbore, Sefonias Getachew.....	264	Maboreje, Ololade	308
Kelly, Helen	265	Mahfoudh, Wijden	309
Kingham, T. Peter.....	266	Majani, Charles.....	310
Kirimunda, Samuel	267	Maniragaba, Theoneste.....	311
Kirira, Peter.....	268	Manirambona, Linda	312
Kiyange, Fatia	269	Manirambona, Linda	313
Kiyange, Fatia	270	Marco, Colleen.....	314
Kiyange, Fatia	271	Maree, Lize.....	315
Kiziri Mayengo, Rebecca.....	272	Maree, Lize.....	316
Korubo, Kaladada	273	Martei, Yehoda	317
Kotila, Olayinka	274	Martin, Allison	318
Krakauer, Eric.....	275	Martin, Allison	319
Kuti, Modupe	276	Martin, Allison	320
Kwagonza, Leocadia	277	Martin, Jeffrey.....	321
Ladner, Joel.....	278	Masamba, Leo	322
Lara Santos, Lucio.....	279	Mathew, Christopher	323
Lara Santos, Lucio.....	280	Matiko, Riro.....	324
Lara Santos, Lucio.....	281	Mbatani, Nomonde	325
Lara Santos, Lucio.....	282	Mbatani, Nomonde	326
Lara Santos, Lucio.....	283	Mbau, Lilian	327
Lawal, Ishak	284	Mburu, Anisa.....	328
Lawan, Aliyu.....	285	Mbuthini, Linda.....	329
Lawler-Heavner, Janet.....	286	McComb, Heidi Kristie	330
Leng, Mhoira.....	287	McComb, Heidi Kristie	331
Leng, Mhoira.....	288	McCormack, Valerie	332
Leng, Mhoira.....	289	McGoldrick, Suzanne	333
Leon, Maria E	290	McKenzie, Fiona	334
Leoncini, Lorenzo.....	291	Meheus, Filip.....	335
Leoncini, Lorenzo.....	292	Meheus, Filip.....	336
Lewis, Emma Grace	293	Mendoza, Andre.....	337
Lewis, Philippa.....	294	Mika, Marissa	338
Liman, Mubarak	295	Milner, Danny.....	339
Lince-Deroche, Naomi	296	Minas, Tsion.....	340
Lohman, Diederik.....	297	Mohamed, Zainab	341
Lombardo, Katharine	298	Mohamed, Zainab	342
Lorenzoni, Cesaltina	299	Moodley, Jennifer	343
Lorenzoni, Cesaltina	300	Moodley, Jennifer	344



Moses, Agnes.....	345	Ndiaye, Ramatoulaye.....	389
Moses, Agnes.....	346	Ndiaye, Ramatoulaye.....	390
Moshokoa, Evelyn.....	347	Ndiaye, Rokhaya	391
Motsuku, Lactatia	348	Ndikom, Chizoma	392
Mpunga, Tharcisse	349	Ndiok, Akon	393
Muangala, Maria.....	350	Ndiok, Akon	394
Muchiri, Lucy.....	351	Ndlovu, Ntokozo	395
Mugabe, Marcellin Champagnat	352	Ndlovu, Ntokozo	396
Muhimpundu, Marie Aimee.....	353	Ndumbalo, Jerry	397
Mukasahaha, Diane	354	Ngendahayo, Edouard	398
Mukasahaha, Diane	355	Ngendahayo, Edouard	399
Mukasahaha, Diane	356	Niane, Khadidiatou.....	400
Mukasahaha, Diane	357	Nichols, Scott.....	401
Muliro, Namaemba.....	358	Ninsiima, Jailet.....	402
Munatswa, Elvis	359	Niyonzima, Jean Pierre	403
Murenzi, Gad	360	Njoroge, Richard Ndung'u.....	404
Murphy, Gwen.....	361	Ntege, Christopher	405
Murphy, John.....	362	Ntekim, Atara	406
Musaigwa, Fungai	363	Nwachukwu, Chika	407
Musiwa-Mba, Patience.....	364	Nwogu, Chukwumere.....	408
Musoni, Emile.....	365	Nwogu, Chukwumere.....	409
Mustapha, Muhammad Inuwa	366	Nwogu, Chukwumere.....	410
Mutombo Baleka, Alex	367	Odedina, Folakemi	411
Mutyaba, Innocent	368	Odedina, Folakemi	412
Muvugabigwi, Gaspard	369	Odetunde, Abayomi	413
Mvungi, Nanzoke	370	Odida, Michael.....	414
Mwachiro, Michael.....	371	Odunyemi, Funmilola.....	415
Mwachiro, Michael.....	372	Oduor, Margaret.....	416
Mwachiro, Michael.....	373	Ofosu-Poku, Rasheed	417
Mwachiro, Michael.....	374	Ogunbiyi, Olufemi.....	418
Mwaiselage, Julius.....	375	Ogundiran, Temidayo	419
Mwamba, Peter	376	Ogundiran, Temidayo	420
Mwebesa, Eddie	377	Ogunnorin, B. Olutoye	421
Mwebesa, Eddie	378	Ohaeri, Beatrice	422
Mwebesa, Eddie	379	Ohaeri, Beatrice	423
Mwebesa, Eddie	380	Ojesina, Akinyemi	424
Mwebesa, Eddie	381	Ojewole, Foluso.....	425
Mwebesa, Eddie	382	Okediji, Paul.....	426
Nabweteme, Julie	383	Okediji, Paul.....	427
Nakalembe, Miriam	384	Okunade, Kehinde	428
Nakku, Salimah	385	Okunade, Kehinde	429
Nalwoga, Angela.....	386	Okwor, Vitalis	430
Ndayisaba, Marie Claire.....	387	Okwor, Vitalis	431
Ndiaye, Fatou Samba Diago.....	388	Olaly, Wilfrida.....	432

Olateju, Adetoun.....	433	Prasher, Sparsh	477
Olopade, Olufunmilayo.....	434	Prasher, Sparsh	478
Olorunfemi, Gbenga.....	435	Pritchett, Natalie.....	479
Olorunfemi, Gbenga.....	436	Pritchett, Natalie.....	480
Olukiran, Emmanuel Gbenro	437	Pupwe, George.....	481
Oluwasola, Timothy AO.....	438	Quarshie, Rexford.....	482
Oluwatosin, Oyeninhun Abimbola.....	439	Quessar, Asma	483
Oluwole, Olabode.....	440	Quessar, Asma	484
Omoding, Abrahams	441	Rabwoni, Martha	485
Ongondi, Matilda	442	Raphela, France	486
Onibokun, Adenike	443	Rapoport, Bernardo	487
Onibokun, Adenike	444	Rapoport, Bernardo	488
Onimode, Yetunde A.....	445	Rapoport, Bernardo	489
Onyango, Noel.....	446	Rapoport, Bernardo	490
Onyeka, Stephen.....	447	Rapoport, Bernardo	491
Onyeka, Tonia	448	Rayne, Sarah.....	492
Oodit, Ravichund	449	Rhee, John.....	493
Opoku, Samuel	450	Rhee, John.....	494
Oppong, Bridget.....	451	Richardson, Micheler Ricardo	495
Orang'o, Omenge.....	452	Rithara, Stella.....	496
Orem, Jackson	453	Rithara, Stella.....	497
Oswald, Habyarimana	454	Rithara, Stella.....	498
Othieno-Abinya, Nicholas Anthony.....	455	Rositch, Anne	499
Othieno-Abinya, Nicholas Anthony.....	456	Rositch, Anne	500
Oudjehih, Messaouda.....	457	Rubagumya, Fidel	501
Owojuyigbe, Temilola	458	Rubagumya, Fidel	502
Owusu-Afriyie, Osei.....	459	Rubagumya, Fidel	503
Pace, Lydia	460	Ruff, Paul	504
Palefsky, Joel.....	461	Ruff, Paul	505
Parker, Samar.....	462	Ruhangaza, Deogratias.....	506
Parkin, Max	463	Ruhangaza, Deogratias.....	507
Parkin, Max	464	Ruhangaza, Deogratias.....	508
Parkin, Max	465	Rulisa, Stephen.....	509
Pascal, Birindabagabo	466	Safari, Lambert Christophe.....	510
Penny, Clement.....	467	Sahabi, Saddiku M.....	511
Perrin, René Xavier	468	Sahabi, Saddiku M.....	512
Phipps, Warren	469	Saibu, Gbemisola.....	513
Piccaluga, Pier Paolo.....	470	Saidu, Rakiya.....	514
Pieme, Constant Anatole.....	471	Saidu, Rakiya.....	515
Pinder, Leeya.....	472	Salami, Mudasiru	516
Pinder, Leeya.....	473	Samson, Mélanie	517
Plattner, Laura.....	474	Samson, Mélanie	518
Plattner, Laura.....	475	Sankaranarayanan, Rengaswamy.....	519
Plattner, Laura.....	476	Sankaranarayanan, Rengaswamy.....	520



Sanni, Daniel	521	Tchounga, Boris Kevin	562
Satcher, Robert	522	Tchounga, Boris Kevin	563
Schmeler, Kathleen	523	Teixeira, Rubina	564
Schuz, Joachim	524	Telka, Ewa	565
Schwartz, Gary	525	Telka, Ewa	566
Semeere, Aggrey	526	Telka, Ewa	567
Sengayi, Mazvita	527	Temin, Sarah	568
Sengayi, Mazvita	528	Terwase, Joyce Mcivir	569
Sengayi, Mazvita	529	Teule, Alexandre	570
Sengayi, Mazvita	530	Theoneste, Nsabimana	571
Shamley, Delva	531	Thiam Konate, Fatou Sira	572
Shino, Elizabeth	532	Tindwa, Chakou H	573
Shoba, Bonginkosi	533	Tittenbrun, Zuzanna	574
Shulman, Lawrence	534	Tomoka, Tamiwe	575
Shyirambere, Cyprien	535	Torres-Luquis, Odalys	576
Shyirambere, Cyprien	536	Trauernicht, Christoph	577
Shyirambere, Cyprien	537	Turyahikayo, Jack	578
Siebert, Reiner	538	Utumatwishima, Jean	579
Silkensen, Shannon	539	Uwayezu, Marie Goretti	580
Silkensen, Shannon	540	Uwimana, Philomene	581
Simbiri, Kenneth	541	Uwinkindi, Francois	582
Simonds, Hannah	542	Van Eeden, Ronwyn	583
Simonds, Hannah	543	Van Loon, Katherine	584
Sinayobye, Jean d Amour	544	Vulpe, Horia	585
Singh, Elvira	545	Wallace, Melissa	586
Snell, Jeff	546	Wata, David	587
Snyman, Leon	547	Wekesa, Christine	588
Somdyala, Nontuthuzelo	548	White, Russell	589
Somdyala, Nontuthuzelo	549	Wirtz, Holger	590
Stewart, Tessa	550	Wishahi, Mohamed	591
Subramanian, Sujha	551	Wishahi, Mohamed	592
Subramanian, Sujha	552	Wong, Rebecca	593
Subramanian, Sujha	553	Wu, Emily	594
Subramanian, Sujha	554	Wuraola, Funmilola	595
Subramanian, Sujha	555	Wysong, Megan	596
Taku, Nicolette	556	Yamoah, Kosj	597
Tapela, Neo	557	Yates, Clayton	598
Tapela, Neo	558	Yennu, Sriram	599
Tawe, Leabaneng	559	Zheng, Yonglan	600
Tayari, Jean Claude	560	Zirimenya, Ludoviko	601
Tayari, Jean Claude	561		

POSTER

Abila, Derrick Bary

P202 | CURRENT TRENDS OF INCIDENCE OF CHILDHOOD AND ADOLESCENT CANCERS IN KAMPALA AND WAKISO DISTRICTS, KYADONDO COUNTY, 2009 TO 2014

Abila, Derrick Bary¹; Bwogi, Fred^{1,2}

¹Makerere University; ²Uganda Cancer Institute

**POSTER
SESSION
TWO**

16:30–18:00

Thursday

9 November

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Background Cancer is relatively rare in childhood compared to later in life. Worldwide, the common malignant diseases of childhood are leukaemia, lymphomas, central nervous system tumors and embryonic solid tumors whereas among the adolescents, sarcomas of bone and soft tissue, and tumors of the male and female genital tracts. In Africa, the distribution of childhood cancers is quite similar, commonest being Kaposi sarcoma, Burkitt's lymphoma, retinoblastoma, leukaemia and Hodgkin lymphomas.

Methods This was a retrospective cross-sectional study which involved review of cancer patient's information from Kampala cancer registry which collects information on cancers diagnosed within Kampala and part of Wakiso districts and included children (0–14 years) and adolescents (15–19 years). The data was analysed using SPSS.

Findings A total of 752 patients, 71.7% (n=539) were children (0–14 years) and 29.3% (n=213) were adolescents (15–19 years) diagnosed with cancer between January, 2009 and December, 2014. Among the children, Hodgkin lymphoma was 21%, 12% Kaposi Sarcoma, 9% nephroblastoma, 7% retinoblastoma, 11% unspecified malignancies and 40% others. Among the adolescents, 20% were Kaposi Sarcoma, 18% Non-Hodgkin lymphoma, 8% Hodgkin lymphoma, 7% Hodgkin Lymphoma, 6% Chronic Myeloid leukaemia and 41% other malignancies.

The age adjusted incidence per one million of childhood malignancies were; Non-Hodgkin Lymphoma (26), Kaposi Sarcoma (14.95), Nephroblastoma (9.2). Age Adjusted Incidence Rate of adolescent malignancies were; Kaposi Sarcoma (10.05), Non-Hodgkin Lymphoma (4.31), Hodgkin lymphoma (3.59). Retinoblastoma and nephroblastoma were found in only children.

Interpretation Among the children, the findings from this study differed from that in countries outside Africa. Haematological malignancies, solid tumors brain tumors were the most common cases of childhood and adolescent cancers. In Kenya and Rwanda, the most common were Non-Hodgkin lymphoma, leukaemia, Kaposi Sarcoma and nephroblastoma respectively.

Among the adolescents, the incidence was quite similar to those in Countries outside Africa, with Non-Hodgkin Lymphoma being the most common. The trends of adolescent cancers in Uganda were quite similar to those in other African countries although Kaposi Sarcoma was the most incident which was not the case with other African countries. In Zimbabwe, leukaemia, osteosarcoma, Non-Hodgkin lymphoma and Kaposi sarcoma had the highest incidence rates.

POSTER

Abraham, Natasha

P413 | LEADING CANCERS AMONG MEN AND WOMEN: SOUTH AFRICA, 2002–2012

**WELCOME
RECEPTION
AND POSTER
SESSION ONE**

16:30–18:00

Tuesday

7 November

Abraham, Natasha^{1,2,3}; Sengayi, Mazvita^{1,4}; Singh, Elvira^{1,4}

¹South African National Cancer Registry; ²National Institute of Communicable Disease; ³University of Pretoria; ⁴University of the Witwatersrand

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Background Changes in urbanization, lifestyle, population composition, and infectious diseases such as HIV/AIDS, may all impact national cancer burden over time. National surveillance of cancers is important to provide evidence of changing trends and patterns to inform health policies and for the allocation of public health resources.

Objective To compare the cancers with highest incidence in South Africa in 2002 and 2012, to determine whether cancers of public health importance have changed over the 10-year period.

Methods We performed a descriptive analysis of data from the South African National Cancer Registry (NCR) for the years 2002 and 2012. The NCR collects data regarding all pathologically confirmed cancers throughout SA.

Results The most common cancer sites in women in the year 2002 were breast, cervix, uterine, large intestine and oesophagus (in descending order). In 2012, the most common female cancers sites were breast, cervix, large intestine, uterus and lung. Breast and cervical cancers combined contributed 37.7% and 37.2% of all the cancers in years 2002 and 2012, respectively. Amongst males, top cancers in 2002 were prostate, lung, oesophageal, colorectal and bladder. A decade later, top male cancers were prostate, lung, colorectal, oesophageal and bladder. Prostate cancer contributed 15.4% and 18.5% in years 2002 and 2012, respectively.

Conclusion Breast and cervical cancers have consistently accounted for over a third of all cancers in women. Prostate cancer remains the most important cancer in South African men. The top five cancers for men remained unchanged. Amongst women, lung cancer moved into top five rankings in 2012.

PRESENTATION

Abudu, Rachel

COLLABORATIVE, MULTI-FUNDER ANALYSIS OF THE INTERNATIONAL CANCER RESEARCH PORTFOLIO: TOOLS FOR EVALUATION AND TRENDS IN RESEARCH FUNDING

**BIOMARKERS,
HAEMATO-
LOGY & OTHER
ABSTRACTS**

13:30–14:30

Thursday

9 November

Abudu, Rachel¹; Puricelli Perin, Douglas¹; Davies, Lynne²; Duncan, Kalina³
¹Leidos Biomedical Research; ²International Cancer Research Partnership;
³National Cancer Institute Center for Global Health

Correspondence rachel.abudu@nih.gov

Objective Established in 2000, the International Cancer Research Partnership (ICRP) is an alliance of cancer research funding organisations from seven countries working together to improve access to information, and enhance global collaboration and strategic coordination of cancer research. The database includes over 70,000 projects funded in over 35 countries, including many with collaborators in Africa.

Methods ICRP organisations categorize funded projects using the Common Scientific Outline (CSO) to facilitate data evaluation across organisations. We publish funded grants and associated metadata in a searchable public database as a tool for global collaboration.

Results ICRP conducts regular analysis of the cancer research portfolio to identify trends and gap areas requiring more detailed investigation. ICRP funders invested nearly 30% more in cancer research over the period 2005–2012, with growth in both government and non-profit sectors. Small increases of around 2% percent relative investment in cancer biology, early detection/diagnosis and treatment categories were seen, compared to investment in etiology, prevention, and cancer control, survivorship and outcomes research. Differences in cancer outcomes among different population groups are of increasing importance to cancer research funders, and tools have been developed – combining expert review and text-mining approaches – to enable research in cancer disparities to be identified within the database. As ICRP looks to the future, additional functionality will be added to the ICRP website to enhance data analytics and improve identification of collaborators within the portfolio.

Conclusions Meaningful analyses are only possible as a result of partnership – additional data from other cancer research funders, especially those in Africa, where there is an identified geographic gap, would allow for a more accurate picture of the strengths and needs in cancer research worldwide. ICRP demonstrates how combining international data on cancer research funding contributes to strategic planning for funders and policy makers, in addition to providing a resource for researchers to identify collaborators.

POSTER

WELCOME
RECEPTION
AND POSTER
SESSION ONE

16:30–18:00

Tuesday
7 November

Abudu, Rachel

P134 | MAPPING COLLABORATION NETWORKS OF CANCER RESEARCH IN AFRICA: A COMPREHENSIVE SOCIAL NETWORK ANALYSIS OF NCI-FUNDED AWARDS WITH SUB-SAHARAN AFRICAN RESEARCHERS DURING 2010–2016

Abudu, Rachel¹; Prakash, Laura²; Duncan, Kalina²

¹Leidos Biomedical Research; ²National Cancer Institute Center for Global Health

Correspondence rachel.abudu@nih.gov

Objective To map and investigate collaborations between researchers participating on NCI-funded extramural grants with at least one sub-Saharan African (SSA) researcher during 2010-2016.

Methods 115 NCI-funded extramural research grants awarded during fiscal years 2010-2016 with at least one SSA researcher were retrieved from NIH databases, and principal investigators and collaborators participating on these projects were recorded in an edge list of researcher pairs for network analysis. Cytoscape was used to create network maps and run network statistics.

Results The network included a total of 801 persons with 9529 connections, 543 institutions with 8216 connections, and 86 countries with 891 connections. Collaborators from 31 SSA countries participated in the network, and each SSA country was connected, on average, to 23 other countries in the network. The United States, South Africa, Uganda, and Tanzania had the greatest number of links to other countries in the network and the leading institutions in the network included the University of Cape Town, Makerere University, Stellenbosch University, the Infectious Disease Institute of Uganda, the University of Nairobi, and Muhimbili University of Health and Allied Sciences, each with over 130 connections to other institutions in the network. Nearly 125 institutions have joined the network since 2010, resulting in over 2700 new connections among institutions. Researchers were from all seven WHO regions and all four World Bank income bands, and each project was comprised of researchers from an average of 2.7 WHO regions. Future analyses will examine how the composition of researcher teams and researcher networks by cancer site and research type have changed over time.

Conclusions Social Network Analysis can be a powerful tool for understanding collaboration patterns in international grant portfolios. These results can demonstrate how the network has changed over time, reveal new patterns of collaborations among researchers, institutions, and countries, and provide practical and tangible information to researchers looking to establish new partnerships.

PRESENTATION

Abuidris Elmustafa, Dafalla

ACCESS TO CHEMOTHERAPY DRUGS IN AFRICA (SUDAN)

Abuidris Elmustafa, Dafalla¹

¹National Cancer Institute Wadmedani Sudan

**AORTIC–
ASCO
SYMPOSIUM**

11:00–12:30

Wednesday

8 November

Correspondence dafalla.abuidris@gmail.com

According to the World Health Organization (WHO), cancer is one of the leading causes of death in the world. In low- and middle-income countries, treatment for cancer is not widely available. This topic will focus in Sudan, a country that represent Africa: being large, under civil war, low income and having nomadic population. Sudan is one of leading States in Africa in introducing cancer treatment service (1967). The most common primary cancer sites in women are breast, leukemia, cervix, ovary, lymphoma, esophagus, and colorectal cancer. In men, the most common cancer sites are prostate, leukemia, lymphoma, oral, colorectal, and liver cancer. In Sudan all basic chemotherapy drugs delivered for free to all who deserve. The erratic supply is one of the major problems facing patients and treating physicians. Those who need targeted therapy have to pay out of pocket. The income per capita for Sudan government employee is in a range of \$705–3,500. The erratic supply because of the embargo, Sudan government can't transfer money outside to buy drugs. Many cancer patients in discontinue treatment because of this logistics cost rather than the drug price. Illiteracy is one the major problem in Africa including Sudan, this will affect compliance with treatment. Access to targeted therapy, which is not covered by the government and are almost always beyond patients' financial capacities. Call for lift of sanction on medical products to Sudan. Paying attention to other cost for chemotherapy treatment is as most important as providing free or subside drug price. Proper patient counseling and follow up will improve adherence and compliance for treatment. Appeal for the international community to advocate for reduction of the cost chemotherapy drugs in Africa, this issue to be raised to drug companies.

POSTER

Adamu, Danladi Bojude

P381 | LONG DISTANCE AND CHALLENGES OF RADIOTHERAPY MANAGEMENT OF BREAST CANCER IN IBADAN

**POSTER
SESSION
TWO**

**16:30–18:00
Thursday
9 November**

Adamu, Danladi Bojude¹; Ali-Gombe, Musa¹; Salisu-Sadiq, Yahaya²; Aliyu-Malami, Usman³; Mohammed-Inuwa, Mustapha⁴; Ntekim, Atara⁵; Campbell, OB⁵

¹Combe State University; ²Federal Teaching Hospital; ³Uthman Danfodio University; ⁴Rasheed Shekoni Specialist Hospital; ⁵University of Ibadan

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Background The dearth of radiotherapy services in Nigeria have led to tremendous suffering for breast cancer patients across the country. The aim of this study is to describe some challenges faced by breast cancer patients who discontinue follow-up care after treatment.

Methodology This was a retrospective study of breast cancer patients between 1st January, 2007 to 31st December, 2012 in University College Hospital (UCH), Ibadan. Data obtained included Sociodemographic data, disease features and follow-up information using a structured questionnaire. Descriptive statistics, chi square and logistic regression was used to analyse the data.

Results We studied 504 breast cancer patients. The mean age of the patients was 47.7 (± 10.6) years, late presentation with symptoms beyond 3 months was seen in 88.1% while advanced stage disease was seen in 58.7% of patients. Patients that live at distance within 100Km, 100-200Km and beyond 200Km away from UCH, Ibadan were 26.6%, 26.2% and 47.2% respectively. Majority of the patients 87.3% completed treatment, however, 94.8% of patients treated during the period discontinued follow-up care at the end of the study. The reasons for discontinuation were “death”, “finance related reasons” and “referred back to distant primary surgeon after treatment” accounting for 90(18.8%), 230(48.1%) and 158(33.1%) respectively. The factors affected by distance were reasons for discontinuing follow-up care [OR=1.8; CI=1.4-2.4] and distance metastasis [OR=0.5; CI=0.34-0.75] .

Conclusion Long distance and follow-up care discontinuation are the critical challenges affecting breast cancer treatment resulting patients to late presentation with advanced disease and poor compliance with follow-up care. Therefore, more centres should be built in each state to minimise the challenges.

POSTER

WELCOME RECEPTION AND POSTER SESSION ONE

16:30–18:00

Tuesday

7 November

Adedimeji, Adebola

P036 | CANCER RELATED KNOWLEDGE, RISK-ASSESSMENT AND PREVENTIVE BEHAVIOURS AMONG URBAN YOUTH IN NIGERIA: IMPLICATIONS FOR PREVENTION, CONTROL AND IMPROVING HEALTH LITERACY

Adedimeji, Adebola¹; Lounsbury, David¹; Popoola, Oluwafemi²; Asuzu, Chioma¹; Agalliu, Illir¹; Viswanathan, Shankar¹; Adebiji, Akin²

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Objective Cancers are a public health problem in Nigeria. Reproductive tract cancers, changing diets, lifestyles, AIDS and macro-structural factors have contributed to cancer mortality. Inadequate information linking cancer risk to individual behaviors, environmental and structural factors undermine prevention/control efforts. Studies have suggested increasing health literacy and empowering individuals to take preventive action to improve outcomes and mitigate impact on a weak health system, but information regarding knowledge, risk perceptions and preventive behaviors particularly among urban youth is lacking.

Methods We designed an exploratory qualitative study using a socio-ecological framework to assess cancer related knowledge, risk perception and preventive behaviors among young urban slum inhabitants in Ibadan, Nigeria. Forty-two male and female youth ages 18–24 participated in individual and group interviews aimed at understanding how micro and macro structural factors can inhibit or enhance population based cancer control strategies including screening, early detection and prevention, as well as identify gaps in cancer health literacy and opportunities for encouraging risk-reduction behaviors.

Results Participants reported awareness of different cancers. Females mentioned reproductive tract cancers (breast, cervical) and boys mentioned lifestyle/environmental related cancers. Low cancer literacy and widespread misconceptions regarding the role of individual, lifestyle and environmental factors in the etiology of cancers contribute to low risk perception and poor preventive behaviors even among those at risk. Macro-structural factors- inadequate health infrastructures for screening/early detection, exorbitant HPV vaccines, limited options for treating early stage cancer inhibit population based control efforts.

Conclusion Implementing large-scale population based cancer control efforts require comprehensive context-relevant interventions including improving health literacy for at risk groups in community settings will contribute to reducing the burden of disease.

POSTER

POSTER SESSION TWO

16:30–18:00
Thursday
9 November

Adedokun, Babatunde

P401 | QUALITATIVE ANALYSIS OF NURSE EDUCATORS' PERCEPTIONS ON GENETICS AND GENOMICS COURSES IN CURRICULA OF NURSING PROGRAMMES IN IBADAN, SOUTH-WEST, NIGERIA

Adedokun, Babatunde¹; Adejumo, Prisca¹; Ilesanmi, Rose¹; Anigawu, Toyin²; Aluko, Joel¹; Owolabi, Gbonjubola³; Olopade, Olufunmilayo⁴

¹University of Ibadan; ²Department of Nursing, College of Medicine, University of Ibadan; ³Oyo State College of Nursing and Midwifery; ⁴University of Chicago

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Objective Nurses constitute an important group of health workers involved in counselling individuals and their families with genetic diseases such as cancer. Advances in genomics and genetic testing for most diseases indicate that genetic services are relevant and should be more available. This suggests an urgent need to expand the existing genetics content of nursing curricular. This study was aimed at evaluating the perceptions of nurse educators about the genetics content of the courses as a theoretical foundation for students in six nursing programmes in Ibadan, Nigeria. This is with the view of a proposed educational intervention study on genetics/genomics for Nurse Educators in selected Nursing programmes.

Methods A qualitative research was conducted using Focus Group Discussions (FGDs) and In-depth Interviews (IDIs) among 24 nurse educators in six Nursing programmes in Ibadan, southwest Nigeria. Questions included genetic content of the nursing curriculum, genetics and genomics, Human Genome Project (HGP), genetic testing for non-communicable diseases, application of genomics in healthcare, and personalized medicine. Responses were tape recorded and transcribed. Analysis was done with NVIVO software using thematic analysis.

Result Mean age of respondents was 45.6 ± 5.4 , of which 22 were females. All respondents hold a minimum of Bachelor's degree in Nursing, and seven (7) hold a Master degree in Nursing. The respondents taught a wide range of courses. Genetics was not a stand-alone subject but was taught as part of human anatomy under cell division. Some respondents erroneously considered genetics and genomics as similar terms. The genetic content was noted to be scanty in the curricular. Respondents were completely unfamiliar with the objectives of HGP and when it was conducted. On personalized medicine, a common misconception was that it describes medicine for familial or hereditary conditions. There were contrasting opinions about the changes to be made to the current curricular. While some educators would prefer that genetic/genomics content be embedded in the already existing courses, others supported that it be taught as a stand-alone course, because the existing curriculum is believed to be overloaded for the duration of the programme.

Conclusion The Nurse educators expressed a high level of enthusiasm for training on genetics and genomics as inadequate knowledge was evident. Therefore, there is need for active engagement of the Nursing and Midwifery Council of Nigeria to facilitate the prompt revision of the current nursing curriculum and its adoption by nursing schools in Nigeria.

POSTER

POSTER
SESSION

TWO

16:30–18:00

Thursday

9 November

Adejimi, Adebola

P203 | KNOWLEDGE AND PERCEPTION OF HUMAN PAPILLOMAVIRUS (HPV) VACCINE AMONG WOMEN ATTENDING ANTENATAL CLINIC AT FEDERAL MEDICAL CENTRE, ABEOKUTA, OGUN STATE, NIGERIA

Adejimi, Adebola^{1,2}; Akanbi, Abiodun¹; Balogun, Busola³

¹Ladoke Akintola University of Technology; ²University of Ibadan;

³University College Hospital

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Background Cervical cancer is preventable though Human Papillomavirus (HPV) vaccination but yet the leading cause of death among women in developing countries. It is important to understand the level of awareness about HPV vaccine in developing the strategies for an effective intervention.

Objectives The objectives of this study were to assess the knowledge and perception of HPV vaccine among women attending antenatal clinic in Abeokuta, Ogun State, Nigeria.

Method A cross-sectional study was conducted using systematic sampling technique. A pretested, semi-structured and interviewer administered questionnaire was used to assess the knowledge and perception of HPV vaccine. Data was analysed using SPSS version 16 and Chi square statistics was used to test for association between variables at level of significance of 5%.

Result A total of 104 women were interviewed. The mean age of the respondents was 29.8 ± 7.8 years. About 77.9% were married and 55.8% of the respondents had tertiary education. However, 41.0% had good knowledge of HPV infection, 30.7% had good knowledge cervical cancer and 39.4% had good knowledge of HPV vaccine. About 45.9% of the respondents had good perception of HPV vaccination as a preventive method for cervical cancer. Age, level of education, household size and level of income were significant factors that determined the level of knowledge of the respondents about HPV vaccine whereas age, occupation, settlement area and household size were the significant factors that determined the level of perception of the respondents about HPV vaccine.

Conclusion There is a very low level of knowledge and poor perception about Human Papillomavirus (HPV) vaccine among this sample of women. Effective information, education and communication strategies are required to improve the level of knowledge and perception of these women with different educational levels and settlement areas about HPV vaccine.

POSTER

POSTER SESSION TWO

16:30–18:00
Thursday
9 November

Adejumo, Prisca

P246 | GENETIC COUNSELLING AWARENESS AND EDUCATIONAL NEEDS AMONG RELATIVES OF WOMEN LIVING WITH BREAST CANCER IN A NIGERIAN TEACHING HOSPITAL

Adejumo, Prisca¹; Aniagwu, Toyin²; Olatoye-Wahab, Funmilola²; Adedokun, Babatunde¹; Oluwatosin, Abimbola¹; Ogundiran, Temidayo¹; Olopade, Olufunmilayo³

¹University of Ibadan; ²University College Hospital; ³Department of Epidemiology and Medical Statistics, College of Medicine, University of Ibadan

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Background Effective breast cancer care includes genetic counselling and risk assessment. Patients and families can make informed choices about treatment and care when they have adequate knowledge about the disease and involvement of genetics. Although genetics and genetic counselling is increasingly integrated into cancer care for precision in many countries of the world, its awareness is low and it is not widely practiced in Nigeria. We sought to promote awareness of genetics in breast cancer and preventive measures for hereditary breast cancer through genetic counselling among relatives of women with breast cancer (RWBC).

Methods Trained nurses at an out-patient oncology clinic invited RWBC for a session of awareness and group counselling on genetic involvement in breast cancer. This was done every Friday afternoon between February 2016 and March 2017. Five nurses trained in genetic counselling and risk assessment conducted the sessions. Verbal consent was obtained from the attending relatives who were asked what they knew about breast cancer, genetics and genetic counselling. Their responses were documented verbatim. The nurses then educated the counselees on breast cancer, pathophysiology, risk factors, with emphasis on genetic involvement, pedigree and risk estimation for the disease. The relatives were educated about surveillance and screening options available and the women were taught self-breast examination.

Results One hundred and seventy-one (171) RWBC each had a session of awareness and group counselling. Eighty percent (80%) were female relatives with majority of them not been aware of breast cancer aetiology. Very few implicated diet, chemical use and hereditary factor. Many of the relatives believe that breast cancer is a death warrant once diagnosed. On the involvement of genetics in causation of breast cancer, majority did not know how genetics can be involved in breast cancer development. Majority of the relatives heard about screening for the first time and were willing to learn how to examine their breasts and take other screening options. The relatives raised questions about genetic involvement in breast cancer and how to test for it and expressed their wish to have been given the information earlier.

Conclusions Relatives of women with breast cancer lack breast cancer awareness and have inadequate knowledge of the disease and its aetiology. The group session fostered their knowledge about breast cancer and favours identification of genetic risk in its causation. Promoting awareness about genetic counselling, testing and surveillance measures is important in breast cancer care.

POSTER

Adeloye, Davies

P204 | AN ESTIMATE OF THE INCIDENCE OF BLADDER CANCER IN AFRICA: A SYSTEMATIC REVIEW AND META-ANALYSIS

**POSTER
SESSION
TWO**

16:30–18:00

Thursday

9 November

Adeloye, Davies¹; Ayepola, Olayemi¹; Ogunlana, Olubanke¹; Rotimi, Solomon¹; David, Rotimi²; Iweala, Emeka¹
¹Covenant University; ²Obafemi Awolowo University

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Background Bladder cancer is among the leading cancer types worldwide, with an estimated 430,000 new cases and 165,000 deaths in 2012. Estimates suggest more than 60% of bladder cancer cases and half of all cancer deaths occur in developing countries, with this mostly linked to *Schistosoma Hematobium* infection. An understanding of the epidemiology in Africa may help guide relevant response across countries.

Objectives To estimate the incidence of bladder cancer in Africa based publicly available evidence.

Methods We systematically searched Medline, EMBASE, Global Health and African Journals Online (AJOL) for population-based registry studies reporting the incidence of bladder cancer in Africa, and published between January 1980 and December 2016. A further search of International Association of Cancer Registries (IACR) website was conducted. Google Scholar and references of initially included studies were hand-searched for additional studies. Crude incidence rates of bladder cancer were extracted and sorted by sex and African sub-regions. A random effects meta-analysis was conducted on extracted crude incidence rates.

Results Our search returned 1328 studies. 22 studies conducted across 15 African countries met our pre-defined selection criteria. Less than half of the studies (47.5%) were conducted after year 2000. Heterogeneity across studies was high ($I^2 > 95\%$, $p = 0.000$). The pooled crude incidence of bladder cancer in Africa was 6.6 (95% CI: 5.1–8.1) per 100,000 population per year in men, and 1.6 (95% CI: 1.1–2.1) per 100,000 in women. The incidence of bladder cancer was consistently higher in North Africa in both sexes. Among men, we estimated a pooled incidence of 11.0 (95% CI: 7.4–14.7) per 100,000 in North Africa and 3.4 (95% CI: 2.5–4.3) per 100,000 in Sub-Saharan Africa (SSA). While in women, the pooled incidence was 1.9 (95% CI: 0.8–2.9) per 100,000 and 1.5 (95% CI: 0.9–2.0) per 100,000 in North Africa and SSA, respectively. Across all data points (40), a meta-regression analysis showed significant association between incidence of bladder cancer with increasing age and year, sex and African sub region ($\text{Prob} > F = 0.0003$, Adjusted R-squared = 39.65%).

Conclusion Our findings suggest a high incidence of bladder cancer in Africa, particularly in North Africa. Although all African sub-regions (central, east, north, south and west) were represented, the overall representativeness of these estimates remain uncertain due to the lack of data across many African countries. There is need for improved cancer registration, and research, especially towards understanding emerging trends and risks of bladder cancer, across Africa population groups.

POSTER

Adeloye, Davies

P205 | ESTIMATING THE INCIDENCE OF LUNG CANCER IN AFRICA: A SYSTEMATIC REVIEW OF THE EVIDENCE

**POSTER
SESSION
TWO**

16:30–18:00

Thursday

9 November

Adeloye, Davies¹; Harhay, Michael²; David, Rotimi³; Iweala, Emeka¹
¹Covenant University; ²University of Pennsylvania; ³Obafemi Awolowo University

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Background Lung cancer is rated the most common cancer among men. In sub-Saharan Africa, DALYs from lung cancer increased by over 40% between 1990 and 2015.

Aim To estimate the incidence of lung cancer in Africa.

Methods A search of Medline, Global Health and Google Scholar was conducted for population-based registry studies reporting incidence of lung cancer in an African population, and published between January 1980 and December 2016. A further search of International Association of Cancer Registries (IACR) website was conducted. From extracted crude incidence rates, we conducted a random effects meta-analysis.

Results 28 studies conducted between 1985 and 2015 were retained from 19 African countries. A higher incidence of lung cancer was estimated among men at 11.2 (95% CI: 9.3–13.1) per 100,000 population per year, compared to a very low rate among women at 1.9 (95% CI: 1.5–2.3) per 100,000. North Africa consistently had higher incidence rates compare to Sub-Saharan Africa [men 19.2 (95% CI: 12.1–26.3) vs 5.9 (95% CI: 4.6–7.2); women 2.3 (95% CI: 1.6–3.0) vs 1.7 (95% CI: 1.3–2.1)]. Lung cancer incidence increased from 7.8 (95% CI: 5.9–9.6) per 100,000 population to 15.4 (95% CI: 11.5–19.3) per 100,000 between 2000 and 2015 among men, while a decrease from 2.1 (95% CI: 1.6–2.6) per 100,000 to 1.8 (95% CI: 1.2–2.4) per 100,000 was estimated among women over the same period. Across both sexes, an increasing incidence of lung cancer was observed with increasing age. Among men, incidence increased from 4.1 (95% CI: 2.8–5.4) per 100,000 in the age group 30–49 years to 14.4 (95% CI: 11.5–17.4) per 100,000 in persons aged 50 years or more. While in women, incidence increased from 1.2 (95% CI: 0.7–1.8) per 100,000 to 2.3 (95% CI: 1.8–2.8) between ages 30–49 years and 50+ years, respectively.

Conclusion Our study suggests a higher incidence of lung cancer among men, which possibly reflects reported higher smoking rates among men compared to women in the Africa region. The results also align with reported cigarette smoking data which suggest that African countries are in the early stages of a smoking epidemic. Accordingly, it is difficult to quantify incidence and overall burden of lung cancer in Africa due to limited data and poor health records. It is hoped this study may prompt improved research on lung cancer across Africa, especially on smoking and environmental risk factors, to better understand the burden of the disease in the region.

PRESENTATION

Adeniji-Sofoluwe, Adenike

HARNESSING TECHNOLOGY TO LEAPFROG IN BREAST CANCER DIAGNOSIS AND MANAGEMENT

BREAST CANCER

11:00–12:30

Friday

10 November

Adeniji-Sofoluwe, Adenike^{1,2}; Obajimi, Millicent^{1,2}

¹University of Ibadan; ²University College Hospital

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Breast cancer is a global health problem and the leading female malignancy worldwide. Imaging plays a critical role in the diagnosis and management of breast cancer. Modalities for breast cancer diagnosis have evolved over the years.

Mammography is considered the gold standard and screening modality of choice for the early detection of breast cancer. However, technology has made it possible for the conversion of analogue mammography images to digital formats for better tissue contrast and improved diagnosis. There is also the advancement from conventional mammography to digital mammography (2-D) and now the digital breast tomosynthesis (3-D) technology and computer-aided detection (CAD).

Ultrasonography of the breast, also plays an adjunctive role in the diagnosis of breast cancer and of paramount use in young, pregnant and lactating breasts that are not exempt from developing breast cancer. Doppler imaging and newer technical applications like shear-wave and strain elastography utilizing various tissue compression methods have recently been developed and found application in the diagnosis and treatment of breast cancer. Automated breast ultrasound (AUBUS) is now available in some countries for screening for breast cancer.

Magnetic Resonance Imaging (MRI) technology is useful in screening high risk patients and young women with dense breasts. It is beneficial in the post-operative evaluation of the breast. Recent MRI software have been designed for advanced post-processing and configuration to automatically generate multi-planar reformatted (MPR) and maximum intensity projection (MIP) images. This is tailored to enhance imaging workflow with large flexible workspace, custom hanging protocols, multi-vendor viewing capabilities and configurable work lists for easy study management. Interventional procedures can also be performed on MRI. Scintimammography (Molecular breast imaging) is a nuclear imaging modality that current research is aimed at improving the technology and evaluating its use in specific situations such as in the dense breasts of younger women.

Positron emission tomography (PET) / Fluorodeoxyglucose FDG-PET and magnetic resonance imaging (MRI) are two of the most powerful clinical imaging tools. They provide complementary information that is used in the diagnosis of many diseases including breast cancer and in assessing the effect of current and new therapies. Hybrid imaging is a technology that takes advantage of the attributes of more than one imaging modality combined that makes possible both anatomical and functional assessment needed in precision medicine. PET-MRI is the most complex imaging technology to date. Technology is pivotal in the development and application of imaging in cancer diagnosis.

POSTER

WELCOME
RECEPTION
AND POSTER
SESSION ONE
16:30–18:00
Tuesday
7 November

Adoke, Kasimu

P012 | EWING FAMILY TUMOURS: IMMUNOHISTOCHEMICAL REVIEW OF FIVE CASES IN A TERTIARY HOSPITAL IN NIGERIA

Adoke, Kasimu¹; Ahmed, Saad¹; Iliyasu, Yawale¹; Kabir, Suleiman²
¹Ahmadu Bello Teaching Hospital; ²Federal Medical Centre

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Objectives Ewing Family Tumours (EFT) are a morphologically heterogeneous group of tumours characterized by non-random chromosomal translocation involving the EWS gene and one of several members of the ETS family of transcription factors. The translocation t(11,22)(q24,q12) is the most common and leads to the formation of the EWS-FLI1 fusion protein. Such tumours include Ewing Sarcoma/Primitive neuroectodermal tumours (ES/PNET), Extra skeletal myxoid chondrosarcoma, Clear Cell Sarcoma (CCS), Desmoplastic Small Round Cell Tumour (DSRCT), Angiomatoid Fibrous Histiocytoma (AFH), Myxoid/Round cell Liposarcoma and Myoepithelial tumours. A two year prospective review of EFT with the use of immunohistochemical stains was done for five cases of EFT.

Method Six panels of antibodies were used to review the immunohistochemical pattern of five EFTs diagnosed over a two year period. The antibodies include CD99, S-100, Vimentin, Desmin, Cytokeratin and EMA. Genemed biotechnology protocol was adapted in the study.

Result The age range of presentation of EFT was 13-35 years with a mean of 23.8 years. The male/female ratio was 2:3. The commonest EFT was ES/PNET 3(60%). The remaining two cases were myoepithelioma 1(20%) and myxoid/round cell liposarcoma 1(20%). All cases of ES/PNET involved the bones of the upper extremities. The immunophenotype was typical for ES/PNET CD99 positive with focal positivity observed for vimentin and S-100. Myxoid/round cell liposarcoma was positive for CD99 and S-100 while, myoepithelioma was positive for EMA, Cytokeratin and Desmin. Myoepithelioma was negative for CD99.

Conclusion EFTs are interesting and challenging group of neoplasm that are commonly encountered in our society, we advocate more research on molecular testing of these fascinating tumours in order to identify the commonest translocation that occur in these tumours and to be able to design novel therapies that target these genes.

POSTER

Adoke, Kasimu

P319 | SMALL ROUND BLUE CELL TUMOUR OF CHILDHOOD: A CLINICOPATHOLOGICAL AND IMMUNOHISTOCHEMICAL REVIEW OF 14 CASES

Adoke, Kasimu¹; Ahmed, Saad¹; Iliyasa, Yawale¹; Hassan, Ibrahim²

¹Ahmadu Bello Teaching Hospital; ²Usmanu Danfodio University Teaching Hospital

**POSTER
SESSION
TWO**

16:30–18:00

Thursday

9 November

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Objective Small Round Blue cell tumour (SRBCT) of childhood is a diverse group of cancers that have considerable overlap in epidemiology, morphology and immunophenotype. They are characterized by small round undifferentiated primitive cells. They include Ewing Family Tumours, rhabdomyosarcoma, synovial sarcoma, Non-Hodgkin's lymphoma, retinoblastoma, neuroblastoma, mesenchymal chondrosarcoma, medulloblastoma and nephroblastoma. A three year retrospective study of fourteen cases diagnosed as SRBCT of childhood was done.

Methods A total of fourteen cases diagnosed as SRBCT of childhood were reviewed morphologically and subjected to nine immunohistochemical stains. The stains include Cytokeratin, EMA, S-100, CD99, Desmin, CD10, CD20, BCL2 and chromogranin. Genemed biotechnology protocol was adapted in the study. Data was also extracted from case notes of patients. SPSS version 20 was used for data analysis.

Results The age range was 2-15 years with a mean age of 7.2 years. The male/female ratio was 3:2. The head and neck region was the commonest occurrence of SRBCT of childhood. The commonest SRBCT was Burkitt's lymphoma 5(33.3%), followed by retinoblastoma 4(26.7%) and alveolar rhabdomyosarcoma 3(20%). The remaining two cases were ES/PNET 1(10%) and synovial sarcoma 1(10%). All patients with Burkitt's lymphoma presented late with jaw mass and were retroviral negative. Cases of retinoblastoma frequently affects the left eye 3(75%) with all patient presenting with late disease. Alveolar rhabdomyosarcoma affected the upper extremities 2(66.7%) with two cases metastasizing to the axillary lymph nodes. The immunophenotype was typical for Burkitt's lymphoma (CD10, CD20 positive, BCL2 negative). Alveolar rhabdomyosarcoma was positive for desmin while some focal positivity for S-100 was seen in two cases of retinoblastoma. Synovial sarcoma and ES/PNET were positive for CD99. All patients were commence on chemotherapy but were lost to follow up due to financial burden.

Conclusion SRBCT of childhood have considerable overlap in morphorlogy and immunophenotype. Immunohistochemistry alone may help differentiate these tumours but not sufficient enough. Future studies on molecular profiling of these common paediatric tumours should be done in our environment for possible targeted therapy. At present, Government and NGOs should assist those patients with these tumours so that they can have access to radiotherapy and chemotherapeutic agents to reduce their financial burden.

POSTER

WELCOME RECEPTION AND POSTER SESSION ONE

16:30–18:00

Tuesday
7 November

Adoke, Kasimu

P429 | GLOBAL GLEASON GRADE GROUPS IN PROSTATIC ADENOCARCINOMA: APPLICATION OF THIS NEW GRADING SYSTEM ON TWENTY FIVE CORE BIOPSIES

Adoke, Kasimu¹; Ahmed, Saad¹; Iliyasu, Yawale¹; Mohammed, Faruk¹
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Objective The 2005 International society of Urological Pathology (ISUP) modified Gleason Score is still considered very important in patient management and has been widely accepted and used by pathologist because of its simplicity and easy reproducibility. This grading system over the years has some issues like concordance of core biopsy and radical prostatectomy grades and in some cases upgrading or downgrading of this prostatic adenocarcinomas. Grading modifications were proposed by the group from Johns Hopkins Hospital in 2003. Which was endorsed by the 2016 edition of WHO. In this grading system, individual Grade Group (GR) has presumed similar prognosis for each Gleason Score category: $GS \leq 6$ (GR1). $GS 3+4$ (GR2). $GS 4+3$ (GR3). $GS 8$ (GR4). $GS \geq 9$ (GR5). We apply this new grading system adopted by WHO to twenty five core prostatectomy specimen and two radical prostatectomies.

Method This is a six month prospective study of twenty five patients with age range of 45-110 years that has undergone prostatic core biopsy and radical prostatectomy in a Nigerian tertiary hospital. The Global Gleason grade group (GR) was applied to all biopsies.

Results Eight cases had Gleason Score ≤ 6 (GR1), three cases had $GS 3+4$ (GR2), five had $GS 4+3$ (GR3), Seven had $GS 8$ (GR4), while two had $GS \geq 9$ (GR5). The last two cases with GR5 undergo radical prostatectomy with concordance observed in both core biopsies and the radical prostatectomy biopsies.

Conclusion Obviously we observed that the new WHO adopted grading system has more Grade stratification than the 2005 (ISUP). The WHO adopted grading system is simpler with only 5 groups and may be a more indicator of high concordance rate with radical prostatectomy specimen compare to the 2005 (ISUP). However, the preliminary data at hand may be too small to come to a conclusion on the issue of concordance rate.

POSTER

WELCOME RECEPTION AND POSTER SESSION ONE

16:30–18:00

Tuesday
7 November

Agbeko, Anita Eseenam

P135 | UNDERSTANDING THE LATE HEALTH SEEKING BEHAVIOUR OF WOMEN PRESENTING WITH ADVANCED BREAST CANCER SYMPTOMS: A THEORETICAL PERSPECTIVE

Agbeko, Anita Eseenam^{1,2}; Morris, Sara²; Grinyer, Anne²
¹Komfo Anokye Teaching Hospital; ²Lancaster University

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Introduction In most developing African countries, 70–80% of breast cancer patients present late. At the Komfo Anokye Teaching Hospital (KATH), Ghana, about 85% of breast cancer patients present with stage III/IV disease. This study aimed at understanding what factors influence medical health seeking behaviour among women with breast cancer symptoms.

Method Women presenting for the first time with clinical stage III/IV breast cancer to KATH were purposively selected for the study between May 2015 and March 2016. In-depth interviews were conducted to explore the women's symptom appraisal process and the events that prompted health seeking. Thematic data analysis was conducted using the Andersen behavioural model for health service use with a critical realist perspective. Interpretation of how the factors interacted with each other, their significance along the help seeking journey and how they ultimately evolved to influence decision making was done based on the women's accounts.

Results Fifteen women were interviewed. They were aged between 24–79 years. Ten of them had clinical stage III and 5 had clinical stage IV breast cancer. The time from symptom identification to reporting to KATH was 4–24 months. The first symptom identified was a breast lump or breast swelling. These were initially appraised as “normal/not serious” because it did not affect their well-being. This conclusion was reinforced by their ability to perform daily functions related to family, social and economic obligations in spite of the presence of the symptoms. Although considered not serious, the women actively monitored their breast symptoms. They applied locally prepared topical creams or herbs expecting that the symptoms would resolve as is traditionally expected i.e. “burst like a boil” or “melt away”. The trigger to seek medical help was worsening of their symptom to the point where daily function was affected in spite of their personal interventions.

Discussion/Conclusion Traditional misconceptions about breast symptoms persist among Ghanaian women. The effects breast symptoms have on family, social and economic functions and activities influence how and when they are appraised as serious and thus needing medical attention. Breast cancer education must focus on helping women redefine when an identified breast symptom needs medical evaluation.

POSTER

POSTER SESSION TWO

16:30–18:00
Thursday
9 November

Agwai, Celia Imaria

P206 | ANXIETY LEVELS AND ASSOCIATED FACTORS AMONG WOMEN WHO HAVE CLOSE BLOOD RELATIONSHIP WITH BREAST CANCER PATIENTS IN IBADAN, NIGERIA

Agwai, Celia Imaria¹; Ajayi, IkeOluwapo¹; Adedokun, Tunde¹; Ojengbede, Oladosu²; Huo, Dezheng³; Olopade, Olufunmilayo³
¹University of Ibadan; ²Center for Population and Reproductive Health; ³University of Chicago

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Objectives To determine the levels of anxiety and factors associated with anxiety among women who have close blood relationship with breast cancer patients in Nigeria.

Methods A cross-sectional survey is ongoing among first-degree female relatives of breast cancer patients attending the University College Hospital (UCH), Ibadan, Nigeria. First-degree female relatives included the mother, sisters and daughters of a pathologically diagnosed breast cancer patient. The relatives of both newly diagnosed breast cancer patients and prevalent cases were recruited at the Surgical Out-patient Clinic and Radiotherapy Clinics of UCH, Ibadan. The female relatives were contacted via phone and those who gave consent were recruited for the study. Eligible participants were either interviewed at the hospital or in their homes. A validated semi-structured questionnaire was administered by interviewers. In particular, anxiety level of the participants was determined using a three-item questionnaire, which was adopted from the Four-Item questionnaire (PHQ-4) for Anxiety and Depression of the University of Chicago Medicine Comprehensive Cancer Center. A score of ≥ 4 for the three questions suggests anxiety. SPSS version 16 was used for the data analysis. Data was summarized using mean, SD and proportions. Chi-square test was used to test association between anxiety and categorical socio-demographic variables. Ethical approval was granted for the study after a full review by the University of Ibadan/UCH Ethical Review Committee

Results A total of 101 first-degree female relatives of breast cancer patients (87 families) has been enrolled in the survey between Feb 2017 and March 2017. The mean age of the women was 34 years (SD = 11.1) and 32.7% were aged 40 years and above. There were 61 women (60.4%) with post-secondary education, 60.4% were currently married and 48.5% were petty traders or artisans. 52.5% of women worried in the last 2 weeks about higher chances of having breast cancer compared to other women their age, 40.6% of women worried about achieving life goals because of increased risk, and 57.4% had thoughts about chances of having breast cancer affecting their mood. The proportion of women with anxiety was 12.6%. A higher proportion of women with tertiary education had anxiety than other women ($p = 0.090$).

Conclusion The prevalence of anxiety was low among the relatives of breast cancer patients, which could indicate lack of awareness about the implications of a relation with breast cancer. Larger studies are needed to better understand anxiety levels among these women.

POSTER

Agwai, Celia Imaria

P207 | PRELIMINARY FINDINGS OF THE BREAST SCREENING PRACTICES AMONG WOMEN WITH A FAMILY HISTORY OF BREAST CANCER IN NIGERIA

**POSTER
SESSION
TWO**

**16:30–18:00
Thursday
9 November**

Agwai, Celia Imaria¹; Ajayi, IkeOluwapo¹; Adedokun, Tunde¹; Huo, Dezheng²; Olopade, Olufunmilayo²; Ojengbede, Oladosu³
¹University of Ibadan; ²University of Chicago; ³Center for Population and Reproductive Health

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Objectives To determine the breast screening practices among first-degree female relatives of breast cancer patients in Ibadan, Nigeria.

Methods A cross-sectional survey is ongoing among first-degree female relatives of breast cancer patients attending the University College Hospital (UCH), in Ibadan, Nigeria. A maximum of two first-degree female relatives were enrolled from families of the breast cancer patients. SPSS version 16 was used for the data analysis. Data was collected on women's socio-demographics and breast screening practices. Breast self-examination (BSE) techniques were demonstrated by the participants. Data was summarized using descriptive statistics such as mean and standard deviation (SD) for continuous variables while proportions was used for categorical variables. Ethical approval was granted by the University of Ibadan/UCH Ethical Review Committee.

Results A total of 101 first-degree female relatives of breast cancer patients belonging to 87 families were studied. The mean age of the women was 32 years (SD=11.1) and 32% were aged 40 years and above. Thirty four percent of the women had bachelor's degree and 49% of the women were petty traders. Among 77% of those who performed a BSE in the last one year, only 46% examined their breast at least once a month. In the last two years, 20% of the women had a Clinical Breast Examination (CBE) while 3% had a mammography screening of their breast. The breast self-examination was recommended to 76% of the respondents, and recommendations was via campaign/outreach in 26% of cases. The CBC, ultrasonography of the breast and mammography were recommended to 25%, 4% and 4% of the respondents respectively. A greater proportion of these recommendations were by a medical doctor. Only 5% of the women demonstrated the correct palpation technique and 7% demonstrated the three levels of pressures during a BSE. None of the women demonstrated the correct search patterns and the perimeter of the BSE technique. About 21% of the women demonstrated the body position during a BSE while 35% of the respondents could visually examine their breast in front of a mirror.

Conclusion A large proportion of the women reported BSE practices, however only very few of them used the correct techniques of BSE. The prevalence of clinical breast examination and mammography were however low. There is need for urgent intervention to improve the breast screening practices of these high-risk women as well as training on the proper breast self-examination techniques.

POSTER

POSTER SESSION TWO

16:30–18:00
Thursday
9 November

Agwai, Celia Imaria

P208 | BREAST CANCER RISK ESTIMATES AND RISK PERCEPTIONS AMONG FEMALE BLOOD RELATIVES OF BREAST CANCER PATIENTS IN IBADAN, NIGERIA

Agwai, Celia Imaria¹; Ajayi, IkeOluwapo¹; Adedokun, Tunde¹;
Ojengbede, Oladosu³; Huo, Dezheng²; Olopade, Olufunmilayo²
¹University of Ibadan; ²University of Chicago; ³Center for Population and
Reproductive Health

Correspondence marianetor@yahoo.com

Methods A cross-sectional survey is ongoing among first-degree female relatives of breast cancer patients attending the University College Hospital (UCH), in Ibadan, Nigeria. First-degree female relatives included the mother, sisters and daughters of a pathologically diagnosed breast cancer patient. The perceived five-year risk of breast cancer risk was assessed on a visual analogue scale from 0 to 4 where 0 is “no risk and 4 ‘high risk’”. The Nigerian Breast Cancer Study (NBCS) risk prediction model was used to estimate the five-year breast cancer risk of the women. SPSS version 16 was used for the data analysis. Data was summarized using descriptive statistics such as mean and standard deviation (SD) for continuous variables while proportions was used for categorical variables and one way ANOVA to compare the mean risk-perception scores and calculated breast cancer risk estimates. Ethical approval was granted by the University of Ibadan/UCH Ethical Review Committee.

Results A total of 101 first-degree female relatives of breast cancer patients belonging to 87 families has been enrolled in the study so far. The mean age of the women was 32 years (SD=11.1) and 32% were aged 40 years and above. The mean age at menarche was 14 years (2.0). About 94% of the respondents reported no presence of a breast lumps while 6% have been diagnosed of benign breast diseases. Half of the women have used hormonal contraceptives. Their mean height and weight was 1.59 cm and 65 kg respectively. The mean five-year risk score was 1.5 (SD=2.3) and the mean lifetime risk-perception score was 6 (SD=4.8). A third of the respondents perceived their risk to be greater compared to women without a family history of the disease. Only 14% of the respondent reported someone suggesting to them that they might be at an increased risk of breast cancer after their family member was diagnosed. More than a sixth of the women had a low risk, while 16% had either average or high risk estimates. Women with a low perception of their breast cancer risk had a higher mean score of low breast cancer risk estimates using the NBCS risk prediction model compared to women with average and high breast cancer risk estimates ($p = 0.163$).

Conclusion The respondents had wrong perception of their breast cancer risk. There is need for more elaborate studies to understand breast cancer risk estimates and levels of awareness among high risk women.

POSTER

Ahmadaye, Ibrahim Khalil

P430 | INFLAMMATORY BREAST CANCER: EXPERIENCE OF THE CENTER MOHAMAMED VI FOR THE TREATMENT OF CANCERS

**WELCOME
RECEPTION
AND POSTER
SESSION ONE**

16:30–18:00

Tuesday

7 November

Ahmadaye, Ibrahim Khalil¹; Kaiss, Hajar²; Qachach, Fadwa²; Bilal, Basma²; Belkheiri, Sara²; Majdoul, Soufya²; Bendahhou, Karima¹; Benchakroun, Nadia²; Benider, Abdellatif²

¹Registry Cancers of Great Casablanca; ²Center Mohammed VI for Treatment of Cancers, CHU

Correspondence brahimahmadaye@yahoo.fr

Background Inflammatory breast cancer (IBC) is a rare but particularly aggressive form. This is a subtype locally advanced to the TNM classification of breast cancer. It accounts for about 1 to 5% of all breast cancers. Its clinical form and its etiology remains unknown.

Objective To describe the epidemiological, clinical, biological and therapeutic inflammatory breast cancer in center Mohammed VI for the treatment of cancer CHU Ibn Rochd Casablanca.

Patients and Methods This is a descriptive transversal study, from January 2010 to December 2015, including all cases of inflammatory breast cancer, treated the center. Data were collected from medical records and the statistical analysis by software R.

Results A total of 57 patients had a IBC supported in the center with an average of $50.2 \pm 11,8$ ans with extremes (32-90 years), 22.8% of cases were using oral contraceptives, 17.5% were menopausal at diagnosis, only one case had a family history of breast cancer. 7.0% were bilateral and right tumor laterality was in 49.1% of cases. Clinical signs were in 82.5% of breast swelling, mastodynie, redness, orange peel, and retraction of the nipple were respectively 36.8%, 29.8%, 19.3% and 22.8% of cases.. The most common histological type was invasive ductal carcinoma in 82.5% of cases. Histological grade SBR 3 was the most frequent in 47.4% of cases. A positive estrogen receptor was observed in 59.5% of cases and progesterone in 40.5% of cases. Her2 is overexpressed in 50.0% of the cases, 20.7% of cases were triple negative.

All cases had received neoadjuvant chemotherapy, surgery, adjuvant chemotherapy, radiotherapy, hormone therapy and targeted therapy were recommended respectively 8.8%, 1.8%, 8.8%, 3,5%, 3.5% of cases. The overall survival at 5 years of the IBC is 27.0 % in our series.

Conclusion Inflammatory breast cancer is less frequent in our center but with very aggressive characteristics. Further investigations are needed to better explain this tumor type.

POSTER

Ahmadaye, Ibrahim Khalil

P439 | ADAPATION TRANSCULTURELLE DE L'ECHELLE DE LA QUALITE DE VIE WHOQOL-BREF EN ARABE DIALECTALE MAROCAINE

**POSTER
SESSION
TWO**

**16:30–18:00
Thursday
9 November**

Ahmadaye, Ibrahim Khalil¹; Bendahhou, Karima¹; Serhier, Zinab³; Kaiss, Hajar²; Safini, Fatima²; Fadwa, Qachach²; Belkheiri, Sara²; Benider, Abdellatif²

¹Cancer Registry of Great Casablanca; ²Center Mohammed VI for Treatment of Cancers, CHU; ³Faculty of Medicine and Pharmacy

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L'évaluation de la qualité de vie a pris une croissance importance dans le domaine de la santé, particulièrement dans le domaine de la cancérologie. La mesure de la qualité de vie liée à la santé est surtout utilisée en tant que critère secondaire d'évaluation dans les essais thérapeutiques, le critère principal étant la survie globale ou sans récurrence.

Au Maroc, l'introduction de la notion de qualité de vie est récente, il existe peu de questionnaires de qualité de vie validés, notamment en cancérologie. Il est possible d'avantage d'adapter des questionnaires francophones ou Anglo-saxons.

L'objectif de ce travail est d'évaluer la fiabilité et la validité de versions dialectale arabe marocaine de l'échelle de la qualité de vie WHO QOL-Bref.

Patientes et Méthodes L'adaptation transculturelle de ce questionnaire a été réalisée selon les recommandations de Beaton. La version finale obtenue a été administrée à 120 patientes atteintes du cancer du sein incluses dans l'étude de manière consécutive sur une durée de 8 mois, au niveau du centre Mohammed VI pour le traitement des cancers, CHU de Casablanca, Maroc. Le questionnaire a été administré deux fois par deux enquêteurs différents avec un intervalle de 15 minutes pour évaluer sa reproductibilité. L'analyse statistique a permis d'abord de décrire la population d'étude, ensuite de vérifier les propriétés psychométriques de l'échelle. La fiabilité a été vérifiée par le coefficient alpha de Chronbach et les coefficients de corrélation intra-classes. La validité de l'échelle a été mesurée par la corrélation multi-traité multi-item.

Résultats Les propriétés psychométriques de l'échelle étaient généralement bonnes. Un coefficient α de Cronbach de 0,78 a été obtenu pour le questionnaire, indiquant une bonne cohérence interne. Une bonne fiabilité du test-retest a également été observée, avec un ICC variant entre 0,83 pour le domaine psychologique (IC à 95% [0,76-0,88]) à 0,92 pour le domaine social (IC à 95% [0,88-0,94]). La validité convergente était bonne, variait de 62% pour la dimension environnement à 100% pour les dimensions « physique » et « sociale ». De même pour la validité discriminante les coefficients de corrélations variaient entre 83% pour la dimension « psychologique » et 100 % pour la dimension physique et « social ».

Conclusion Ce travail a permis de montrer que la version dialectale arabe marocaine du questionnaire WHOQOL– Bref est valide et peut être utilisée pour évaluer la qualité de vie des patientes atteintes par un cancer du sein au Maroc.

PRESENTATION

BIOMARKERS,
HAEMATO-
LOGY & OTHER
ABSTRACTS
13:30–14:30
Thursday
9 November

Ahmed, Abdulaziz

VALIDATION OF OESTROGEN RECEPTOR (ER), PROGESTERONE RECEPTOR (PR) AND HUMAN EPIDERMAL GROWTH FACTOR RECEPTOR (HER2/NEU) EXPRESSION ON AIR DRIED SMEARS AND CELL BLOCKS IN CYTOLOGIC MATERIAL FROM BREAST CANCER PATIENTS – A PILOT STUDY

Ahmed, Abdulaziz¹; Sayed, Shahin¹; Moloo, Zahir¹; Dawsey, Sandy²

¹Aga Khan University Hospital; ²National Cancer Institute, National Institute of Health

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Introduction Estrogen receptor (ER), Progesterone receptor (PR) and Human Epidermal Growth Factor Receptor (HER2) determination on breast cancer tissue have both prognostic and predictive value and are current standard-of-care for all breast cancer patients.

ER, PR, and HER2 are routinely performed on core biopsy. Core biopsy however is costly, requires skilled personnel and is not widely available in Kenya. Fine Needle Aspiration Cytology (FNAC) is a cheap alternative technique for diagnosing solid malignancies including breast cancer. FNAC is widely available, minimally invasive, a point of care test, and requires only modest training and skills in performing the procedure. Previous studies have shown that ER, PR and HER2 immunohistochemistry (IHC) can also be performed on FNAC material. Furthermore, FNAC material can be used to prepare cell blocks using methods similar to the processing of core biopsies.

Aim To determine the sensitivity, specificity, negative predictive value, positive predictive value and accuracy of ER, PR, and HER2 IHC on FNAC air-dried smears and cell blocks, using core needle biopsy IHC as the gold standard.

Methods This was a prospective descriptive analytical laboratory-based study conducted at the Aga Khan University Hospital Nairobi between Jan 2015 and March 2016. All pathologically confirmed breast cancers were consecutively included. Analysis of ER, PR, and HER2 was performed concurrently on both FNAC (air-dried smears and cell blocks) and core needle biopsy material on the Dako Autostainer. Interpretation of all cytology, histology and IHC was done according to the 2014 ASCO/CAP guidelines.

Data analysis was done using SPSS version 22.0 (IBM Corporation). ER, PR, and HER2 FNAC sensitivity, specificity, negative predictive value (NPV), positive predictive value (PPV) and accuracy and kappa coefficient were calculated.

Results Sensitivity, specificity, PPV, NPV and accuracy of the FNAC air-dried smears for ER, PR and HER2 were (%): ER, 72.7, 76.7, 88.9, 52.8 and 73.6; PR, 75.0, 78.7, 76.7, 80.4 and 79.5; and HER2, 72.7, 82.2, 84.3, 85.0 and 77.9.

Sensitivity, specificity, PPV, NPV and accuracy of the cell blocks for ER, PR and HER2 were (%): ER, 100, 100, 100, 100 and 100; PR, 100, 78.6, 75.0, 100 and 87.5; HER2, 100, 94.4, 83.0, 100 and 95.7.

Conclusion ER, PR and HER2 IHC testing on FNAC material is comparable with the gold standard IHC testing of core needle biopsies and provides an alternative method for assessment of ER, PR and HER2 in breast cancers in resource-challenged settings.

POSTER

WELCOME
RECEPTION
AND POSTER
SESSION ONE
16:30–18:00
Tuesday
7 November

Ajeani, Judith

P113 | THE JOURNEY TOWARDS EXCELLENCE IN GYNAECOLOGICAL ONCOLOGY CARE AT MULAGO NATIONAL REFERRAL HOSPITAL. A DECADE OF EXPERIENCE

Ajeani, Judith^{1,2,3}; Okoth, Anthony^{1,3,4}; Nakisige, Caro^{1,3,4}; Katumba, Jerome^{1,2,3}; Namugga, Jane^{1,2,3}; Kaye, Dan^{1,2,3}

¹Mulago National Referral Hospital; ²Makerere College of Health Sciences;

³Association of Obstetricians and Gynaecologists of Uganda; ⁴Uganda Cancer Institute

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Background Uganda urgently needs improved gynaecological cancer care. There is no formal subspecialty training in gynaecological oncology at the major public University Makerere in Kampala, Uganda. In 2008, Mulago National Referral and University Teaching Hospital's department of obstetrics/gynaecology opted transformation into subspecialties to benefit staff and remain relevant. Training finances, lack of organizational remained unresolved.

Problem Uganda has high incidences of gynaecological malignancies. Multidisciplinary team management is recommended, spearheaded by gynaecological oncologists. Most complex cancer surgeries are performed by obstetricians/gynaecologists, general doctors and even surgeons! Patients receive inappropriate care, treatment opportunities missed.

Interventions Opportunistic cancer care interventions were harnessed. North-south collaborations with Universities were established, clinician and subspecialty hospital visits abroad facilitated. Training in cancer management with support towards gynaecological oncology fellowships was implemented. Donations of diagnostic/treatment and theatre equipment, treatment appliances boosted infrastructure. Organizational adjustments, joint tumor board and specialised gynaecological oncology clinic and onsite palliative care teams improved service delivery. Collaboration between the National Referral Hospital and Uganda Cancer Institute was emphasized. Standardised reporting, quality data collection and computerised documentation is ongoing.

Lessons learnt Patient numbers increased with local and cross border referrals reflecting confidence in service delivery. Specialists gained competency in complex gynaecological surgery. South-south collaborations present better options for surgical capacity building. Visiting clinicians are invaluable for training local clinicians. Patients appointments, operative care accessibility improved, hospital stay reduced. Tumor board meetings promote individualised, streamlined care.

Challenges Inadequate health financing in Uganda; the country's only external beam radiation machine is nonfunctional; poorly remunerated providers, blood and critical cadre shortages often cripple care. Diverse training curricula, limited evidence to inform practise, limited protocol dissemination/adherence threaten quality service delivery. Partnerships/collaborations into diagnostics/treatments, and community surveillance development remain untapped.

Conclusion Motivated teams interested in sub specialisation, simple re-organization strategies, external support for cancer care and minimal financial inputs, gynaecological cancer care can significantly improve, inputting time and effort.

PRESENTATION

Akin-Odanye, Elizabeth Oluwatoyin

FAMILY SUPPORTIVE CARE FOR CANCER PATIENTS: CULTURAL INFLUENCE

CULTURAL PERSPECTIVES IN CANCER

07:15–08:20

Friday

10 November

Akin-Odanye, Elizabeth Oluwatoyin¹

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Family caregivers play critical roles in the overall well-being of cancer patients as they provide far-reaching patient support and care. The continuum of care provided by the family caregivers start from even before the patients' formal contact with the healthcare system to the point of death. They often assist with monitoring symptoms, making care decisions, providing financial support and helping with instrumental activities of daily living (IADL). At the time of cancer diagnosis and throughout treatment, patients and their families bring with them culturally embedded generational experiences that supply the blueprints for how they respond to the illness. Culture as a socially transmitted phenomenon carries with it the idea that people with common ties are guided by similar tacit rules and criteria for social life which when applied to illness, influence their perceptions about the meaning of an illness in terms of the perceived illness attribution, seriousness and prognosis; the types of treatment that could be trusted; the likely outcome of health behaviors related to the prevention and control of the disease as well as beliefs about the caregiving role. This presentation will explore the beneficial and detrimental influences of culture (as well as factors perpetuating these) on the supportive care provided to cancer patients by their family caregivers in Africa. The utility of the family-systems approach in helping healthcare professionals understand how each family's caregiving perspective is influenced by different cultural, ethnic, religious or socioeconomic backgrounds as well as gender and age will also be discussed. This will hopefully lead to a more culturally sensitive approach in empowering the family caregivers in the provision of quality supportive care to cancer patients in Africa.

POSTER

WELCOME RECEPTION AND POSTER SESSION ONE

16:30–18:00

Tuesday
7 November

Alabi, Adewumi

P137 | EFFECT OF EDUCATION ON BREAST CANCER MANAGEMENT AMONG MEDICAL PRACTITIONER'S IN LAGOS STATE

Alabi, Adewumi¹; Alabi, Adegboyega²; Adegboyega, Bolanle¹;
Adigun, Adedoyin³; Fatiregun, Omolara⁴

¹Lagos University Teaching Hospital; ²Mecure Healthcare Limited; ³University of Lagos; ⁴Lagos State University Teaching Hospital

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Background Breast cancer is the leading female malignancy in Nigeria. The rising incidence has become a public health concern as there seems to be a paradigm shift to an earlier age of diagnosis than in the western world. The role of medical practitioners in early diagnosis, prompt and right intervention plays a vital role in reducing morbidity and mortality of breast cancer. The medical practitioner is most often the first point of call of this group of patients. The presence of a proper educational intervention in this population of medical care givers will impact the role they play in making prompt diagnosis and referral to the appropriate specialist.

The present study describes a measured effect of a structured intervention in which medical practitioners were trained on proper management of breast cancer. The intervention included a pre-test education and a post-test among a cohort of medical practitioners in Lagos, Nigeria.

Methods A before-and-after cross-sectional study was conducted using a self-administered questionnaire to assess the effect of education in breast cancer management among 70 medical practitioners working in Lagos, Nigeria. Data collated was analysed using SPSS v22.0 statistical packages.

Results Majority (62.1%) of respondents were general practitioners. 84.5% of them perceived breast cancer to be the commonest female cancer in Nigeria. 67.2% of them had previously received training on cancer care. 43.1% of them had ever cared for a cancer patient. In the pre-test 48.3% were aware of the role of chemotherapy after surgery while post interventions 74.4% were informed. The respondents obtained a mean knowledge score of 93.1% on family history as a strong risk factor of breast cancer. 32.8% routinely do clinical breast examination for their patients with 72.4% routinely teaching breast self examination. 51.7% ask their oncologist treatment related questions. 25.9% feel their knowledge on breast cancer treatment is not enough. 94.8% agree that all tissue samples be sent for histology. 58.6% knew that radiotherapy improves survival while post-test 79.5% were informed.

Conclusion Results from this study suggest the need for continuing medical education programmes aimed at improving knowledge, attitude and practice of medical practitioners to breast cancer patients.

PRESENTATION

Alatise, Olusegun

GASTRIC CANCER IN AFRICA – MANAGEMENT, OUTCOME AND CHALLENGES

**GIT:
PANCREAS
AND
STOMACH**

11:00–12:30

Friday

10 November

Adisa, AO¹; Alatise, Olusegun¹; Arowolo, AO¹; Kingham, TP²; Olasehinde, O¹; Onakpoya, UU¹

¹Obafemi Awolowo University; ²Memorial Sloan Kettering Cancer Center

Correspondence segunalatise@yahoo.co.uk

Background Gastric cancer poses a significant public health burden in sub-Saharan Africa. Gastric cancer has a variable but generally low prevalence among sub-Saharan Africa population, despite a high sero-prevalence of *Helicobacter pylori*. Generally, incidence data are weak, reflecting poor diagnostic resources. We present a review of gastric cancer database kept at African Research Group for Oncology in order to assess the presentation and management of GC in a Nigerian tertiary hospital.

Method This is a prospective review of 149 patients treated at the Obafemi Awolowo University Teaching Hospitals complex, Ile Ife, Nigeria from January 2010 to June 2017.

Results There were 149 patients who had endoscopically and/or histo-pathologically confirmed gastric cancer. The median age was 55 years. Males were 103(69.1%) with male to female ratio about 2:1. Fifty-seven (38.3%) were proximal gastric cancers while 92(61.7%) were distal. A significant number [71(47.7%)] did not have any form of surgery. Among those operated, gastrectomy was performed in 27(18.1%) patients while 29(19.5%) had bypass procedure. Sixty-three (42.3%) patients had chemotherapy as neoadjuvant [33(52.4%)] and adjuvant [25(39.7%)]. Only 20(13.4%) of the patients were alive and well as at last follow up. Survival pattern for patients who had chemotherapy was slightly better than patients without chemotherapy.

Conclusion Gastric cancer in Nigeria still presents relatively at an advanced stage with poor prognosis and lower overall survival rates. Perioperative chemotherapy in patients with metastatic and locally advanced gastric cancer significantly increased survival in Nigerian patients. We hereby suggest regular use of this in the management of gastric cancer.

POSTER

WELCOME RECEPTION AND POSTER SESSION ONE

16:30–18:00

Tuesday

7 November

Alatise, Olusegun

P163 | EARLY DETECTION OF COLORECTAL CANCER IN LOW RESOURCE COUNTRIES: RESULTS FROM A PROSPECTIVE COHORT STUDY OF PATIENTS AT HIGH RISK FOR COLORECTAL CANCER

Alatise, Olusegun¹; Ayandepo, Oluwayemisi²; Adeyeye, Ademola²; Seier, Ken³; Kingham, Peter³

¹Obafemi Awolowo University; ²University College Hospital; ³University of Ilorin

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Background Low- and middle-income countries typically lack screening programs for colorectal cancer (CRC). We tested a strategy of colonoscopic screening for patients with rectal bleeding.

Methods This prospective cross-sectional cohort study was conducted at three Nigerian centers. Consecutive patients of age 45 or older with rectal bleeding were evaluated by colonoscopy. The primary endpoint was the percentage of patients with CRC. Secondary endpoints were the percentage of patients with colorectal adenomatous polyps (adenomas) and the CRC stage distribution. A model to predict CRC from clinical characteristics was constructed from data from one hospital and validated on data from the other two hospitals. The trial was registered with clinicaltrials.gov as NCT03032874.

Results From January 2014 to July 2016, 362 patients were enrolled. Overall, 18.2% had CRC and 8.6% had adenomas. The proportion of CRC patients with stage II or III disease was 74%, compared with a historical rate of 36%. In the validation cohort, 56% of patients with rectal bleeding, weight loss, and change in bowel habits had CRC, compared with 1% of patients with rectal bleeding alone. The combination of rectal bleeding with both symptoms significantly predicted CRC in the validation set (odds ratio 12.8, concordance index 0.88).

Conclusions In low-resource settings, patients 45 years and older with rectal bleeding, weight loss, and change in bowel habits should be classified as high risk for CRC. Prioritizing these patients for colonoscopy has potential to minimize the number of patients referred for colonoscopy while increasing the number diagnosed with early-stage CRC.

POSTER

WELCOME
RECEPTION
AND POSTER
SESSION ONE

16:30–18:00

Tuesday
7 November

Alhassan, Solomon Oguche

P431 | THE CHEMO-PREVENTIVE POTENTIAL OF DIETARY SUPPLEMENTATION WITH CRASSOCEPHALUM RUBENS (Juss ex Jacq.) ON N-METHYL N-NITROSOUREA INDUCED COLORECTAL CARCINOGENESIS

Alhassan, Solomon Oguche^{1,2}; Atawodi, Sunday¹

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The ability to prevent the onset and progression of carcinogenesis at various stages has been reported in many plants and natural products. The study set out to assess the effects and preventive potential of dietary supplementation with *Crassocephalum rubens* (a medicinal plant also consumed as a vegetable) on colorectal carcinogenesis initiated via Methyl-Nitrosourea induction in a proven animal model.

Forty-two male wistar rats between the weights of 80-100g were randomly allocated to six (6) groups of seven (7) rats each with treatment groups receiving 2.5, 5 and 10% dietary supplementation with *C. rubens* for sixteen (16) weeks. The study included three groups of controls; MNU control, Normal (saline induced only) control and 10% dietary control. At the end of 12 weeks from the start of rectal MNU instillation, animals were humanely sacrificed under anaesthesia and the parameters Malondialdehyde, endogenous antioxidants enzyme activity, Carcinoembryonic Antigen (CEA), haematology, histology and immunohistochemistry of MutL Homologue-1 protein were evaluated.

A statistically significant increase ($p \leq 0.05$) in the activities of both superoxide dismutase (SOD) and catalase (CAT) was observed in the colon treated groups when compared with Negative (MNU) controls (SOD: 20.80 U/ml, CAT: 29.50 U/ml/mg protein) especially at 5% (SOD: 30.33 U/ml, CAT: 46.38 U/ml/mg protein) and 10% (SOD: 34.60 U/ml, CAT: 46.80 U/ml/mg protein) dietary inclusion. The reverse was observed for the extent of lipid peroxidation measured by assaying for Malondialdehyde in colon homogenates of supplemented groups when compared with MNU control. An increase in PCV, RBC, haemoglobin count, WBC, total platelet count and the Neutrophil-Lymphocyte ratio was also observed. Carcinoembryonic antigen levels were also significantly lower at $p \leq 0.05$ in all in all supplemented groups compared with MNU control subjects. Histologic and immunohistochemical evaluation of tissue sections also showed a reduction in tissue damage and expression of the MutL homologue -1 protein in the diet supplemented groups.

These results point to the ability of the plant to interfere with/interrupt colorectal carcinogenesis and serves a basis for its recommended use in prevention and/management of colorectal cancer among the local African population.

POSTER

WELCOME
RECEPTION
AND POSTER
SESSION ONE

16:30–18:00

Tuesday
7 November

Ali, Shaimaa

**P410 | THE ROLE OF BREAST CANCER SURVIVORS EDUCATION IN
RAISING COMMUNITY AWARENESS TOWARDS BREAST CANCER**

Ali, Shaimaa¹

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Breast cancer is now the most common cancer both in developed and developing regions, around 690,000 new cases being diagnosed annually in developed regions and around 92,000 in Africa (1). In developing countries, a large number of breast cancer patients present late due to a variety of factors which result in delaying in presentation, advanced stages and adverse outcomes.

The aim of the study is to highlight the factors that influence the early presentation of breast cancer; the role of breast cancer survivors in the community sensitisation, helping in early diagnosis and raising awareness of breast cancer.

This is a study follow-up cohort study included breast cancer patients survived after 2 years of completion of their active treatment, who received palliative care intervention throughout their treatment program, and underwent an un eventful following up in a specialized oncology public hospital, patients were from rural areas, age ranging from 25 to 69 years and more than 70% were educated, most of them were referred from unspecialised health centre, qualitative 130 patients. The study was carried out from May 2016 to May 2017. The patients were able to observe themselves to detect symptoms of disease recurrence and to identify women with a breast lump from their families and community, and how to direct them to seek medical advice first before a traditional healers and when to consult a specialist. Moreover the patients in the study were able to share their experience with breast cancer journey with others including newly diagnosed breast cancer patients to help them.

Identified barriers to early detection included; community awareness, social factors, services access and health facilities, economical factors. And low self steam, fear, shyness, healthcare- seeking behaviour(2). From this study there was a significant reduction in losing the patients following up almost 90% of patients completed the follow-up and detecting patients with early relapse in 20%. More than 50% of the patients brought from 3–5 another women with a breast lump for further management. Also there was a rise in numbers of women coming for breast cancer screening and early presentation of breast diseases. Another positive outcome was increasing confidence in these patients, and the most tangible benefit was creating a leader in their own community to overcome the community stigmatisation towards cancer and raising awareness and wrong believes about breast cancer.

POSTER

Ali, Zipporah

**P334 | INTEGRATING PALLIATIVE CARE IN CANCER CARE:
THE KENYA EXPERIENCE**

**POSTER
SESSION**

TWO

16:30–18:00

Thursday

9 November

Ali, Zipporah¹

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Regional and national associations in Africa are working together with African Ministries of Health and other relevant stakeholders to ensure that there is greater access to palliative care for cancer patients. This encompasses addressing issues of accessibility, affordability (especially to pain relieving medicines like oral morphine), quality PC and a human's right approach to PC. National associations advocate for the integration of palliative care for children, adults and the older people into all levels of health services in within their countries as a basic human right.

Most Africa countries now recognize the pain and suffering of many patients and families who have no access to cure (where cure is possible), cannot afford treatment for cancer or other progressive chronic illnesses, are stigmatized or discriminated against because of their illness among many other dehumanizing issues. In the recent past Kenya has have has extensively advocated for the integration of palliative care into their health services; this resulting in many health care professionals being trained in PC; Palliative Care Units being set up in government hospitals; the development of national palliative care guidelines/policies; development of cancer control strategies and cancer treatment protocol and guidelines that include palliative care and pain relief.

In Kenya, intensive work over the past seven years has seen the number of free-standing hospices in Kenya grow from 7 to 18, reaching an estimated total of 30,000 (KEHPCA Annual Report 2012) patients each year. The number of palliative care units has also increased from 18 to over 40.

National associations are challenged by an enormous need for services, education and training of health care professionals, the public and policy makers, and accessing essential medicines for pain relief and symptom control.

Several other initiatives are being taken to improve palliative care for both adults and children in Kenya. These include integrating palliative care in undergraduate medical and nursing curriculum; the National Guidelines for Cancer Management as well as in the National Framework for Non Communicable Diseases; and advocating to the Ministry of Health to procure morphine powder for constitution of oral morphine for government hospitals that have integrated palliative care. In 2016, the MoH procured over 50 kilograms of morphine which is the first time in the history of Kenya.

POSTER

POSTER SESSION TWO

16:30–18:00
Thursday
9 November

Aluko, Joel O.

P247 | AWARENESS OF GENETICS, KNOWLEDGE AND UTILIZATION OF SELF-MANAGEMENT PRACTICES AMONG PEOPLE LIVING WITH SICKLE CELL DISEASE IN IBADAN, NIGERIA

Aluko, Joel O.¹; Oludare, Tolulope R.¹; Adejumo, Prisca O.¹

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Background Sickle cell disease (SCD) is a group of hereditary blood disorders that affects haemoglobin. People living with sickle cell disease suffer from complications of the disease which includes anemia, sickle cell crises, stroke, renal failure, increased susceptibility to infection, acute chest syndrome, retinal detachment and priapism. This study identified the awareness of genetics, knowledge and utilization of self-management practices among people living with sickle cell disease attending University College Hospital, Ibadan, Oyo state, Nigeria.

Methods This is a non-experimental descriptive study which utilized a purposive sampling method and the sample size was calculated using the total population. A total of 111 respondents were recruited for the study. A self-designed questionnaire divided into 5 sections was used for data collection. Data collected were analyzed using the statistical package for social sciences. Analyzed data were presented in frequencies and percentages and hypotheses were tested using chi-square and significant level set at $p \leq 0.05$.

Findings The findings of this study identified better level of awareness of SCD among the educated participants but still indicated the deficiencies of patients' awareness concerning genetics of SCD, knowledge and attitude to utilization regarding self-management of Sickle cell disease and also provided information about where nurses can come into play in improving patients' level of awareness and providing patients with tools necessary for effective self-management of their condition in order to prevent complications of SCD. Taking of prescribed medication was identified as the self-management practice utilized by majority of the participants.

Conclusion A good level of awareness of genetics of SCD and knowledge of self-management of SCD will help to improve the utilization of self-management practices among people living with SCD and it will also aid them in developing adaptive coping mechanisms. SCD is preventable by pre-marital counseling, genetic counseling, pre-natal screening and ban on marriages between two people living with SCD.

POSTER

Amanya, John Vianney

P411 | BEST PRACTICES IN HELPING CANCER PATIENTS QUIT SMOKING-A LITERATURE REVIEW

**WELCOME
RECEPTION
AND POSTER
SESSION ONE**

16:30–18:00

Tuesday

7 November

Amanya, John Vianney¹

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Background Smoking is the leading cause of preventable disease, disability, and death. One of the most cost-effective ways to improve care of many patients with cancer is to help smokers stop smoking. Existing information indicates that quitting smoking is tough, but patients need support to quit. Although medications are available to help with the withdrawal symptoms, research suggests that many smokers with cancer are not getting the help they need to quit. Quitting increases a patient's chances of responding to a particular treatment and it can reduce complications as well as the risk of a recurrence—all of which can save precious health care resources. Benefits of quitting smoking after a diagnosis of cancer are clear. Active involvement of nurses will be required to address the worldwide epidemic of smoking-related illnesses.

Objective Documenting the existing practices in helping cancer patients quit smoking, and increase awareness on cancer prevention and treatment among health practitioners and cancer patients.

Methodology A formative research including desk reviews, web-search, group discussion and open ended questionnaire.

Issues Misconceptions among nurses have hampered efforts, most notably the idea that patients who smoke do not want to quit. In fact, studies suggest just the opposite—patients do want to quit and expect to discuss this with their care providers. Another barrier has been lack of training. Most nurses, like most health care professionals, are not trained to help patients quit smoking, leaving some nurses to feel as though they don't know enough to help patients. A significant percentage of patients continue to smoke after a diagnosis of cancer, and that speaks to the challenges of breaking dependence on tobacco.

Results Studies have shown that when cancer nurses deliver smoking cessation treatments to patients, quit rates rise. Many nurses in cancer care are not aware of the benefits of quitting smoking after the diagnosis of cancer. Even for patients whose cancers are potentially curable by surgery, quitting can be a challenge. Users who are aware of the dangers of smoke, 3 out of 4 want to quit.

Conclusion Nurses need to realize that they are incredibly powerful in helping patients with cancer quit smoking. It is essential for patients to quit smoking in order to improve their survival and quality of life. Good cancer care requires trying hard to support patients. Nurses need to feel comfortable helping patients quit, work. However, there are serious safety risks in helping people quit.

POSTER

Ambrosio, Maria Raffaella

P260 | MICRORNAS SEQUENCING UNVEILS DISTINCT MOLECULAR SUBGROUPS OF PLASMA BLASTIC LYMPHOMA

**POSTER
SESSION
TWO**

**16:30–18:00
Thursday
9 November**

Ambrosio, Maria Raffaella^{1,2,3}; Mundo, Lucia³; Satya Vara, Prasad⁴;
Sayed, Shaheen⁵; Leoncini, Lorenzo³

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Plasmablastic lymphoma (PBL) is an aggressive lymphoma, often arising in the context of immunodeficiency and associated with Epstein-Barr virus (EBV) infection. The most frequently detected genetic alteration is deregulation of MYC gene through the translocation - t(8;14)(q24;q32). The diagnosis of Plasmablastic lymphoma is often challenging because it has an overlap in morphology, immunophenotype, cytogenetics and virus association with other lymphomas and plasma cell neoplasms; further, its molecular basis remains elusive. In the present study we aimed to better define the possible contribution of EBV infection as well as miRNA deregulation in PBL pathogenesis. We studied 20 cases of PBL, 20 Burkitt lymphomas (BL), and 20 extra-medullary plasmacytoma (EMPC). We used qPCR and immunohistochemistry to assess EBV latency patterns, while micro-RNA (miRNA) profiling was performed by next generation sequencing (Illumina). Our analysis revealed non-canonical EBV latency program with the partial expression of some proteins characterizing latency II and the activation of an abortive lytic cycle in PBL samples. In fact, EBNA-1 was detected in 12/13 cases (92.3%), LMP-1 and LMP-2 in 1/13 and 10/13 (7.7% and 76.9%, respectively) and EBER in 12/13 (92.3%). BZLF-1/ZEBRA was found in 12/13 cases (92.3%) and both BMRF-1/Ea-D e BHRF-1/Ea-R in 10/13 (76.9%), while none of the cases expressed BLLF1/gp350. Moreover, we identified miRNA signatures discriminating PBL from BL and EMPC. Interestingly, based on the miRNA profile, PBL appeared constituted by two discrete subgroups related to either BL or EMPC, respectively. This pattern was confirmed in an independent set of cases studied by RT-qPCR and corresponded to different clinico-pathological features in the two groups, including HIV infection, MYC rearrangement and disease localization. To explore the involvement of the detected miRNAs in PBL pathogenesis, we searched for genes targeted by the miRNA differentiating the molecular subtypes of PBL. Among others, we found genes encoding for tumor suppressors (PTEN, PBX2) and lipid metabolism controller (PPARGC1A, PLIN2/adipophilin). The expression level of the encoded proteins was then checked by immunohistochemistry in all the cases. PTEN, PBX2, PPARGC1A, PLIN2/adipophilin and FOXK2 showed higher level of expression in all the PBL cases that clustered closer to the BLs. Finally, we observed that PBL molecular features in part depended on HIV status. In conclusion, the present study offer novel insights on PBL biology and pathogenesis that might be useful for the future management of this orphan disease in terms of classification, diagnosis and treatment.

POSTER

Ambrosio, Maria Raffaella

P261 | UNVEILING ANOTHER MISSING PIECE IN EBV-DRIVEN LYMPHOMAGENESIS: EBV DETECTION IN “EBER-NEGATIVE” B-CELL LYMPHOMAS

**POSTER
SESSION
TWO**

**16:30–18:00
Thursday
9 November**

Ambrosio, Maria Raffaella¹; Mundo, Lucia¹; Onyango, Noel²; Granai, Massimo¹; Piccaluga, Pier Paolo^{3,4}

¹University of Siena; ²University of Nairobi; ³Bologna University School of Medicine; ⁴Euro-Mediterranean Institute of Science and Technology (IEMEST), Palermo

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Epstein-Barr virus (EBV) is a gammaherpesvirus linked to a number of lymphoid and epithelial malignancies, including Burkitt lymphoma (BL), Hodgkin lymphoma (HL) and diffuse large B cell lymphoma (DLBCL), with a frequency ranging from 10% to 100% in endemic BL cases. The possible contribution of EBV to B-cell lymphomas pathogenesis is largely unknown. It has been recently demonstrated that EBV might be associated with all of the BL cases, including those diagnosed as EBV negative by a mechanism of hit-and-run. Early during oncogenesis, viral genes are essential for initiating disease. Progressively, viral genome is lost to escape the immune system and host mutations accumulate in proto-oncogenic cell. The main problem with the hit-and-run hypothesis is the lack of evidence in primary tumors. The routine methods applied to detect the virus [i.e. immunohistochemistry – IHC and EBV-encoded RNAs (EBER) in situ hybridization – ISH] have a low specificity and accuracy. The aim of this study was to identify the presence of EBV infection in a series of “EBV negative” B-cell lymphomas by applying conventional and non-conventional methods (i.e. EBV viral load measurement). We investigated a total of 61 cases, namely 14 BL, 29 DLBCL and 18 HL. First of all we performed IHC for EBNA-1 and LMP-2A as well as EBER-ISH in all samples. We diagnosed 8 EBER-positive and 6 EBER-negative BL, 5 EBER-positive and 24 EBER-negative DLBCL, 3 EBER-positive and 15 EBER-negative HL. Then all cases were screened by Quantitative reverse transcription PCR targeting BamH1 W and EBNA-1 conserved region of EBV genome. We observed a significant presence of EBV in 100% (6/6) of BL, 46% (11/24) DLBCL and 47% (7/15) of HL cases, thus demonstrating EBV infection also in a large part of samples diagnosed as “EBV negative” by conventional tools. Of note, higher viral loads were found in the 6 BL-EBER negative compared with the 11 DLBCL EBER-negative tumours and the 7 HL EBER-negative cases. Our findings point at the possibility that EBV might contribute to a larger number of cancers than previously known. Whether confirmed on a larger cohort of cases and different tumor types, the current study may further support the rationale for strengthening the effort toward EBV vaccines that could potentially prevent the development of EBV-associated neoplasms independently of the presence or absence of viral genomes in the neoplastic cells, thus affecting the worldwide epidemiology of lymphomas.

POSTER

Ambss, Stefan

P209 | ASPIRIN USE REDUCES THE RISK OF AGGRESSIVE PROSTATE CANCER AND DISEASE RECURRENCE IN MEN OF AFRICAN DESCENT

**POSTER
SESSION
TWO**

16:30–18:00

Thursday

9 November

Ambss, Stefan¹; Smith, Cheryl¹; Dorsey, Tiffany¹; Tang, Wei¹; Jordan, Symone¹; Loffredo, Christopher²

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Objective Men of African descent experience a disproportionately high prostate cancer burden and an excessive mortality. Intratumoral inflammation was found to be associated with aggressive prostate cancer. We and others have reported that prostate tumors in African-American (AA) patients harbor a distinct immune and inflammation signature when compared with European-American (EA) patients. These observations suggest that inflammation could be a driver of aggressive disease in men of African descent, leading to the hypothesis that an anti-inflammatory drug could prevent disease progression.

Methods We examined the relationship between the use of aspirin, a non-steroidal anti-inflammatory drug, and prostate cancer in the NCI-Maryland Prostate Cancer Case-Control Study (United States) consisting of 823 men with incident prostate cancer (422 AA and 401 EA) and 1034 population-based men without the disease diagnosis (486 AA and 548 EA).

Results We observed a significant inverse association between regular aspirin use and prostate cancer among AA men. Stratification of AA patients by disease stage showed that daily and long-term (> 3 years) aspirin use significantly decreased the risk of advanced disease, but not early-stage disease (T1/T2). Furthermore, regular aspirin use significantly reduced disease recurrence in AA men.

Conclusions Regular aspirin use is associated with a decreased risk of advanced stage prostate cancer and increased disease-free survival in AA men. Thus, aspirin use before and after a prostate cancer diagnosis may prevent the development of aggressive disease in men of African descent who are at a heightened risk of a lethal malignancy.

PRESENTATION

Ana, Godson

AIR POLLUTION IN NIGERIA: EVIDENCE, IMPACTS, REMEDIES AND FUTURE OUTLOOK

ENVIRONMENTAL FACTORS AND CANCER: PESTICIDES & OTHER TOXINS

Ana, Godson¹

¹University of Ibadan

14:40–16:30

Thursday

9 November

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Recently, air pollution has been incriminated as one of the leading environmental risk factors for disease burden globally according to WHO reports. Current evidence in Nigeria suggests that mobile sources including automobiles constitute the largest contributor to urban air pollution while stationary sources including manufacturing industries, refuse combustion and power plants contribute the rest. Ambient levels of key air pollutants including PM₁₀, PM_{2.5}, CO₂, CO, NO₂, SO₂, CH₄ VOCs, O₃ Pb, Cr, Ni, PAH have been found to exceed their permissible guideline levels particularly in high activity areas. Air pollution in Nigeria is found to negatively affect the ecosystems including plants, animals, properties and health of populations. Health indicators such as lung function parameters FEV₁ has been found to be on the decline in addition to other markers indicating various levels of vulnerabilities including lung cancers. Efforts at remedying the present level of pollution and their associated problems have been far from satisfactory and are often fraught with several challenges including poor infrastructure, inadequate technical know-how, weak regulation and poor governance structure. In order to address some of the identified shortfalls regarding air pollution in Nigeria it is imperative to engage in multidisciplinary, multi-center or multi-regional research that would foster technical support, build capacity, generate sufficient database that is required for implementing more effective interventions in the future.

POSTER

WELCOME RECEPTION AND POSTER SESSION ONE

16:30–18:00

Tuesday
7 November

Anarado, Agnes

P164 | COMPARATIVE STUDY OF FACTORS ASSOCIATED WITH THE UPTAKE OF CERVICAL CANCER SCREENING AMONG NURSES AND TEACHERS IN KOGI STATE, NIGERIA

Anarado, Agnes¹; Abraham, Hannah²

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Objectives This study compared cervical cancer screening uptake, perceived motivating and suggested screening enhancing factors among nurses and teachers in Kogi State Nigeria

Methods It is a cross-sectional descriptive survey that purposely recruited 86 nurses and 81 teachers from two healthcare facilities and two secondary schools in Kogi state. Data was collected using a pretested, self-administered, researchers' developed questionnaire. A mean decision score >2.5 for items in Likert type scaled response pattern identifies significant perceived motivating and suggested screening enhancing factors to cervical cancer screening uptake. Data was analysed using descriptive and non-parametric inferential statistics at $P \leq 0.05$ level of significance.

Results Cervical cancer screening uptake was generally low (25.1%): but more among teachers (16.5%) than nurses (8.6%). Perceived motivating factors for respondents that screened include: knowledge that cervical cancer can be prevented through screening (3.50) were elicited by all; Teachers also elicited fear of developing cervical cancer (3.50) and encouragement by a health worker (3.33); Nurses perceived that regular visit to healthcare provider (3.14) and constant hearing about the test helped them decide to be screened (3.31). Teachers' suggested enhancing factors to women's uptake of cervical cancer screening were: designated clinics with adequate privacy (3.70) and making screening part of primary healthcare services (3.57); Nurses suggestion were: making the screening services free (3.75) and increasing awareness about screening (3.71) while increasing awareness about women's susceptibility to cervical cancer was suggested by both teachers and nurses (3.71 & 3.87) respectively. Significant difference exists in the groups perceived enhancing factors ($P < .05$).

Conclusion Cervical cancer screening uptake is very low among the two groups studied, but more among teachers. Increasing women's awareness of susceptibility to cervical cancer and availability of screening tests, making screening services free, accessible and in an acceptable place might improve uptake.

POSTER

WELCOME RECEPTION AND POSTER SESSION ONE

16:30–18:00

Tuesday

7 November

Anarfi, Kwabena Kwarko

P138 | BURDEN OF COST ON CANCER PATIENTS RECEIVING CARE AT THE NATIONAL CENTER FOR RADIOTHERAPY AND NUCLEAR MEDICINE

Anarfi, Kwabena Kwarko¹; Vanderpuye, Verna¹; Opoku, Samuel¹; Adesi, Kyei¹
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Background Individuals diagnosed with cancer, aside from the physical burden of the disease, also experience various forms of distress including financial burden. The level and prevalence of financial burden among cancer patients have been studied in various locations globally. Even in high income countries, out of pocket payments for cancer care is a leading cause of bankruptcy. The cost of cancer care is mostly borne by patients/families or caregivers in most of Africa where national health insurance schemes are dysfunctional. In Ghana very few have complete health insurance coverage for cancer care.

Aim The aim of the study is to evaluate the burden of cancer care cost in patients presenting to our unit.

Method The study was a descriptive cross-sectional study. A purposive sampling technique was used to select 100 Ghanaian patients who received radiotherapy and chemotherapy at the National Center for Radiotherapy and Nuclear Medicine at the period of data collection. A piloted questionnaire was administered to eligible participants. Measurables included employment status, financial distress levels, cost of various treatments and patient-oncologist cost discussions. Data collected was analysed with statistical software (SPSS 22).

Results Out of 100 questionnaires, 80 were accurately answered yielding an 80% response rate. Majority (71.3%) of the participants overall reported having “a large amount” of financial distress, while 73.8% of the respondents did spend more on their cancer treatment than expected. The annual reported income was between GHC 6000 (\$1500) and GHC 80,000 (\$20,000), however 41.25% reported an annual income less than GHC 6000.00 (\$1500). Cost of Radiotherapy treatment was the most distressing factor compared to chemotherapy treatments. Fifty four percent received financial support from family and friends, 41% were self sponsored, 4.0% were employer sponsored and 1.0% were sponsored from church funds. There was a significant association between the annual income of patients and financial distress ($p = 0.014$). Females tend to be more financially disadvantaged. In spite of the high cost of treatment, the primary concern was to receive optimal treatment.

Conclusion Cancer patients who receive care at the cancer unit at the Korlebu Teaching hospital, Accra. Ghana suffer high financial burden related to the cost of care. Strong political will is needed to make accessible comprehensive health funding for all cancer therapies.

POSTER

WELCOME RECEPTION AND POSTER SESSION ONE

16:30–18:00

Tuesday
7 November

Andrews, Caroline

P139 | EFFECTIVE PROJECT MANAGEMENT FOR PUBLIC HEALTH RESEARCH IN LOW AND MIDDLE INCOME AFRICAN COUNTRIES

Andrews, Caroline¹; Odiaka, Emeka²; Lounsbury, David³; Jalloh, Mohamed⁴; Rebbeck, Timothy^{1,5}; and The MADCaP Network

¹Dana-Farber Cancer Institute; ²University College Hospital; ³Albert Einstein College of Medicine; ⁴Hôpital Général de Grand Yoff/IFRU-SF; ⁵Harvard T.H. Chan School of Public Health

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Objective To present a project management toolkit designed to support a large, multi-center research study of prostate cancer genetic epidemiology in Africa [U01-CA184374; Rebbeck, PI; Men of African Descent and Carcinoma of the Prostate Consortium (MADCaP)]. To describe strategies for implementing the tool kit in academic medical Institutions from four African countries (Nigeria, Ghana, Senegal and South Africa).

Methods A toolkit to assist project managers' capacities to support research aims was designed around multiple components. The toolkit was developed during project startup by members of the MADCaP Project Managers Working Group; from African Recruitment/Implementation Site (I), Twinning/Mentoring Sites (M), and Central Resource Sites (C). Initial training was provided by use of videos, training manuals, web meetings and by team members from M and C conducting site visits to each I.

Results Toolkit development occurred via a series of meetings (on and offline) facilitated by co-chairs of the Project Managers Working Group. Key themes to be addressed by the toolkit included patient recruitment, survey and biospecimen data management, and communications. The resultant toolkit included: (1) a management process flow chart; (2) a cyclical schedule of weekly activities; (3) data management protocol; (4) training resources; (5) orientation to the secure web-based communications platform; (6) guidelines for manuscript development/ancillary grant writing; (7) project closeout; and (8) tailored instruments for risk assessment, quality control, and evaluation.

Conclusions Solid project management in an African context presents various challenges and opportunities for public health research. Effective project management is fostered through on-going communication about the needs of 'frontline' project managers. The toolkit developed for MADCaP facilitates a continuous process for study monitoring. Further refinements of the toolkit, as needed over the project's life cycle, will ensure its utility. Further evaluation will examine the role of the toolkit in facilitating each center's propensity to achieve stated goals in relation to their unique challenges in implementing, monitoring and strengthening public health research in low income countries.

POSTER

WELCOME RECEPTION AND POSTER SESSION ONE

16:30–18:00

Tuesday
7 November

Anglade, Fabienne

P140 | ANATOMIC PATHOLOGY IN LOW RESOURCE SETTINGS: A RETROSPECTIVE DESCRIPTIVE STUDY OF IMPLEMENTING PATHOLOGY SERVICES AT UNIVERSITY HOSPITAL IN MIREBALAIS, HAITI

Anglade, Fabienne¹; Damuse, Ruth¹; Greenberg, Lauren²;
Bhangdia, Kayleigh²; Orozco, Daniel²; Brock, Jane³

¹Zanmi Lasante; ²Partners In Health; ³Brigham and Women's Hospital

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Objectives In order to properly diagnose and treat cancer, accurate pathology services and diagnostics are essential across all geographies. In many low and middle income countries (LMICs), pathology services including facilities to process samples as well as trained pathologists and histo-technicians are scarce. In Haiti, there are only four pathologists working in the public sector with a population over 10 million people. Despite these challenges, local capacity can be built and high quality pathology services can be implemented over time. We describe here a phased approach to implementation of pathology services at University Hospital in Mirebalais (HUM)—a tertiary hospital in the central plateau of rural Haiti.

Methods This study explores the first phase of implementation in Haiti (October 2016 through April 2017) where samples are now processed into paraffin blocks onsite. These blocks are subsequently sent to Brigham and Women's Hospital (BWH) and Newton Wellesley Hospital (NWH) in Boston for diagnoses. Turnaround time (TAT) is highlighted here as a means to measure laboratory efficiencies. TAT is defined as the amount of time from the initial procedure to generation of a finalized diagnosis and is inclusive of three steps: in country processing, transit and logging, final processing/diagnostics. Described here are the steps taken to achieve diagnosis and associated stepwise TAT. Clinical characteristics, and demographic indicators are also described.

Results During the study period, 603 specimens from HUM were processed. Of the 603, 154 (25.54%) were from male patients, 450 (74.63%) were from female patients, and the average patient age was 43 years old. 131 specimens are included in our TAT analysis and are representative of those included in this first phase of implementation (procedure performed during implementation phase). The average TAT was 77.88 days (range, 26–145 days; interquartile range, 102–55 days). The average TAT of in-country processing was 25.75 days (range, 1-64 days; interquartile range, 34–14 days), the average TAT of transit and logging was 13.45 days (range, 5-26 days; interquartile range, 21–6 days), and the average TAT of final processing and diagnoses was 38.67 days (range, 7–85 days; interquartile range, 61–19 days).

Conclusion These early outcomes suggest that pathology services can be implemented in low resource settings through a phased approach and quality diagnostics can be achieved. As in-country capacity increases, reliance on US based institutions will decrease and turnaround time will decrease.

PRESENTATION

Anyanful, Akwasi

A NOVEL MATHEMATICAL MODEL FOR INDIVIDUALIZING CHEMOTHERAPY FOR BREAST CANCER

**BASIC SCIENCES
& CHEMO-
THERAPY
ABSTRACTS**

13:30–14:30

Friday

10 November

Anyanful, Akwasi¹; Gharthey, Frank¹; Ekor, Martins¹; Debrah, Samuel¹

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In Ghana, over 70% of breast cancer cases presented to hospitals are in advanced stages of the disease. Thus the first line of treatment is primarily surgery followed predominantly by chemotherapy. When applying chemotherapy, it is important to avoid overtreatment or undertreatment and spare patients the toxic side effects if they will not benefit from chemotherapy. Thus tailoring treatment to ensure each individual breast cancer patient receives optimal therapy based on the biological characteristics of their tumours is crucial. We have developed a novel mathematical model based on treatment results that pre-determines how treatment for breast cancer can be individualized for optimum benefits. In deriving the equation, we used the prognostic and predictive proliferation marker Ki67 as well as tumour stage to derive the tumour biological coefficient and patients' constant. The latter represents patients' unique response to treatment in terms of survival in years, per cycle of chemotherapy received singly or in combination. The overall model is governed by the equation: $S_c = K_c [NCC] \times \{[TS] [Ki67]\}^{-1}$, where $\{[TS] [Ki67]\}^{-1}$ is the tumour biological coefficient, [NCC] number of cycles of chemotherapy and K_c is the survival index (constant) – number of years survived/cycle of chemotherapy – for the patients under study. With a known K_c , we now use it to pre-determine individualize treatment for any patient (Pt) using the equation $P_t = K_c \times \{[TS] [Ki67]\}^{-1}$. This model, designed based on successful treatment results can predetermine the number of cycles of chemotherapy each patient requires for optimum survival and it is in line with the ultimate goal of personalized treatment. This model is applicable for treating other cancers which present with solid palpable lesions and could revolutionize cancer treatment.

POSTER

Aruah, Simeon Chinedu

**P382 | ANAEMIA IN CANCER PATIENTS UNDERGOING
RADIOTHERAPY AND CHEMOTHERAPY IN NATIONAL HOSPITAL
ABUJA, NIGERIA**

Aruah, Simeon Chinedu¹

¹National Hospital Abuja, Nigeria/University of Abuja

**POSTER
SESSION
TWO**

16:30–18:00

Thursday

9 November

Correspondence aruasimeonedu@yahoo.com

Introduction Many cancer patients present with anaemia prior to Radiotherapy and Chemotherapy or may experience anaemia/worsening of anaemia at some point during treatment.

Aim Pattern of anaemia in cancer patients undergoing Radiotherapy and Chemotherapy using serial haemoglobin measurement.

Methodology 201 cancer patients of both sexes with histopathologically confirmed malignancies (solid cancers) were recruited over a period of 8 months. Patient's pre-treatment Hb was taken. Patients were distributed into Radiotherapy, Chemotherapy and Chemoradiation. Their Hb were measured every 2 weeks. The blood film pictures of the patients were examined. The whole process was terminated after 3 consecutive Hb reading. Anaemia was classified into:

- Less than 10g/dl – severe anaemia
- 10–10.9g/dl – moderate anaemia
- 11–11.9g/dl – mild Anaemia
- 12g/dl and above-no anaemia

Results Out of 201 cancer patients, 86.1% and 13.9% were female and male respectively. Age range 25–75 years with median value of 50 years, 100 patients were on chemotherapy, 63 on radiotherapy and 38 on Chemoradiation. Breast was commonest cancer taking cognizance that female dominated the study group, WHO performance status was 0 (108) and 1 (93), 72% of the patients had stage III disease. The prevalence of anaemia in study was 63% and 37% had adequate Hb level using our classification scale. At the end of therapy, 62% (100) and 55.6% (63) patients on Chemotherapy and radiotherapy respectively had their Hb level between 11–12g/dl, while 39.5% of patients on Chemoradiation had Hb value of 10–10.9g/dl. At P-value greater than 0.05, there was no statistical significance on distribution of mean Hb, standard deviation based on sex and treatment type.

Conclusion Prevalence of anaemia in the study was 63% while 37% had adequate Hb. All the treatment modality had no impact on Hb level of patients with Hb between 11–12g/dl. However, at 95% CI, Chemotherapy had greatest impact on Hb level during therapy. Thus Chemotherapy, 9.60–10.62g/dl, Radiotherapy 11.52–12.13g/dl and Chemoradiation 10.98–11.3g/dl.

POSTER

Ashktorab, Hassan

P014 | DISTINCTIVE VARIANTS IN AFRICAN AMERICAN WITH COLORECTAL NEOPLASIA

**WELCOME
RECEPTION
AND POSTER
SESSION ONE**

16:30–18:00

Tuesday

7 November

Ashktorab, Hassan¹; Azimi, Hamed; Varma, Sudhir; Brim, Hassan
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Purpose African Americans have a higher incidence and mortality from colorectal cancer. This disparity might be due, in part, to the type of mutations in driver genes. In this study, we examined alterations specific to APC, MSH3, and MSH6 genes using targeted exome sequencing (TES) to determine distinctive mutations in the course of neoplastic transformation.

Experimental Design A total of 140 African American colon samples (30 normal, 21 adenomas, 33 advanced adenomas and 56 cancers) were used as our discovery set on an Ion Torrent platform. A subset of the discovery set consisting of 36 samples was used as validation set on an Illumina platform. Bioinformatics analyses were performed and novel validated mutations are reported.

Results Two novel MSH6 variants were validated that were mapped to an intron between exons coding for the MutS-V region near the MSH2 binding site. For MSH3, 4 known variants were validated and were located in exon 10 (3 nonsynonymous) and exon 18 (1 synonymous). As for APC, 20 variants were validated with 3 novel variants: 2 stopgain and 1 nonsynonymous. These variants mapped to the Armadillo repeats region, to the last 15-amino acid (aa) repeat region, and between the second and third 20-aa repeats region, respectively.

Conclusion We defined novel variants that target DNA mismatch repair and APC genes in African Americans with colorectal lesions. A greater frequency of mutations in genes encoding DNA mismatch repair functions and APC likely play major roles in colorectal cancer initiation and a higher incidence of the disease in African Americans.

POSTER

Asiimwe, Patience

**P038 | TOWARDS INCREASED AWARENESS AND ADVOCACY:
UGANDA'S COMMEMORATION OF WORLD CANCER DAY 2017**

**WELCOME
RECEPTION
AND POSTER
SESSION ONE**

16:30–18:00

Tuesday

7 November

Asiimwe, Patience¹; Angiji, Evelyn¹; Ebusu, Paul¹

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Background Uganda Cancer Society (UCS) together with Uganda Cancer Institute (UCI) partnered with government and other stakeholders to commemorate World Cancer Day (WCD) 2017. The global theme for 2017 which is “WE CAN. I CAN” explores how everyone collectively or as an individual can do their part to reduce the burden of cancer.

Aim To mobilize stakeholders in awareness creation and advocacy for cancer by recognizing its burden, control efforts as well as the challenges faced in the fight locally.

Approach UCS built collaborations within its membership and UCI fostering joint planning. This involved a review of the commemoration of WCD 2016 for purposes of drawing lessons for improvement. The planning established a schedule of activities across the month of February and a program for 4th of February. The commemoration included a match past around Kampala city. The ceremony that was held at UCI was graced by Uganda’s Minister of Health as the guest of honor. A key note address was delivered indicating the progress in efforts and calling for more collaborative efforts led by government. Additionally, poems and songs composed about cancer were performed beside exhibitions conducted by civil society organizations on their work. The commemoration program for 4th February was wrapped up with a visit to the patient wards led by the guest of honor.

Outcome Increased collaboration and partnerships was built among stakeholders including government, civil society, media, private sector and the general public as demonstrated in effective joint planning. The match past attracted considerable attention drawing a number of public participants to join and attend the ceremony. The events in this month were widely covered by the media that included news bytes on television and radio stations. Notably, 3 articles were published in major national newspapers. UCS Facebook page posts generated over 4,040 likes up from 800 likes in 2016; additionally the Facebook activity reached 2,942 and engaged up to 1,599 people. On twitter, #FightCancerUg and #4Kidswcancer generated 533 tweets, reached 70,000 accounts creating an impression of 311,317 with more than 50 people directly engaged. The WCD press conference held on 3rd February at Ministry of Health attracted over 40 media houses.

Conclusion Partners’ solidarity in the preparations and commemoration of WCD 2017 showed that together we can harness greater results in cancer control in Uganda. The impact of 2017 commemoration was 3 times more effective in reach than 2016.

POSTER

WELCOME
RECEPTION
AND POSTER
SESSION ONE

16:30–18:00

Tuesday

7 November

Asuzu, Chioma

P165 | KNOWLEDGE OF CANCER, ATTITUDE AND PRACTICE OF BREAST SELF-EXAMINATION AMONG VISUALLY IMPAIRED FEMALE ADOLESCENTS IN A TERTIARY EDUCATIONAL INSTITUTION IN NIGERIA

Asuzu, Chioma¹; Oluwaseye, Esther¹

¹University of Ibadan

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Background Breast cancer is a leading cause of death worldwide. Breast cancer is the most common form of cancer among females in the developed and developing countries. According to WHO report, there were about 519,000 who die from breast cancer annually; and an estimated one million women develop breast cancer each year. Early identification of breast abnormality is very important in the prevention of breast cancer. This could be done through self breast examination among adolescents especially in resource poor countries. Studies in self breast examination have been carried out among female adolescents but not yet among the virtually impaired ones in whom the occurrence of the disease would be an extremely challenging situation. This is the importance and justification for this study.

Methodology This is a primarily descriptive study. The population of the study was the 60 virtually impaired adolescents in a special tertiary education institution in Oyo State, Nigeria; all of who agreed to take part in the study. Knowledge of and attitude to breast cancer as well as the practice of self breast examination by the students was surveyed using an interviewer-administered questionnaire. The instrument was validated by pre-test on some 12 visually impaired students in a senior secondary school in another town in the state; with a Cronbach Alpha value of 0.67. Individual informed consent was obtained from each student before the study on them. Data were analyzed by the use of descriptive and inferential statistics.

Results Majority (90.6%) of the visually impaired female adolescents have average level breast cancer related knowledge. Majority (57.8%) of the students have good attitude towards breast self examination. A higher percentage (56.3%) of them has poor breast self examination related practices. Parental education significantly positively influenced the adolescents' breast cancer related knowledge ($P < 0.05$) but not the BSE related practice and attitude ($P > 0.05$). Parental socioeconomic status significantly positively influenced visually impaired female adolescents' attitude towards breast self-examination ($P < 0.05$) but not the breast cancer related knowledge and the BSE related attitude ($P > 0.05$).

Conclusion Though knowledge of self breast examination of these students would seem to be fair, efforts need to be made to improve on it in the light of these girls already challenging circumstances. Improvement of general education and social economic enhancement in the society will be beneficial in these regards.

PRESENTATION

Asuzu, Chioma

THE IMPORTANCE OF INTEGRATION OF TRADITIONAL HEALERS IN THINKING ABOUT HEALTH CARE IN AFRICA

HOW WE USE LANGUAGE IN DISCUSSING CANCER

Asuzu, Chioma¹

¹University of Ibadan

07:15–08:20

Friday

10 November

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Traditional healers are the means of accessing health care worldwide from the ancient days, but especially now still in Africa. They are found in every locality and very close to the culture of the people. The World Health Organization defined traditional medicine as the sum total of all knowledge and practices, whether explicable or not, used in diagnosis, prevention and elimination of physical, mental, or societal imbalance, and relying exclusively on practical experience and observation handed down from generation to generation, whether verbally or in writing. Medical anthropologists classified traditional medicine and traditional healers as a part of a broader field of study known as ethnomedicine. There are two different types of Traditional healers namely the diviners and herbalists.

Previous studies in our own localities, including those by our own research teams affirmed that many cancer patients visit traditional healers and this may cause delay before they come to the hospital and many of these patients visit the traditional healers for many obvious reasons such as the warmly, very accommodating and understanding attitude of traditional healers towards cancer patients. These healers communicate in such a way as to increased hope in cancer patients. The patient could also afford to pay the traditional healer in installments and they could also be offered accommodation while assessing treatment in the homes of the traditional healers.

Studies have confirmed that the traditional healers will be willing to collaborate with orthodox healers in the care of cancer patients. This will reduce delay, improve early diagnosis and treatment and enhance their quality of life. The duty of the orthodox health practitioners will be to conduct research on how to achieve this collaboration and further refinements of our sciences and arts in the improvement of health services.

POSTER

WELCOME
RECEPTION
AND POSTER
SESSION ONE

16:30–18:00

Tuesday

7 November

Atawodi, Sunday

**P416 | POTENTIAL OF PROSTATE CANCER CHEMOPREVENTION
WITH POLYPHENOLS IN AFRICAN FOODS**

Atawodi, Sunday¹

¹Ahmadu Bello University

Correspondence atawodi_se@yahoo.com

Dietary polyphenols are antioxidants that can scavenge biological free radicals, and chemoprevent diseases, like cancer, with biological oxidation as their main etiological factor. In vitro experiments have demonstrated that certain antioxidant polyphenols have potent activity against prostate cancer cell lines. In this paper, we review our laboratory data vis-à-vis available literature on prostate cancer chemopreventive substances in African foodstuffs. *Syzygium aromaticum*, *Dacryodes edulis* fruit and *Moringa oleifera* contain prostate-active polyphenols like ellagic acid, gallate, methylgallate, catechol, kaempferol, quercetin and their derivatives. In addition, tomatoes which contains the powerful antioxidant and anti-prostate cancer agent, lycopene; cabbage containing indole-3-carbinol; citrus fruits containing pectin; Soursop (*Annona muricata*) containing Annonaceous acetogenins; soyabeans (*Glycine max*) containing isoflavones; chilli pepper containing capsaicin, and green tea containing (-) epigallocatechin gallate (EGCG), (-) epicatechin, (-) epicatechin-3-gallate and (-) epigallocatechin-3-gallate which are widely reported to possess prostate cancer chemopreventive compounds are also grown in many African counties. Thus, the high incidence of prostate cancer among males of African extraction can be dramatically reduced, and the age of onset drastically increased, if the population at risk consumes the right kind of foods in the right proportion, beginning early in life, since prostate cancer has a latency period of about 50 years.

POSTER

WELCOME RECEPTION AND POSTER SESSION ONE

16:30–18:00

Tuesday

7 November

Atawodi, Sunday

P432 | CHEMO-PREVENTIVE EFFECT OF DIETARY GREWIA MOLLIS LEAF INCLUSION ON N-METHYL-N- NITROSOUREA (MNU)-INDUCED COLORECTAL CARCINOGENESIS IN MALE WISTAR RATS

Atawodi, Sunday¹; Bawalla, Iyabo Bolaji¹

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Chemopreventive effect of *Grewia mollis* leaf on MNU-induced colorectal carcinogenesis in wistar rats was investigated at dietary inclusion rates of 0, 2.5, 5 and 10% levels. N-methyl-N-nitrosourea was administered intra-rectally at a dosage of 0.12% 72 hourly for 16 weeks. The carcinoembryonic antigen assay (CEA) showed that the MNU-treated control group had a significantly ($P < 0.05$) increased CEA levels compared to MNU-treated groups fed different levels of *Grewia mollis*, but there was no significant ($P > 0.05$) difference in the CEA levels of the MNU treated groups fed different proportions of *Grewia mollis* leaf and the normal control. The histology of the colon of the MNU control group showed increased glandular extension of goblet cells of the mucosa, but with improved epithelial architecture with increasing levels of the leaf in diet. Thiobarbituric acid reactive substances (TBARS) significantly ($P < 0.05$) increased in the liver and kidney of the MNU control group, while there was a significant ($P < 0.05$) reduction in the activities of and superoxide dismutase (SOD) and catalase (CAT) in the MNU-treated groups fed different levels of dietary *Grewia Mollis* leaf inclusion. These results suggest that the leaf of *Grewia mollis* possess high cancer chemopreventive and antioxidant properties that are able to positively impact on colon carcinogenesis.

POSTER

WELCOME RECEPTION AND POSTER SESSION ONE

16:30 - 18:00

Tuesday
7 November

Atawodi, Sunday

P433 | PREVENTIVE EFFECT OF DIETARY INCLUSION OF SENNA OCCIDENTALIS LINN LEAF ON N-METHYL-N-NITROSOUREA-INDUCED (MNU) COLON CARCINOGENESIS IN WISTAR RATS

Atawodi, Sunday¹; Jimoh, Rahmat Kemi¹

¹Ahmadu Bello University

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The protective effect of dietary leaf inclusion of *Senna occidentalis* against MNU-induced colon carcinogenesis was assessed using serum carcinoembryonic antigen (CEA) level, alterations in endogenous antioxidants (superoxide dismutase and catalase activity), levels of lipid peroxidation and histology of the liver, kidney and colon. There were significant histopathological changes in the organs of the MNU control with significant improvement with increase in the levels of dietary *Senna occidentalis* leaf inclusion. The CEA level of the MNU control group showed a significant ($p < .05$) increase compared to those MNU treated groups fed different levels of the experimental diets. Thiobarbituric acid reactive substances (TBARS) in the liver and kidney and colon of the MNU groups fed *S. occidentalis* included diets significantly ($p < .05$) decreased compared to the MNU control group. However, the activities of superoxide dismutase and catalase in the liver, kidney and colon of the MNU treated groups fed different levels of *Senna occidentalis* leaf included diets significantly ($p < 0.05$) increased compared to the MNU control group. These results suggest that *Senna occidentalis* leaf has chemopreventive effect in colon carcinogenesis, due in part, to its rich antioxidant polyphenols content.

POSTER

Atieno, Mackuline

P335 | IMPROVING ACCESS TO CANCER TREATMENT AND PAIN RELIEF IN AFRICA: EXPERIENCES FROM THE PAIN FREE HOSPITAL INITIATIVE (PFHI) AT THE UGANDA CANCER INSTITUTE

Atieno, Mackuline¹; Nakaganda, Annet²; Kemigisha, Misk²; Kiyange, Fatia¹; Luyirika, Emmanuel¹; O'Brien, Meg³

¹African Palliative Care Association; ²Uganda Cancer Institute; ³American Cancer Society

POSTER

SESSION

TWO

16:30–18:00

Thursday

9 November

Correspondence mackuline.atieno@gmail.com

Background Cancer is rapidly becoming a public health crisis in low-income and middle-income countries. Pain is one of the key symptoms in cancer patients. Unbearable pain can contribute to increased mortality from cancer and unnecessary suffering that diminishes the quality of life for people living with cancer and their families.

Problem Pain relief is central to the effective management of cancer patients. Pain assessment and management should therefore be part of routine for any oncology center/unit. However, there is a general lack of knowledge and skills among health care workers to manage pain.

Objective The intervention aimed at improving the capacity of staff to better assess and manage pain in cancer patients. This paper presents a successful intervention where the Uganda Cancer Institute (UCI) has improved pain assessment and management in their patients.

Methodology Over a period of 14 months (February 2016 to March 2017), the African palliative Care Association, in collaboration with the American Cancer Society (ACS) supported the implementation of the Pain-Free Hospital Initiative (PFHI) at UCI. This encompassed facility led training of hospital staff through 13 sessions on pain management, a workshop for doctors and pharmacist on pain and daily scoring of patient pain assessment and management. The trained staff scored patient pain scores (both for self-reported and observational for nonverbal children). Pain was monitored once a day every day for all admitted cancer inpatients across all disease stages and managed accordingly until discharge or death.

Results through the PFHI, 156 staff (doctors, nurses and pharmacists were trained and more than 10,000 patient assessments done for over 30 weeks). UCI has steadily reduced average inpatient pain scores (both adults and children) steadily in their four inpatient wards. For instance, over period of 11 weeks, the average pain scores for the four wards reduced from 3.6 to 0.9 out of 10. The staff also developed better interaction with patients and others involved in development of online training videos from gained knowledge and skills.

Conclusion through facility led capacity building and pain assessment initiatives, pain management is feasible, even in cancer centers with high patient numbers and provides relief to patients.

Recommendations for research Documentation of impact of physical pain management of cancer patients on psycho-social aspects; and how to monitor pain management for outpatient cancer patients.

POSTER

WELCOME
RECEPTION
AND POSTER
SESSION ONE

16:30–18:00

Tuesday

7 November

Awolude, Olutosin

P167 | IMPROVING COMMUNITY HEALTH WORKERS' KNOWLEDGE AND PRACTICE SKILLS FOR CERVICAL CANCER SCREENING IN NIGERIA: AN ESSENTIAL BRIDGE TO REDUCE ITS CERVICAL CANCER BURDEN

Awolude, Olutosin¹; Oyerinde, Sunday O.²; Payne, Bunmi²; Afolabi, Yetunde¹
¹University of Ibadan; ²University College Hospital

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Introduction Universal coverage of cervical cancer screening remains elusive in most low and middle income countries (LMICs), home to greatest burden of this preventable disease. There are challenges with implementation of cytology-based screening strategy in these countries. Also, there are shortage of the needed health workforce to implement the user-friendly, low-cost and equally effective methods like Visual Inspection after application of Acetic acid (VIA). However, the implementation of HIV programs in sub-Saharan Africa has introduced the innovation of task shifting using the Community extension workers (CHEWs) and Community Health Officers (CHOs) to complement the workforce especially at Primary Health Care level with good outcome both in coverage and quality of service delivery. Hence, this study to leverage on this novel strategy.

Methodology We piloted improving knowledge and practice skills of CHEWs and CHOs in a rural local government area of Oyo state, Nigeria as a novel community level interventional strategy. This was through training, technical and infrastructural supports and participatory supervisions for health care workers in all the eleven PHCs in the LGA to screen for cervical cancer using VIA method and link VIA positive cases to the general hospital for treatment.

Results A total of 51 health care workers, which include physicians, nurses, CHEWs/CHOs, were trained during the study. Five of the eleven PHCs and the general hospital were provided with materials and consumables to provide cervical cancer screening services. Following the training, improved from an average of 50.5% pre-training to 88.8% immediate post training. Between January and December 2016, 1346 eligible women in the community were screened for cervical pre-cancer lesion of which 1202 (89.3%) were screened in the 5 PHCs. Of the 44 screened VIA positives by the CHEWs and CHOs, 42 (95.5%) agreed with the supervisory team review while 18 of the 19 (94.7%) screened by the nurses agreed with the supervisory team review ($p= 0.01$). There were 3 cases of incidental invasive cervical cancer diagnosed during the screening exercise and were linked with the tertiary hospital for follow-up treatment.

Conclusion This pilot project showed that the ability of the CHEWs/CHOs to identify cervical dysplasia were comparable with that of the nurses. It then means that with appropriate competency training, good mentoring and supervision, CHEWs/CHOs are good workforce for to achieve universal coverage of cervical cancer screening. However, this study needs to be expanded to establish its wider feasibility.

POSTER

Awuah, Baffour

P066 | POPULATION-BASED CANCER REGISTRY: FOUR YEAR REPORT OF KUMASI CANCER REGISTRY IN ASHANTI REGION OF GHANA

**WELCOME
RECEPTION
AND POSTER
SESSION ONE**

16:30–18:00

Tuesday

7 November

Awuah, Baffour¹; Laryea, Dennis Odai¹; Awittor, Fred Kwame¹

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Introduction The Kumasi cancer registry, the first population- based cancer registry in Ghana, a member of African cancer registration Network started as department based registry and progressed through hospital based registry and in the year 2012 admitted as population based registry by African Cancer Registration Network, covering a population of over 2.4 million people in kumasi Metropolitan area of the Ashanti region.

Objective This report seeks to present the 2012–2015 full report of the registry and the challenges of the registry.

Results A total of 1827 cases were recorded in four years of which the male female distribution was 674 and 1146 persons respectively. The top 5 common cancers (2012–2015) were breast (499), cervix (265), liver (197), prostate (137) and ovary (83). The estimated incidence, age-standard rate for the four year period was 23.4/100,000 in males and 34.2/100,000 in females. The most common cancer in males and females were liver and breast respectively. The major challenges of the registry staffing, funding and resistance of some health facilities to release data.

Conclusion This report has shown the profile of cancers in Kumasi, in the center of Ghana. Medium to long term plan is to establish additional population based registry in the northern and southern parts of Ghana in order to have a National cancer registry.

POSTER

POSTER SESSION TWO

16:30–18:00
Thursday
9 November

Ba, Oumar

P201 | RÉSULTATS DE L'ENQUÊTE NATIONALE SUR LE TABAGISME DES ADULTES AU SENEGAL: GLOBAL ADULTS TOBACCO SURVEY AU SENEGAL(GATS)

Ba, Oumar¹; Cissokho, Awa²; Dieme, Jean Louis¹; Ndiaye, Mamadou³;
Mbengue, Mouhamadou¹

¹Hopital General Grand Yoff; ²Agence Nationale de Statistique et
Demographie; ³Hopital General Grand Yoff

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Introduction L'enquête mondiale sur le tabagisme chez l'adulte (GATS) est un standard mondial de surveillance systématique de la consommation de tabac par les adultes et de suivi d'indicateurs clés de la lutte antitabac.

Méthodes La GATS utilise une méthodologie mondiale standardisée. Elle collecte des informations sur l'historique des répondants, la consommation de tabac (à fumer ou sans fumée), l'arrêt du tabac, le tabagisme passif, le contexte économique, les médias, ainsi que les connaissances, les perceptions et les attitudes envers le tabagisme. Au Sénégal, la GATS a été conduite en 2015 en tant qu'enquête sur les ménages auprès des personnes âgées de 15 ans et plus par l'Agence nationale de la statistique et de la démographie (ANSD), sous la coordination du ministère de la Santé publique. Un modèle d'échantillon stratifié à plusieurs degrés utilisé. Un total de 4 514 ménages ont été interrogés et un individu âgé de 15 ans et plus a été choisi au hasard dans chaque ménage sélectionné pour réaliser l'enquête. Les données de l'enquête ont été recueillies grâce à l'usage d'un appareil portatif.

Résultats Un total de 4 347 entretiens individuels ont été réalisés avec un pourcentage de réponse total de 97,0 %. Consommation de tabac : un demi-million d'adultes sénégalais utilisent actuellement les produits du tabac avec 11,0 % d'hommes et 1,2 % de femmes. Le tabac à fumer est la principale forme d'utilisation du tabac. Il n'y a pas de différence significative dans la consommation de tabac à fumer entre le milieu urbain (5,8 %) et le milieu rural (5,0 %). Sevrage : 8 fumeurs actuels sur 10 ont envisagé d'arrêter de fumer ou y ont pensé. Ils sont plus nombreux (66,2 %) en milieu rural. Dépenses liées au tabac : la dépense mensuelle en cigarettes par fumeur est de 6 716 à 10 000 FCA. Tabagisme passif : un demi-million (30,4 %) de travailleurs ont été exposés au tabagisme passif sur leur lieu de travail et 1,642 millions (21,6 %) au domicile. Connaissances, attitudes et perceptions : 94 % des adultes pensent que le tabagisme peut entraîner des maladies. Média : 4 adultes sur 10 ont vu de la publicité en faveur du tabac dans les médias.

Conclusion Le tabagisme est un problème de santé public ; l'exploitation des résultats de cette enquête nationale aidera à la mise en œuvre de la loi antitabac adoptée récemment au Sénégal.

POSTER

Baine, Fiona

P248 | THE GENETICS OF INHERITED BREAST CANCER IN BLACK SOUTH AFRICAN WOMEN

**POSTER
SESSION**

TWO

16:30–18:00

Thursday

9 November

Baine, Fiona¹; Krause, Amanda^{1,2}

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In South Africa, as elsewhere in the world, breast cancer is the most commonly diagnosed malignancy in women. The National Cancer Registry recorded 8203 cases in 2012, and estimates the lifetime risk of developing breast cancer at 1 in 26 for South African women.

Mutations in breast cancer susceptibility genes are expected to significantly increase this risk. Limited data suggest that early-onset and aggressive tumours in African women are not explained adequately by mutations in the two main genes, BRCA1 and BRCA2. Many other genes are now known to be associated with the development of breast cancer; however, African populations remain understudied. The lack of data makes it challenging to offer diagnostic services and personalised risk assessment to patients and their families.

The Division of Human Genetics at the University of the Witwatersrand (WITS)/National Health Laboratory Service (NHLS) has for many years, collaborated with the Johannesburg breast cancer clinics at Chris Hani Baragwanath Hospital, Charlotte Maxeke Johannesburg Academic Hospital and Helen Joseph Hospital. Patients from the clinics have been assessed, family histories and risk factors documented and histology studied. The current standard risk-assessment tools appear to be less effective in identifying high-risk families, and molecular genetic screening is vital to delineate individuals and families at increased risk.

To-date, genetic studies have been performed on approximately 150 high-risk patients diagnosed with breast cancer at an early age (under 50 years). One sequencing study of BRCA1 and BRCA2 in 33 black patients reported a mutation frequency of 10%, and five novel variants of uncertain significance. In a larger sample of 108 women (85 of whom were black), 13 patients were found to have deleterious mutations in BRCA1 and BRCA2, three of which were novel mutations in black patients. Six variants of uncertain significance were also identified, all in black patients.

A recent pilot study used targeted next-generation sequencing (NGS) to screen 18 women for 26 different breast cancer susceptibility genes. The results reveal two mutations in the ATM and RAD50 genes, and several likely pathogenic variants in other genes requiring further investigation.

A comprehensive screen is currently underway to assess the spectrum and frequency of mutations present in a large cohort in the South African population using next-generation sequencing technologies (NGS). The results will provide more definitive data on the spectrum of pathogenic mutations and facilitate the strategic development of cost-effective assays which inform the diagnosis and treatment of patients.

POSTER

WELCOME RECEPTION AND POSTER SESSION ONE

16:30–18:00

Tuesday
7 November

Barry, Donna

P117 | EXPANDING AN INTERACTIVE CANCER PROJECT MAP

Barry, Donna¹; Andre, Billy¹; Craycroft, Jane^{1,2}; Sharara, Nour^{1,2}; Bhatt, Ami^{1,3}; Huang, Franklin^{1,2}

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Objective The global cancer burden is estimated to rise to 21.7 million new cases by the year 2030, with 1.1 million of those in Africa. As the burden increases, cancer research and control efforts continue to expand globally, an interactive platform centralizing and highlighting cancer research, projects, events, and stakeholders is imperative to streamline cancer control and promote partnership. The GO Map (www.thegomap.org) is an online repository geared towards networking, educating, and facilitating collaboration while also showcasing cancer control efforts in a visually appealing and user friendly manner.

Methods The GO Map was designed with 4 goals: allow individuals to 1) share cancer related events and projects; 2) search for specific people, projects, and events in a designated country or by specific cancer type or topic; 3) connect project leads with similar interests or in specific countries; and 4) view epidemiological heat maps highlighting cancer burden and project, stakeholder, and event locations. Publicly available data was curated from U.S. federal government funded research institutions, professional organizations such as AORTIC (African Organisation For Research and Training in Cancer), ASCO (American Society for Clinical Oncology) and UICC (Union for International Cancer Control), institutions such as MGH (Massachusetts General Hospital) and Stanford University, and individual researchers and project leads.

Results Since The GO Map's launch in 2015, the number of mapped projects has increased from 750 to 1,861. Of these projects, only 6.8% are based in Africa with majority of projects falling in high income regions. Between March 29th and April 28th 2017, the map was accessed from 54 different countries, of this figure 12 were from African nations. During this time period the map also saw an 85% increase in new users from the previous month.

Conclusions While the number of projects available on the map have increased 2.5 fold in 2 years, the documentation of cancer projects and events needs to be amplified. Efforts to increase user traffic and participation will continue to grow The GO Map as well as provide more opportunity for collaboration.

PRESENTATION

Barton-Burke, Margaret

GLOBAL COLLABORATION TO BUILD CAPACITY AND ADVANCE RESEARCH IN KENYA

**BIG CAT
AWARDEES**
11:00–12:30
Wednesday
8 November

Barton-Burke, Margaret¹; Kassaman, Dinah²; Mushani, Tayreez²; Brownie, Sharon²
¹Memorial Sloan Kettering Cancer Center; ²Aga Khan University School of Nursing and Midwifery

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Background The burden of cancer is increasing in developing countries with cancer being the third leading cause of death in Kenya. The Kenyan government has publicly acknowledged the cancer burden and has committed resources to address cancer care, however, there is a paucity of research on the needs of Kenyan patients. Also there is a lack of oncology nursing and nursing research expertise in the country. This presentation will describe how a group of nurse academics from two countries collaborated to develop a successfully funded research grant that explores the health literacy and educational needs of women diagnosed with breast and cervical cancer.

Purpose A nursing research group was formed consisting of nurse academics from Kenya - a doctorally-prepared Dean of a nursing program and 2 master-prepared novice researchers, and from the U.S. there is a doctorally-prepared mentor. The PI is a Kenyan, novice oncology faculty mentored by an expert oncology expatriate faculty member and their Dean plus an oncology nurse researcher from the United States.

Method This presentation highlights the problems, pitfalls, and successes from the perspective of the novice researcher (PI) and the doctorally-prepared mentor. Nurse faculty members were charged with developing a grant proposal. The Request for Proposals fit the study environment of Nairobi, Kenya. The research team held one face-to-face meeting and developed the premise of the study: perceived low levels of health literacy in women with breast and cervical cancer. Grant development proceeded using email and Skype. This presentation will identify the type and kind of needs of a novice researcher and the work required to mentor.

Results The Cancer-related Health Literacy Status, Information and Education Needs of Patients Diagnosed with Cancer of the Cervix and Breast in Kenya was funded by the National Institutes of Health BIG CAT mechanism. It was approved by the Aga Khan University Research Ethics Committee and researchers have commenced to collect data.

Conclusion This is the first step in research capacity building at Aga Khan University in Nairobi, Kenya. There is a need to build nursing research infrastructure in Kenya. This presentation focuses on structures and processes necessary to submit a successful grant application in a low resource country. We discuss overcoming barriers to conducting research including lack of expertise in content and methodology, time zone differences, and limited resources. International collaboration and mentorship activities are required to advance research in low resource countries.

POSTER

Basemera, Bernadette

P336 | WHAT INFLUENCED SURVIVAL OF CANCER PATIENTS RECEIVING PC AT HOSPICE AFRICA UGANDA

**POSTER
SESSION**

TWO

16:30–18:00

Thursday

9 November

Basemera, Bernadette¹; Merriman, Anne¹

¹Hospice Africa Uganda

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Background Palliative Care has been very instrumental in improving the quality of life of people with life threatening illnesses and their families. Even though curative treatment has been available in Uganda for cancer patients, availability and accessibility is still a big hindrance to many suffering with uncontrolled symptoms due to economic and cultural beliefs. Hospice Africa Uganda (HAU) has been providing palliative care services in Uganda since 1993. Kampala site has cared for 1842 patients with cancer. HAU undertook a survey looking at impact of palliative care on survival rate of cancer patients receiving care from 1995 to 2010.

Information looked at included the electronically documented details of cancer patients, who have survived 10 years or more but are still on our active programme between October 2016 and March 2017. It does not capture those survivors who were discharged from the programme during these years.

Objective To determine any common denominators which were present among the survivors, on diagnosis, that may be indicators of survival during the early stages of cancer.

Methodology Electronically documented data with details of surviving cancer patients, still active on HAU programme, between October 2016 and March 2017.

Results/achievements to date The study included looking at 24 files of active cancer patients on programme years covered 1995–2010 and have been coming for regular review from October 2016 to March 2017. The files were selected from the electronic database at HAU Kampala through identifying survivors still on our programme. Different parameters looked at included: type of cancer, physical, social, psychological and spiritual aspects. Despite being diagnosed with cancer at different stages, these patients are still receiving holistic care from HAU Kampala and their quality of lives has been good. This may support the hypothesis that palliative care not only increases quality of life but also long term survival rate.

Conclusion This is a pilot study which may support a longer or multicenter study in the African situation. Short term survival has been found to improve through a study in USA and published in the New England of Medicine in patients with small cell cancer of the lung, but long term survival does not seem to have been documented previously.

POSTER

WELCOME RECEPTION AND POSTER SESSION ONE

16:30–18:00

Tuesday

7 November

Bassey, Iya Eze

P003 | FERTILITY HORMONES AND VITAMIN E IN ACTIVE AND PASSIVE ADULT MALE SMOKERS IN SOUTH SOUTH NIGERIA

Bassey, Iya Eze¹; Akpan, Uwem Okon¹; Esiere, Kaiso Umo Sunday¹; Akpan, Raphael Michael¹; Udoh, Alphonsus Ekpe¹

¹University of Calabar

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Background Smoking is an extremely lethal act and is associated with many illnesses. Lately, major concerns that passive smokers face the same health risks if not higher as active smokers have been raised. Some studies have shown that active smoking is associated with low levels of vitamins and testosterone. Are these facts also valid in passive smokers?

Objectives To estimate the levels of cotinine, testosterone, follicle stimulating (FSH) and Luteinizing Hormone (LH), prolactin and vitamin E and establish a relationship between them in male active and passive smokers.

Methods Serum levels of cotinine, testosterone, FSH, LH, prolactin and vitamin E were estimated in 60 cigarette smokers, 60 passive smokers and 60 non-smokers recruited from Calabar metropolis. They were aged between 18 and 45 years. The hormones were assayed using ELISA and Vitamin E using HPLC. Sociodemographic and anthropometric indices were obtained and data analyzed using PAWstatistic 18.

Results Cotinine levels were significantly ($p > 0.05$) higher in active smokers than in passive smokers and controls. Vitamin E and testosterone was significantly lower in active ($p < 0.05$) and passive smokers ($p < 0.05$) when compared to non-smokers. The FSH of the active smokers were significantly higher ($p = 0.034$) than those of the controls while the passive smokers had the highest LH values ($p = 0.0001$). However, there were no significant variations in the prolactin levels among the three groups.

Conclusion Both passive and active smoking depletes vitamins E and lowers testosterone levels. This may be a contributing factor to infertility both groups of smokers.

POSTER

WELCOME
RECEPTION
AND POSTER
SESSION ONE

16:30–18:00

Tuesday
7 November

Bassey, Iya Eze

P168 | PREVALENCE OF METABOLIC SYNDROME AND PATTERN OF METABOLIC DISTURBANCES IN NIGERIAN MEN WITH PROSTATE CANCER

Bassey, Iya Eze¹; Udoh, Alphonsus Ekpe¹; Usoro, Chinyere Adanna Opara¹
¹University of Calabar

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The prevalence and pattern of metabolic disturbances in men with prostate cancer varies in different populations. Studies on indigenous African populations on this subject matter are scarce hence the need for this study. The design of the study was cross sectional. Metabolic syndrome (MS) was assessed using the World Health Organization (WHO), National Cholesterol Education Program-Adult Treatment Panel (NCEP-ATP III) and International Diabetes Federation (IDF) criteria in 153 prostate cancer patients and 80 controls. The prostate cancer patients were sub-grouped into treatment-naive prostate cancer cases and those on androgen deprivation therapy. The prevalence of MS in Prostate cancer and controls, using the WHO classifications, were 11.8% and 18.8% respectively. Using the NCEP-ATP criteria, they were 20.9% and 23.8% respectively. Using the IDF criteria it was 18.3% and 18.8% respectively. The prevalence of MS in prostate cancer were similar to that of the control group ($p>0.05$) using any of the criteria. Central obesity was observed to be the most prevalent component in prostate cancer patients and controls. The prostate cancer patients had significantly higher percentage of those with low HDL-cholesterol levels compared to controls. The prevalence of metabolic syndrome (NCEP-ATP III) in the prostate cancer treated group was significantly higher ($p=0.016$) when compared to treatment-naïve cases; there was a two-fold increase in the prevalence of metabolic syndrome using the NCEP-ATP III and IDF criteria. This was not observed using the WHO criteria. The highest prevalence was observed in those treated for up to one year. Androgen deprivation therapy in prostate cancer is associated with higher prevalence of metabolic syndrome.

PRESENTATION

GENETICS/
EPIGENETICS
& OTHER
ABSTRACTS

13:30–14:30

Friday

10 November

Bauknecht, Thomas

SEARCH FOR PARTNERSHIP PROJECTS IN BIOBANKING AND GYNAECOLOGIC ONCOLOGY BETWEEN NOGGO/PARSGO (GERMANY) AND AORTIC (AFRICA) TRIALIST GROUPS

Bauknecht, Thomas¹; Nasser, Sara²; Kaufmann, Andreas M¹; Hauptmann, Steffen³; Sehouli, Jalid¹

¹NOGGO – Charite; ²Queen Charlotte’s and Chelsea Hospital Imperial College NHS Trust; ³Maastricht University Medical Center

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The German gynecologic Oncology group NOGGO (Nordic German Gynecologic Oncologic Group), the PARSGO (Pan Arabian Research Society Gynecologic Oncology) and cooperation partners (GCIG) perform international studies, molecular oncology research, vaccination studies and bio banking in gynecologic oncology. In the past a tumor banking group (TOC; EUTROC) was established to perform translational research in gynecologic oncology together with clinical research to find new predictive and prognostic factors. The combination with clinical studies with targeted compounds new aims in personalized oncology are evaluated. Important questions are: the personal and population based genetic background and treatment outcomes. The collection of increasing number of well defined tumor samples together with clinical data is one of the tools to get a better understanding in tumor biology. Cooperations with IACR, BCNet and other organization are underway. Our group is interested to get a closer collaboration with tumor banking facilities coming from African Sub-Sahara area. The presentation will provide sophisticated information about our working group and discuss future collaborations with AORTIC and African tumor banking facilities.

POSTER

WELCOME
RECEPTION
AND POSTER
SESSION ONE
16:30–18:00
Tuesday
7 November

Bazzett-Matabele, Lisa

P080 | NEOADJUVANT CHEMOTHERAPY AND RADICAL SURGERY IN THE TREATMENT OF LOCALLY ADVANCED CERVICAL CANCER IN RWANDA

Bazzett-Matabele, Lisa^{1,2}; Ghebre, Rahel^{2,3}; Kigonya, Catherine⁴;
Butonzi, John⁴; Ntasumbumuyange, Diomedes^{2,5}; Mpanumusingo, Egide⁴;
Shyirambere, Cyrien⁴

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Minnesota Medical Center; ⁴Butaro Cancer Center of Excellence;

⁵Kigali University Teaching Hospital

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Objectives Cervical cancer is the most common cause of cancer death in women in Rwanda. A majority of cervical cancer cases in Rwanda are candidates only for chemo-radiation therapy due to advanced stage at presentation. The closest radiation facility available to the public sector of Rwanda, located in Kampala, Uganda, was permanently lost in early 2016. The alternative arrangement in Nairobi, Kenya is able to accommodate fewer patients due to distance and cost. This left many patients without treatment options. As there are currently US trained gynecologic oncologists (GO) available at Kigali University Teaching Hospital through the Human Resources for Health (HRH) program, a protocol was developed for neoadjuvant chemotherapy (NACT) and radical hysterectomy for locally advanced (stage IB2-IIA) cervical cancers. The aim of this protocol was to decrease the number of early stage cervical cancer patients requiring radiation, reserving this treatment for later stage disease, and therefore potentially increasing the overall number of patients treatable for cure.

Methods All patients were initially staged by a GO and those thought to be stage IB2 or potentially operable IIA were referred to Butaro Cancer Center of Excellence for 3 cycles of neoadjuvant carboplatin (AUC6) and paclitaxel (175mg/m²). Patients were assessed post NACT by a GO for operability and triaged either to surgery or chemo-radiation therapy.

Results Between May 2016 and February 2017, twenty-seven patients underwent NACT followed by radical hysterectomy. At the time of surgery, 5 patients (18%) had an intra-operative diagnosis of more advanced disease and an additional 4 patients (15%) had final pathologic confirmation of a more advanced stage of disease. A majority of those with more advanced stages (n=5) were initially clinical stage IIA. The remaining 18 patients (67%) had curative surgery confirmed by final pathology.

Conclusions In low-resource countries with limited or no radiation available for treatment of cervical cancer, other options for cure of locally advanced disease are possible. Surgeons able to perform appropriate surgery are critical. Many challenges remain in the approach of neoadjuvant chemotherapy, especially in choosing appropriate candidates. Based on early surgical outcomes it is believed that pretreatment computer tomography (CT) would help to triage patients more accurately. However, cost and access to this additional evaluation may potentially lead to further treatment delays and remain significant barriers in Rwanda.

PRESENTATION

Bendahhou, Karima

LE CANCER DANS L'AFRIQUE DU NORD: EXEMPLE DU MAROC

Bendahhou, Karima¹

¹Casablanca Cancer Registry

**CANCER
REGISTRIES**

13:30–14:30

Tuesday

7 November

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Le cancer est un problème majeur de santé publique à la fois dans les pays développés et dans les pays en développement. Les pays à revenu faible se trouvent confrontés à une incidence qui continue d'augmenter et une mortalité par cancer qui n'est pas contrôlée par manque de moyens et de politique de santé efficace.

Méthodes Le registre des cancers du Grand Casablanca est un registre de population couvrant une population qui dépasse quatre millions d'habitants, soit 12 % de la population marocaine. L'enregistrement des cas se fait à partir de toutes les sources potentielles pouvant accueillir des cas de cancers incluant toutes les structures sanitaires de diagnostic ou de prise en charge dans le secteur privé ou public. Dans ce travail nous présentons l'incidence du cancer selon l'enregistrement effectué pour la période s'étalant entre 2008 et 2012 tout en les confrontant avec ceux des pays voisins selon les estimations de la base de données Globocan.

Résultats L'incidence globale (standardisée sur la population mondiale ASR pour la période 2008-2012) est de 137,3 pour cent mille. Chez les femmes, elle est de 143,1 pour cent mille contre 138,5 pour cent mille chez les hommes. Le cancer du sein est le chef de file des localisations les plus fréquentes chez les femmes suivi du cancer col de l'utérus, de la thyroïde, colorectal et de l'ovaire. Chez les hommes la localisation la plus fréquente est le poumon suivi par la prostate, le colorectal, la vessie et le lymphome non hodgkinien. Cet ordre de fréquence, des principales localisations du cancer, n'est pas toujours le même pour les autres pays de l'Afrique du nord malgré la similitude notée dans l'environnement et le mode de vie. Ainsi le Maroc enregistre une incidence élevée du cancer de col de l'utérus chez les femmes et du cancer de la prostate chez les hommes comparativement aux pays voisins, par contre le taux d'incidence du cancer colorectal dans notre pays reste relativement faible.

Conclusion Le cancer du col de l'utérus reste un problème majeur de santé publique au Maroc. Il constitue l'une des priorités de la politique de santé du pays. Des efforts ont été déployés dans la lutte de ce cancer en terme de prévention et de dépistage.

PRESENTATION

Bey, Pierre

THE FRENCH-AFRICAN PAEDIATRIC ONCOLOGY GROUP 2025 PROJECT FROM SUB-SAHARAN FRANCOPHONE COUNTRIES

PAEDIATRIC ONCOLOGY

14:40–16:00

Friday

10 November

Bey, Pierre¹; HARIF, Mhamed²

¹GFAOP; ²GFAOP

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Since its creation in 2000 by Jean Lemerle and African pediatricians, the Franco-African Group of Pediatric Oncology (GFAOP) supported the creation up to now of 11 pediatric oncology units in 11 francophone sub-Saharan African countries through the training of pediatricians and nurses in Paris (France) and Rabat (Morocco), through clinical research (common protocols for 5 highly curable tumors: Burkitt's lymphoma, nephroblastoma, retinoblastoma, Hodgkin's disease and acute lymphoblastic leukemia) and financial support including provision of anti-cancer drugs.

GFAOP provided evidence that 50–80% of the children included in these protocols (800 children included in 2016) were treated on site in Africa and definitively cured. Despite these encouraging results, we estimate that by 2016, less than 15% of the at least 10,000 children having a cancer this year in sub-Saharan French countries, had an access to one of the 11 units. About 40% of these children had advanced tumors not curable with the available means. GFAOP has drawn up a "2025 plan" with the ambitious goal that 3,000 children with a curable tumor would be treated in 2020 and 5,000 in 2025 in the units supported by GFAOP. For this purpose, our aims are to:

- increase the number of countries with a unit from 11 to 17 in 2025
- help creation of other units or satellite centers in countries with already one unit, from 11 to about 30 in 2025
- improve training of physicians (pathologists, surgeons, anesthesiologists, radiation oncologists, radiologists) to multidisciplinary approach, training of nurses, sensitization of health actors and population to early diagnosis in each country
- develop twinning between African units and French onco-pediatric services
- strengthen clinical research and evaluation by registration of all cases received by the units and with input of clinical research assistants
- dynamize parents associations with support to the creation of a parents' home close to each unit to reduce abandonment of treatment and loss of follow-up after treatment.

For these actions, we plan to:

- create a training platform linked to the University of Dakar
- contract with the Ministries of Health of each country and increase lobbying with authorities to reduce the financial burden of families
- find the necessary financial means beyond international foundations and institutional organizations which already support the project.

This 2025 project started in 2017 and progress of actions will be presented in Kigali.

POSTER

WELCOME RECEPTION AND POSTER SESSION ONE

16:30–18:00

Tuesday
7 November

Bitty-Anderson, Alexandra

P142 | BARRIERS TO CERVICAL CANCER SCREENING AMONG WOMEN IN ABIDJAN, COTE-D'IVOIRE: A QUALITATIVE STUDY

Bitty-Anderson, Alexandra¹; Simo, Willy^{2,3,4}; Tchounga, Boris^{1,5}; Boni, Simon^{1,2}; Comoe, Jean-Claude^{2,6}; Adoubi, Innocent^{2,6}

¹Research Center PAC-CI; ²National Cancer Control Program; ³London School of Hygiene and Tropical Medicine; ⁴Mbingo Baptist Hospital / Cameroon Baptist Convention Health Board; ⁵University of Bordeaux; ⁶University Hospital Treichville

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Background and Objectives Cervical cancer is the second most common cancer and the leading cause of death due to cancer among women in Cote-d'Ivoire. Although the national policy for the prevention of cervical cancer has been introduced more than 10 years ago, the coverage of the target population is still sub-optimal. The aim of this study was to assess barriers to cervical cancer screening among women attending cervical cancer screening units in Abidjan, Cote-d'Ivoire.

Methods A qualitative study was completed from June to July 2016 in the economic capital of Cote-d'Ivoire, Abidjan. Women in one university hospital, one HIV clinic and three general hospitals of the most populous areas of Abidjan were requested to participate in focus groups. A focus group guide was developed based on previous similar studies on cervical cancer. Subjects discussed included knowledge of cervical cancer, with a focus on barriers to cervical cancer screening and prevention strategies. Results were analyzed using content analysis.

Results A total of 38 women aged 21 to 57 participated in the focus groups. Approximately 44.7% of women had previously been screened for cervical cancer and 18% were HIV positive. One theme that emerged from the analysis is the severe lack of knowledge of women on the causes and methods of prevention of cervical cancer. Women had a vague, sometimes erroneous ideas of the causes and methods of prevention of cervical cancer (e.g., "skin lightening can cause cervical cancer"). This lack of knowledge translated into an important barrier to screening. Fear was also an impediment to screening, especially among women living with HIV and was threefold: fear of being diagnosed with cancer, fear of the cost of treatment after diagnosis, and fear of the psychological burden of an additional chronic condition added to their current ones. Strategies suggested included more information on the disease and the inclusion of men in prevention messages. Women were interested in sharing their knowledge and in vaccinating their young girls if given the opportunity.

Discussion This qualitative study revealed that the main barriers to cervical cancer screening among women were the lack of knowledge and fear of screening. Cancer prevention activities should prioritize reaching women through appropriate interventions providing them with the tools needed for the next stage of regular cervical cancer screening. There is a need for an additional effort to reinforce the idea that screening for cervical cancer could save lives.

POSTER

POSTER SESSION TWO

16:30–18:00
Thursday
9 November

Blanchard, Charmaine

**P337 | CAREGIVER BURDEN IN CARING FOR PATIENTS WITH
ADVANCED CANCER FROM CHRIS HANI BARAGWANATH ACADEMIC
HOSPITAL IN SOWETO, SOUTH AFRICA**

Blanchard, Charmaine^{1,2}; Ratshikana-Moloko, Mpho^{1,2}; Mmoledi, Keletso^{1,2};
Tsitsi, Merika^{1,2}; Sobekwa, Mfanelo²; Prigerson, Holly³

¹University of the Witwatersrand; ²Chris Hani Baragwanath Academic Hospital;

³Weill Cornell Medicine

Correspondence charmaine.blanchard@wits.ac.za

Introduction In Africa, with the rising incidence of cancer which is usually diagnosed late, and with strained healthcare systems, many patients with advanced disease are sent home to die. Family caregivers then bear the burden of care for these patients. Palliative care is often the only option available. Palliative care addresses pain, other physical symptoms, psychosocial and spiritual needs of the patient and the family. South Africa (SA) follows WHO guidelines in advocating palliative care initiation at diagnosis, but has very few multidisciplinary palliative care teams. In addition to assessing the needs of the patients in terminal stages of cancer, this study assessed the impact of the disease on their primary caregivers.

Methodology 190 patients at Chris Hani Baragwanath Academic Hospital diagnosed with epithelial cancers, with an estimated six-month survival were recruited into the study. The patient and a primary caregiver were interviewed at baseline. Palliative care needs were assessed regularly using a validated assessment tool. A post mortem interview was conducted with 100 primary caregivers. Questionnaires assessed physical, psychosocial and spiritual needs of the patients as well as coping of the caregivers.

Results Of the patients: 64% were younger than 60 years, 82% were unemployed and only 21% had completed high school education; 40% owned their home and 17% owned a car; 41% were married or in a relationship. Of the caregivers: 32% were either a spouse or partner, 35% were the patient's offspring. Most households had access to electricity (96%) and to clean water (91%), while 61% had an indoor flush toilet; and most (95%) had mobile phones. While 55% of caregivers experienced challenges in caring for the patient and 60% experienced varying degrees of helplessness, 94% felt that they were able to make the patient comfortable. 20% of caregivers experienced communication with the patient as the main challenge, with 86% of patients being asleep/sedated and 71% having difficulty with communication. A further 55% of challenges related to lack of resources to physically care for the patient, difficulty in communicating with health providers and emotional suffering in dealing with a dying relative.

Conclusion Patient care in the home is often assumed as most appropriate for palliative care. However, this places an enormous burden on the families, especially those with severe economic constraints. It is vital in planning a palliative care program to consider these burdens and to provide adequate support to families caring for patients in the home.

PRESENTATION

Blanchard, Charmaine

SPIRITUAL NEED IN PATIENTS WITH LATE STAGE CANCER AT CHRIS HANI BARAGWANATH ACADEMIC HOSPITAL IN SOWETO, SOUTH AFRICA

MIXED

ABSTRACTS

13:30–14:30

Wednesday

8 November

Blanchard, Charmaine^{1,2}; Ratshikana-Moloko, Mpho^{1,2}; Mmoledi, Keletso^{1,2}; Tsitsi, Merika^{1,2}; Sobekwa, Mfanelo²; Prigerson, Holly³

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Introduction In Africa, cancer incidence is rising, with predominantly late-stage diagnoses and patients with significant palliative care needs. Public healthcare systems are strained and many patients with advanced disease are sent home to die. Palliative care addresses pain and other physical symptoms, psychosocial and spiritual distress of the patient and the family. South Africa (SA) follows WHO guidelines in recommending palliative care initiation at diagnosis, but has very few multidisciplinary palliative care teams. Spiritual care needs are acknowledged but not adequately addressed for patients struggling with life-threatening illnesses. This study aimed to assess the spiritual care needs of patients in the terminal stages of cancer.

Methodology Patients at Chris Hani Baragwanath Academic Hospital in Soweto, SA diagnosed with epithelial cancers, with an estimated six-month survival were recruited into the study. The patient and a nominated primary caregiver were interviewed at baseline. A palliative care needs assessment was administered at regular intervals until the patient died. A post-mortem interview was conducted with the primary caregiver. Assessments probed the physical, psychosocial and spiritual care needs of patients.

Results Of 190 patients interviewed at baseline, 98% believed in God and considered themselves to be religious or spiritual. 82% were seeking a stronger connection to God, 12% felt abandoned by God and the church and 8% felt that their cancer was a punishment from God. 88% were asking for forgiveness for their sins. At baseline 92% of patients felt life was worthwhile most of the time (score of >2/5) compared with 79% in the final interview before death. While 81% felt at peace most of the time at baseline (score of >2/5), 74% felt at peace in the final interview. Postmortem interviews with primary caregivers of 100 patients who had died revealed that: 87% felt the patient was at peace, despite suffering; 70% of patients were accepting of death, with 26% afraid of dying. In the last days, 97% of patients received a palliative care consult but only 22% received a visit from a religious or traditional healer or received spiritual support.

Conclusions Given that the majority of patients consider themselves religious or spiritual and the demonstrated level of spiritual care need in this population, spiritual care should be included in the care of patients with life-threatening illness, especially as they near the end of life. Patients will experience less suffering, more peace and perhaps retain a sense of life being worthwhile.

PRESENTATION

Bornman, Riana

CLINICAL PRESENTATION AND ENVIRONMENTAL CONTRIBUTIONS TO AGGRESSIVE PROSTATE CANCER IN BLACK SOUTH AFRICAN MEN

**SITE SPECIFIC
CANCERS
& OTHER
ABSTRACTS**

13:30–14:30

Thursday

9 November

Bornman, Riana¹; Hayes, Vanessa^{1,2}

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The Southern African Prostate Cancer Study (SAPCS) is a unique ongoing collection to investigate clinical presentation and risk factors within the Black populations of South Africa. Initiated in 2008 and enrolling over 1300 participants to date, we report a significant skewing towards aggressive disease presentation. Compared with African-Americans, South African Blacks present with significantly advanced histopathology, specifically Gleason score >7 (17% and 36%, respectively), as well as elevated prostate specific antigen (PSA) levels $\geq 20\text{mg/L}$ (17.2% and 83.2%, respectively). We observed exasperated aggressive phenotypes and PSA levels in men from rural versus urban localities. Overall, we found PSA levels to be significantly elevated in our study, for cases 83% PSA $\geq 20\text{mg/L}$ (median PSA = 98.8 mg/L) relative to men with no detectable prostate cancer 18.5% PSA $\geq 20\text{mg/L}$ (median PSA = 9.1 mg/L). Furthermore, we aimed to determine if the observed clinical presentation is driven by environmental or lifestyle factors. Investigating 24 demographic and lifestyle measures, we show significant prostate cancer risk associations with; family history of cancer ($p=0.0434$), ethno-linguistic classification ($p=0.0046$), presence of diabetes ($p=0.0199$), current sexual activity and erectile dysfunction ($p<0.0001$), balding pattern ($p=0.0038$), frequent aspirin usage ($p=0.0003$) and high PSA levels ($p<0.0001$). In conclusion, the SAPCS has established that well-designed and conducted research in an African-relevant manner contributes to the global knowledge of prostate cancer. Understanding the specific and rare genetic variations and environmental factors predisposing to prostate cancer in African men might be suitable to apply in prevention, diagnosis and treatment strategies.

POSTER

WELCOME RECEPTION AND POSTER SESSION ONE

16:30–18:00

Tuesday

7 November

Botteghi, Matteo

P144 | THE APOF PROJECT FOR THE HORN OF AFRICA: THE FIRST SEED OF A NETWORK OF PATHOLOGY LABORATORIES

Botteghi, Matteo¹; Stracca Pansa, Vincenzo¹; Guzzetti, Stefano¹;

Botteghi, Matteo^{1,2}; Stigliano, Egidio^{1,3}; Giovenali, Paolo¹

¹Associazione Patologi Oltre Frontiera; ²Università Politecnica delle Marche;

³University Hospital "A. Gemelli" / Catholic University of Sacred Heart

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Objective To describe a project managed by the Italian NGO "Associazione Patologi Oltre Frontiera" (APOF, "Pathologists Beyond Borders Association") for the implementation of Pathology Departments in the Horn of Africa region also using innovative IT solutions for the remote management of histological and cytological diagnoses.

Methods Since 2010 APOF operates in the Hospital of Balbalà, Republic of Djibouti, with a project aimed to the institution and the development of a Pathology Department. At present this Department is fully operative, with complete equipments and two well-trained pathologists from Cuba.

In 2015 APOF received a request from the Hospital of Hargeisa, in Somaliland, concerning the institution of a Pathology Department also in that Hospital.

Given the relative proximity of the two cities and the necessity to set up in reasonable times the diagnostic activities also in Hargeisa, APOF decided to start a new project aimed to build a new Pathology lab in Hargeisa for the preparation of slides, and to put the Balbalà Hospital in condition to diagnose also the cases coming from Somaliland, adopting a workflow based on the innovative telepathology platform named WaidX.

Results The main aim of this new project is to create a network of Pathology laboratories through the "Hub & Spoke" method, where the more organized laboratory of Djibouti will act as Hub for a neighbouring Pathology lab with no available pathologists. The slides produced in Hargeisa will be digitized with a special scanner. The WaidX telepathology platform makes possible the access of remote pathologists, operating from Djibouti and other foreign countries, to the virtual slides produced in Hargeisa. WaidX also allows the increase of bandwidth on poor quality digital connections, giving many benefits like an high level of service continuity, privacy for sensitive data, a strong integration of concurrent applications on a converged global network.

Conclusions The "Hub & Spoke" method allows the optimization of the local resources and may be extended in other areas of the Horn of Africa. The adoption of the innovative telematic platform WaidX helps in overcoming the limitations in sharing medical data and images, using cost-effective basic resources. Information and Communication Technologies are triggering stellar improvements in healthcare: the collaboration between remote medical staff through telepathology represents a virtuous development model to support LMIC in providing an appropriate level of diagnostics to the whole population.

POSTER

WELCOME RECEPTION AND POSTER SESSION ONE

16:30–18:00

Tuesday

7 November

Bouka, Jemila

**P131 | CHIRURGIE ONCOPLASTIQUE ET CONSERVATION MAMMAIRE
DANS LE CANCER DU SEIN : A PROPOS DE 52 CAS**

Bouka, Jemila^{1,2}; Jalil, Abdelouahed²

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Introduction La chirurgie oncoplastique est une chirurgie récente qui associe un geste d'exérèse tumorale et glandulaire à des techniques de chirurgie plastique. Le but de notre étude, est une analyse rétrospective de 52 cas traités dans le service de chirurgie carcinologique I à l'Institut National d'Oncologie à Rabat-Maroc, et leur comparaison avec les résultats de la littérature.

Matériel et méthodes 52 patientes atteintes d'un cancer du sein ont bénéficié d'une chirurgie conservatrice avec oncoplastie dans le service de chirurgie carcinologique I de l'Institut National d'Oncologie. Les patientes ont été opérées entre janvier 2007 et décembre 2011. La médiane d'âge est de 46 ans. Le type histologique le plus fréquent est le carcinome canalaire infiltrant. La taille tumorale moyenne est de 28mm. La localisation la plus fréquente est le quadrant supéro-externe (42,3%). La majorité des patientes sont classées T2N0M0.

Résultats Les techniques utilisées sont:

- une oncoplastie type I : quadrantectomie avec recentrage aréolaire dans 21,1% des cas,
- une oncoplastie type II dans 88,9% des cas : par une technique externe dans 30,8% des cas ; par un round block dans 23% des cas ; par une technique en J dans 11,53% des cas ; technique en T inversée à pédicule supérieur dans 7,7% des cas, technique en T inversée à pédicule inférieur dans 3,85% des cas, par une technique en V ou en oméga dans 1,92% des cas.

Les marges limites ont bénéficiées d'une reprise du lit tumoral dans 4 cas et d'une mastectomie dans 2 cas. Les résultats esthétiques étaient satisfaisants chez les patientes évaluables.

Conclusion Cette nouvelle approche oncoplastique permet d'anticiper le résultat esthétique, d'améliorer le résultat carcinologique en terme de limites de résection et de récurrence, et permet d'élargir les indications du traitement conservateur aux tumeurs entre 3-5 cm et aux tumeurs rétro-aréolaires.

POSTER

WELCOME RECEPTION AND POSTER SESSION ONE

16:30–18:00

Tuesday

7 November

Brand, Nathan

P171 | SENTINEL LYMPH NODE BIOPSY PROGRAM IN EAST AFRICA

Brand, Nathan¹; Wasike, Ronald²; Makhdomi, Khalid²; Chauhan, Rajendra²; Sayed, Shahin²

¹Columbia University; ²Aga Khan University

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Introduction Breast cancer is the most common malignancy among Kenyan women with an age standardized incidence rate of 51.7 per 100,000, and a cumulative 5-year survival of 51.8 %. Of the patients with breast cancer that present to Aga Khan University hospital (AKU), 38.4% are stage I or II, while 61.6% have advanced disease. Sentinel lymph node biopsy (SLNB) was developed as a less invasive method of evaluating clinically node negative disease, and the technique has led to accurately staging breast cancer while saving patients with negative sentinel node involvement from the morbidity of a full axillary lymph node dissection. While there is ample data describing all aspects of this procedure in the west, there is no published data describing SLNBs in sub-Saharan Africa. We describe the use of SLNB at AKU, a private hospital in Kenya.

Methods Women who received a sentinel lymph node biopsy at AKU from 2008 to 2016 were prospectively enrolled in an observational cohort study and were followed for as long as they followed up at the hospital. SLNB was performed using a radioactive tracer, blue dye, or both depending on availability and surgeon preference. Intraoperative assessment was done using touch prep, scrape prep or fresh frozen sectioning depending on pathologist preference. The tumor markers, ER, PR and HER-2 were assessed using immunohistochemistry on the surgical sample.

Results Between 2008 and 2016, 2 surgeons performed a sentinel lymph node biopsy on 129 women, 54% stage I and 46% stage II. The positivity rate was 22% and a concordance rate between intraoperative and permanent pathology was 92%. During the study period, 24 cases received both a SLNB and a full axillary dissection. Only one of these cases had a negative SLNB and a positive ALND, providing a false negative rate of 0.04 (95% CI 0, 0.1). Of the 129 patients, 125 had IHC for ER, PR and HER-2 performed with a positivity of 82%, 79%, and 14% for the three receptors respectively.

Conclusions The efficacy of sentinel lymph node biopsies performed at Aga Khan University Hospital is comparable to those performed in western cancer centers. Currently, AKU is the only center in Kenya offering the SLNB procedure and there is an opportunity for AKU to provide training to other centers in order to increase capacity of early stage breast cancer care in Kenya.

PRESENTATION

Brierley, James

PRESENTATION OF THE PRINCIPLES OF STAGING, TERMINOLOGY AND COMMON MISCONCEPTIONS

TERMINOLOGY & ESSENTIAL

TNM

14:40–16:30

Wednesday

8 November

Brierley, James¹

¹Princess Margaret Cancer Centre

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The key features of all cancers that determine prognosis and treatment recommendations are the site of the tumour, the tumour profile (which includes histopathology, morphology, molecular, and genetic characteristic of the tumour), and the anatomic disease extent or tumour stage. The importance of cancer stage in determining individual patient prognosis and treatment will be reviewed as well as its value in research and cancer control activities. Examples will be given. The need for a common language in cancer staging will be discussed.

The TNM classification of cancer staging will be described. In the TNM classification, T category describes the extent of the primary tumour, either by size, depth of invasion or invasion of adjacent structures, the N category indicates the absence or extent of regional lymph nodes metastasis, and the M category indicating the absence or presence of distant metastasis. The difference between the stage as a verb, 'to stage' and as a noun, 'the stage' will be demonstrated, and the importance of collecting stage data on a population basis will be shown with examples. Examples of common misuse will be given and definitions of terms used in staging and cancer surveillance will be given.

The conflict between the need for stability of cancer stage definitions over time and the need to evolve with advances in medicine will be examined. The confusion caused by combining anatomical extent of disease and other prognostic factors will be discussed. The mechanism for recommending change and the role of national TNM staging committees in developing recommendations for change and ensuring the use and collection of stage data will be reviewed. How to develop a national staging committee will be discussed along with their role in promoting the use of TNM as well as in recommending change is staging.

PRESENTATION

Brierley, James

THE OPPORTUNITIES FOR SELF-LEARNING: TNM E-MODULES

**TERMINOLOGY
& ESSENTIAL
TNM**

14:40–16:30

Wednesday

8 November

Brierley, James¹

¹Princess Margaret Cancer Centre

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Given the universal importance of cancer stage for patient/physician interaction and cancer control activities the UICC and eCancer have collaborated on a series of freely available educational modules. The purpose of these modules are to inform the global cancer community on cancer stage and go into additional details on staging selected common cancers. There are currently seven modules. The first which we recommend that everyone interested in cancer stage starts from is an introduction to the UICC TNM Classification. This module outlines the general principles of the UICC TNM Classification of Malignant Tumours and explains how to apply the principles and rules of staging to all tumour sites and defines additional descriptors and classifications that can be used. There are six site specific modules that describe tumour specific T,N and M category and stage group definitions. The sites covered were chosen to represent common tumours and tumours of global importance to the surveillance community and are: breast cancer, prostate cancer, cancer of the colon and rectum, cervix, lung and lip and oral cavity. Each module takes approximately 30 minutes to complete and includes a voice-over and interactive quiz and a certificate of completion can be printed at the end. Examples of the introduction and of the site specific modules will be demonstrated. Below is the link to the free educational modules.

(<http://ecancer.org/education/module/161-the-uicc-tnm-classification-system.php>)

POSTER

WELCOME RECEPTION AND POSTER SESSION ONE

16:30–18:00

Tuesday
7 November

Brigman, Meg

P169 | DEVELOPMENT OF A LOW COST TRAINING MODEL FOR SCREENING AND DIAGNOSING EARLY BREAST CANCER IN LOW RESOURCE SETTINGS

Brigman, Meg¹; Ansari, Nadia¹; Araya, Naod¹; Brigman, Meg¹;

Moturu, Anoosha¹; Black, Dalliah²; Parra, Sonia¹

¹Rice University; ²MD Anderson Cancer Center

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Background The majority of breast cancer deaths in low resource settings (LRS) are due to late stage diagnosis, given limitations in routine clinical breast exam (CBE) and mammogram screening. Efforts to increase healthcare workers (HCW) who are able to detect early stage breast cancers on CBE and, when available, perform ultrasound (US) guided needle biopsy for pathologic diagnosis have been challenging. Current breast cancer detection training models are too expensive for widespread teaching in LRS. The purpose of this project was to use a novel collaboration between bio-engineering, breast surgery, and breast radiology to create a training model for teaching CBE, US, and US-guided needle biopsy that is low-cost, portable, reusable, realistic, and easy-to-use in LRS for screening and diagnosing breast cancer at earlier stages.

Methods Two 23cm x 17cm x 9cm breast models were developed via silicone molds. One model represents benign breast masses while the other represents clinical findings associated with malignancy, such as skin dimpling and an inverted nipple. Ballistics gel was layered with a mixture of microbeads, coarse salt, and glitter to create a texture representative of benign fibrous breast tissue. Rubber balls were used to demonstrate the echogenicity, edge shadowing, and through transmission of a simple cyst, fibroadenoma, and phyllodes tumor. Cancers and enlarged axillary lymph nodes were made of plastic jacks, harder ballistics gel, and shaved rubber balls to demonstrate the irregularity often palpated on CBE and visualized on US with decreased through transmission, hyperechogenicity, and irregular edges.

Results Current price of the model is \$60 US dollars per breast mold. Testing for realism and ease of use was performed via questionnaires. Breast oncologists and ultrasound technicians reported high achievement of the models for realistic look and feel of breast tissue, skin, and abnormalities on physical exam and ultrasound, and an ease-of-use score of 97/100 on the System Usability Scale.

Conclusions This novel, low cost, easy-to-use model was developed through a unique multidisciplinary collaboration between bio-engineering, breast surgery, and breast imaging to provide a realistic model for teaching HCW in LRS early breast cancer diagnosis techniques with CBE, US, and needle biopsy. Future studies will be performed to determine this model's impact in training HCWs in LRS to increase early detection of breast cancer. The comprehensive model provides a chance to diagnose numerous cancer symptoms and includes a carrying case, care instructions, and a guide detailing each of the anomalies within the models.

POSTER

POSTER SESSION TWO

16:30–18:00
Thursday
9 November

Brinton, Louise

P211 | SKIN LIGHTENERS AND HAIR RELAXERS AS RISK FACTORS FOR BREAST CANCER: RESULTS FROM THE GHANA BREAST HEALTH STUDY

Brinton, Louise¹; Figueroa, Jonine²; Ansong, Daniel³; Vanderpuye, Verna⁴; Awuah, Baffour³; Clegg-Lampsey, Joe Nat⁴; Wiafe-Addai, Beatrice⁵

¹National Cancer Institute; ²Edinburgh Cancer Research Centre; ³Komfo Anoyke Teaching Hospital; ⁴Korle Bu Teaching Hospital; ⁵Peace and Love Hospital

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Background Skin lighteners and hair relaxers, two common exposures among women of African descent, have been suggested as possible risk factors for breast cancer.

Methods A case-control study in Accra and Kumasi, Ghana collected detailed information on usage patterns of skin lighteners and hair relaxers among 1,201 invasive breast cancer cases and 2,161 population-controls. Multivariate analyses were used to estimate odds ratios (OR) and 95% confidence intervals (CIs) for various exposures after adjustment for established breast cancer risk factors.

Results Control usage was 25.4% for ever use of skin lighteners and 89.2% for use of hair relaxers for at least one year. The association of skin lightener use to breast cancer risk was near null (OR=1.14, 95% CI 0.96–1.36), with somewhat higher risks for former (1.30, 1.06–1.60) than current (0.94, 0.73–1.21) users. There were, however, no significant dose-response relations by length of use, age at first use, or frequency of use. In contrast, hair relaxer use was associated with an increased risk of breast cancer (OR=1.69, 95% CI 1.24–2.31), again with higher risks for former (2.37, 1.69–3.33) than current (1.48, 1.08–2.03) users. Although the number of burns experienced was not a significant predictor of risk, there was evidence of increasing risk with increasing duration of use, restricted to women who predominately used non-lye products (p for trend < 0.01). This relation was most pronounced among women with few children and those who had smaller tumors at diagnosis, suggesting that other unmeasured lifestyle factors may have contributed to the observed excess risks.

Conclusions Although the present study does not implicate a substantial role for skin lighteners as risk factors for breast cancers in African women, the findings regarding hair relaxers were less reassuring. Given that both agents have some biologic plausibility for affecting breast cancer risk, continued investigations are warranted.

PRESENTATION

Brown, Biobele

BURDEN OF CARE GIVERS OF FAMILIES OF CANCER SUFFERERS

Brown, Biobele¹

¹University of Ibadan

CARE FOR FAMILIES OF CANCER SUFFERERS

07:15–08:20

Thursday

9 November

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The diagnosis of cancer comes with not only the uncertainty of survival but the responsibility of care which is often prolonged. By virtue of the nature of cancer and its multidisciplinary and multifaceted treatment, care often extends beyond the confines of health facilities, and to a large extent, places a burden on family members as caregivers.

This paper reviews the spectrum of care given by family members and caregiver burden in terms of social, psychological, behavioral and economic impacts of cancer on patient's family caregivers. It also reviews the predictors of caregiver burden in families of individuals suffering from cancer.

Caregiving activities are varied including personal care such as mobility, housework, feeding; medical care such as financing access to treatment, administration of medications, provision of palliative care at home; and organizing appointments and emotional support.

Caregiver burden is defined as the extent to which caregivers feel that their emotional or physical health, social life, and financial status have suffered as a result of caring. The burden cuts across the entire time frame of care starting from the time of cancer diagnosis till end of life for cases that become terminal eventually. Studies in both adult and pediatric cancer patients have highlighted certain common impacts on the family. These include social, psychological, behavioral and economic impacts on family caregivers. Economic impacts include depletion of family finances, loss of job and sale of property. Psychological impacts include anxiety and symptoms of depression. Caregiver burden has been shown in various studies to depend upon a number of factors such as age, gender, and marital status. Others include relationship to the patient, employment, income of caregivers, lack of family and social support, duration of caregiving, disruption in daily routine and stage of disease.

Caregiving has been linked to a broad range of health outcomes including cardiovascular disease, impaired immune function, hyperinsulinemia and increased mortality. Given these potential adverse effects, it is necessary to identify the sources of stress and those at increased risk in order to guide provision of support aimed at relieving the burden of care.

PRESENTATION

RADIATION & OTHER ABSTRACTS

08:25–09:25

Friday

10 November

Bruner, Deborah

HYPO-FRACTIONATION IN PATIENTS WITH LOW-INTERMEDIATE RISK PROSTATE CANCER: HAVE WE REACHED THE PRACTICE CHANGE TIPPING POINT WITH RESULTS FROM NRG ONCOLOGY/RTOG 0415?

Bruner, Deborah¹; Pugh, Stephanie L²; Lee, William³; Low, Daniel⁴; Sandler, Howard M⁵; Movsas, Benjamin⁶

¹Emory University School of Nursing; ²NRG Oncology Statistics and Data Management Center; ³Duke University Medical Center; ⁴UCLA Radiation Oncology; ⁵Cedars-Sinai Medical Center; ⁶Henry Ford Hospital

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Background Hypofractionated radiation therapy (H-RT) has now been shown non-inferior to conventional (C-RT) fractionation schedules in men with low-intermediate risk prostate cancer in terms of disease free survival by three large clinical trials. However, at least one trial, NRG Oncology/RTOG 0415, had a 6.9% higher rate of physician reported gastro-intestinal (GI) grade 2 (but not grade 3+GI nor any genito-urinary [GU]) toxicity on the H-RT arm. Our work has assessed differences in patient reported outcomes (PROs) including bowel, bladder and sexual function between the H-RT and C-RT schedule in men with low-risk prostate cancer.

Methods Eligibility included men with favorable-risk prostate cancer who were randomly assigned to a C-RT schedule (3D/IMRT 73.8 Gy in 41 fractions over 8.2 weeks) or to a H-RT schedule (3D/IMRT 70 Gy in 28 fractions over 5.6 weeks). PROs were assessed with the (previously presented) Expanded Prostate Index Composite (EPIC) collected at baseline, 6, 12, 24, and 60 months. Change scores, calculated as follow-up – baseline score were compared between treatment arms. Clinical significance was determined for EPIC change scores.

Results Of 1092 patients analyzable for the primary endpoint, 962 consented to PROs. No statistically significant differences with regard to any of the PRO baseline scores were measured between treatment arms. There were no differences in change scores between arms with respect to any of the EPIC domain (bowel, bladder, sexual function) scores except at 12 months, those on the 70 Gy arm experienced a larger decline as compared with patients on the 73.8 Gy arm in the bowl domain (median score -3.6 vs. -1.8, respectively, $p=0.0037$), but it did not reach clinical significance. In this newly reported data, there are no differences between arms at any time point for the HSCL or Eq5D.

Conclusion The current study shows non-inferiority of H-RT compared to C-RT in terms of bowel, bladder, sexual, anxiety/depression, and utility scores. The preponderance of evidence suggests it is time for practice

POSTER

WELCOME RECEPTION AND POSTER SESSION ONE

16:30–18:00

Tuesday

7 November

Burgert, Stephen

P067 | INTERIM RESULTS FROM A HOSPITAL-BASED CANCER REGISTRY IN RURAL KENYA

Burgert, Stephen¹; Okwemba, Lydia¹; Mwachiro, Elizabeth¹; Spriegel, John¹;
Korir, Anne²; Parker, Robert¹

¹Tenwek Hospital; ²Kenya Medical Research Institute

Correspondence steve.burgert@wgm.org

Introduction The Tenwek Hospital cancer registry was established in 2016, after consultation between the Kenya Medical Research Institute, Kenya Ministry of Health, and Tenwek Hospital. The registry, in Bomet County, southwestern Kenya, abstracts all cancer cases diagnosed in the hospital and is the first registry in rural Kenya.

Methods Data is collected from all biopsies from tissue resections, fine needle aspiration, pleural fluid, and ascitic fluid, with clinical verification by a pathologic diagnosis. In addition, patient data is obtained from hospital records via our electronic health management system. Data is entered via CANREG software - CANREG5. Data collected reflects treatment, designated tumor location and tumor characteristics, and pathologic information. Patient follow-up is added as of the patient's last seen status in the hospital. In case of patient mortality, the date and cause of death are registered. A mechanism has been developed to make the registry self-sustainable.

Results During the year of 2016 a total of 520 cases were recorded for all types of cancer. Gender distribution for cases was as follows: female all sites 233 and male all sites 287. Esophageal cancer was the highest recorded site for both male and female patients with 122 and 125, respectively. Among females, the leading sites for cancers were esophagus, cervix, rectum, and thyroid. In males, the leading cancer sites were esophagus, prostate, rectum, stomach, and colon.

Conclusion A cancer registry has been established in rural Kenya. Initial results based on pathologic specimens give a good overview evaluation of tumor diagnoses at the hospital. More complete data will be available with the inclusion of all cancer patients based upon diagnostic coding. The long-term goal is to collaborate in the maintenance of a population-based cancer registry for Bomet County.

POSTER

Buswell, Lori

P273 | FIVE YEARS OF NURSE TWINNING IN RURAL RWANDA: HEALTH SYSTEM STRENGTHENING THROUGH CAPACITY BUILDING

**POSTER
SESSION
TWO**

**16:30–18:00
Thursday
9 November**

Buswell, Lori¹; Hategekimana, Vedaste³; Muhayimana, Clemence³; Shyirambere, Cyprien²

¹Dana-Farber Cancer Institute; ²Partners In Health / Inshuti Mu Buzima;

³Ministry of Health / Butaro Hospital

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Background In 2011 the Rwandan Ministry of Health (RMOH), in collaboration with Partners In Health (PIH) sought the expertise of Dana-Farber Cancer Institute (DFCI) to provide oncology education for Rwandan doctors and nurses as it was formally designating Cancer Centers of Excellence. In early 2012, DFCI, RMOH, and PIH created a twinning program where DFCI nurses spent time in Rwanda (between 3 and 17 months) providing on-the-ground training and mentoring of nurses at the Butaro Cancer Center of Excellence (BCCOE). Prior to this time limited formal cancer education or training was available in Rwanda.

Methods The collaboration started with preparation of educational content designed by DFCI nurses. This content was part of the First National Baseline Cancer Training series supported by the RMOH. Immediately after the training, the first DFCI nurse started the twinning program at the BCCOE. Her effort was dedicated to learning about and assessing the local environment, nursing practice, skills, knowledge, values, priorities and resources available such as supplies, medications, equipment, and support staff. Ten additional DFCI nurses have rotated to BCCOE providing on-the-ground training.

Accomplishments Many accomplishments have resulted from this twinning model. The development of standard operating procedures and competency checklists for chemotherapy mixing and administration that included personal protective equipment and nurse double checks to ensure the utmost safety in chemotherapy administration were created. Advocacy for nursing resources in this growing program was supported by hospital leadership and led to additional staffing. A 3-week oncology nursing orientation program for new nurses at BCCOE as well as a 12-week program for nurses from other hospitals was developed. A quality improvement patient education project was undertaken resulting in an increase of knowledge and satisfaction among patients. The BCCOE was the clinical site for the first master's degree nursing program in Rwanda where students learned about cancer care and practiced clinical skills. The most significant accomplishment of our capacity building efforts has been the emergence of Rwandan nurse leaders and educators who now carry the responsibility of training and mentoring their peers.

Summary In summary, the support of the RMOH, BCCOE, PIH and DFCI leadership was a major factor in the program's success. A highly functioning oncology nursing staff works at the BCCOE who are knowledgeable and skilled in the care of cancer patients. Many opportunities exist for our continued collaboration including process improvement initiatives and nursing research in order to understand the impact of our efforts.

POSTER

WELCOME RECEPTION AND POSTER SESSION ONE

16:30–18:00

Tuesday
7 November

Butonzi, John

P097 | THE EPIDEMIOLOGY AND MORTALITY OUTCOMES OF ADULT PATIENTS WITH AIDS DEFINING CANCERS AT A UNIVERSITY HOSPITAL IN KIGALI, RWANDA

Butonzi, John¹; Kieffer, Kelly²; Mukabatsinda, Constance³; Mpunga, Tharcisse¹
¹Butaro District Hospital / Ministry of Health; ²Dartmouth University; ³Kigali
University Teaching Hospital

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Background AIDS defining cancers (ADCs) are a preventable cause of severe morbidity and mortality among people living with HIV/AIDS. The prevalence and mortality associated with ADCs in Rwanda and other nations in sub-Saharan Africa is not well established. The objective of this study was to describe the spectrum of ADCs in HIV infected patients receiving care at Kigali University Teaching Hospital (KUTH).

Methods We conducted a descriptive, cross-sectional study of all adult patients who presented at KUTH from January 1, 2010 through December 31, 2014 with diagnosed Kaposi Sarcoma (KS), invasive cervical carcinoma (ICC), and non-Hodgkin lymphoma (NHL). Data regarding patient demographics, mortality, treatment were collected from a hospital cancer registry and manual chart review and, when needed, communication with the patient or next of kin. Analysis was conducted using Microsoft Excel. For each of the three ADCs, descriptive statistics and mortality at 30 days, 90 days, 180 days and 12 months after cancer diagnosis were conducted. To avoid under-estimating mortality, we limited the mortality analysis to the population for which vital status was known, and included only subjects diagnosed with an ADC early enough in the study for a final mortality endpoint to be assessed when the study closed.

Results 268 patients were included: 60% had KS, 24% had NHL, and 15% had ICC. 95% of patients with ICC and 97% with NHL presented with stage IV cancer. Mean (SD) CD4 counts at diagnosis were 126.1 (86.4), 121.7 (60.6), and 113.9 (63.1), for KS, NHL, and ICC, respectively, and category A ART adherence rates were 58%, 50%, and 63%. Vital status was documented in 66% of patients with KS, 58.5% of patients with NHL, and 51.2% of patients with ICC. Among those patients, 30-day mortality rates were 5% for KS, 16% for NHL, and 5% for ICC; 12-month mortality rates were 44%, 48%, and 92%. Among patients with all three cancer types, survival was associated with higher CD4 counts ($p=0.005$) and being married ($p=0.049$); among KS patients, survival was associated with better ART adherence ($p=0.03$).

Conclusions The high rates of advanced stage disease are likely a major factor in mortality, and could potentially be reduced through improvements in cancer screening practices, education of patients and referring physicians, and better access to specialty care. Association of survival with better ART adherence and higher CD4 counts underscores the importance of coordinating treatment of the cancer and the underlying HIV infection.

PRESENTATION

PALLIATIVE
CARE &
OTHER
ABSTRACTS

14:40–16:30

Wednesday

8 November

Buyinza, Nasur

THE PSYCHOSOCIAL AND ECONOMIC EFFECTS OF CARING FOR TERMINALLY ILL CANCER PATIENTS: THE CASE OF HOSPICE AFRICA UGANDA

Buyinza, Nasur¹

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Background Care giving at the end of life can be a challenging and confronting experience. The responsibilities of giving care to terminally ill cancer patients may include executing complex physical and mental tasks including financial planning, decision making, emotional support and coordination of care.

Aim To identify the psychosocial and economic effects of caring for terminally ill cancer patients attending Hospice Africa Uganda

Methods This was a cross sectional both qualitative and quantitative study. The source of data was restricted to care givers of terminally ill cancer patients attending Hospice Africa Uganda. Sampling was simple random and patients who were scheduled for review on any given day during the study period had their files randomly selected. Care givers whose patients had their files picked were invited to participate in the study.

Results Results from this study showed that caretaking had statistically significant effects on the psychosocial wellbeing of caretakers as shown by the p values ($p < 0.05$). Particularly their relationship with God ($p < 0.05$), getting enough time to attend social gatherings ($p < 0.05$) and caring for their children ($p < 0.05$). Fatigue and exhaustion as a result of giving prolonged care to the terminally ill ($p < 0.05$) was as well reported.

Results also show that providing care to terminally ill cancer patients had minimal effect on the economic livelihood of care givers. Care giving only had statistically significant influence on the changes in income of caregivers ($p < 0.005$), and the fact that caregivers could not find an alternative job alongside caring for the patient ($p < 0.05$).

Conclusion/ Lessons Learnt Care giving has a statistically significant effect on the psychosocial and economic well being of caregivers. This study recommends that caregivers and their families need to be given ongoing support so as to help them provide adequate care to cancer patients and their families which should be initiated early in the disease trajectory.

POSTER

WELCOME RECEPTION AND POSTER SESSION ONE

16:30–18:00

Tuesday
7 November

Cabanes, Anna

P040 | PROMISING PRACTICES FOR EQUITABLE ACCESS TO ONCOLOGY CARE IN ZAMBIA

Cabanes, Anna¹; Cruz, Tauane¹

¹Susan G. Komen

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Cancer is projected to increase at a staggering rate in developing countries over the next two decades. In Zambia, women will be hardest hit, as breast and cervical cancers are the most common malignancies and account for almost 50% of cancer related deaths.

Our objective is to illustrate how civil society efforts can support a strategy for reducing breast cancer mortality in Zambia. We will describe promising practices focused on increasing education, training of healthcare providers and improving access to care.

Promising practices responded to the gaps identified in an analysis of the status of breast and cervical cancer services in Zambia at each phase of the patient journey. All practices implemented evidence-based initiatives with view to integrating breast cancer on cervical cancer activities. And all included solid evaluation plans that collected outcomes using a standardized set of key indicators by project type that captured output data.

Collaborative training and technical support programs were established between local organizations and a US-based academic center leading to the implementation of a pilot program in two newly established breast cancer clinics in Lusaka and Kabwe with trained staff that perform CBE, evaluation of breast abnormalities and ultrasound-guided biopsies. Using the operational framework from these clinics as a model, where all steps in the breast care pathway are combined into a single visit, including an option for surgery (One Stop Shop), the same partners implemented week-long breast care outreach camps inside of a rural government-operated clinic.

To support our efforts to address breast cancer, we fostered the formation of an alliance of cancer advocacy groups (Cancer Prevention Alliance – Zambia; CAPRAZ), we engaged in an international coalition (Pink Ribbon Red Ribbon) to integrate breast cancer control activities into existing platforms for HIV-AIDS and cervical cancer; and we are collaborating with the Zambian Ministry of Health in a breast cancer consensus meeting to collectively co-create the next steps for a breast cancer program.

Cancer advocacy can make significant contributions to cancer control by shaping programs that are responsive to the needs of the consumers and to raise awareness and influence decision-makers to bring necessary transformative change. Our results show that evidence-based programs provide the opportunity to improve service in areas most in need and can lay the foundation for the expansion of women's cancer control activities in Zambia.

PRESENTATION

Campos, Nicole

THE COST-EFFECTIVENESS OF CERVICAL CANCER SCREENING IN WOMEN LIVING WITH HIV IN SOUTH AFRICA

**MIXED
ABSTRACTS**

**13:30–14:30
Wednesday
8 November**

Campos, Nicole¹; Lince-Deroche, Naomi²; Chibweshwa, Carla^{3,4}; Firnhaber, Cynthia^{4,5}; Jeronimo, Jose⁶; Tsu, Vivien⁶; Kim, Jane¹

¹Harvard T.H. Chan School of Public Health; ²University of the Witwatersrand;

³University of North Carolina; ⁴Clinical HIV Research Unit; ⁵Right to Care;

⁶PATH

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Background Women with HIV face increased risk of human papillomavirus (HPV) acquisition and persistence and increased risk of cervical intraepithelial neoplasia grades 2 and 3 (CIN2,3) and invasive cervical cancer. WHO guidelines recommend cervical cancer screening every 3 years for these high-risk women, but the comparative- and cost-effectiveness of different screening strategies have not been established.

Methods To assess which screening strategies would be most effective and cost-effective among women with HIV in South Africa, a mathematical model of HPV infection and cervical carcinogenesis was modified to reflect co-infection with HIV. Women in the model were assumed to begin ART at age 25 (CD4 350 cells/ μ l). The model was calibrated to age-specific prevalence of high-risk HPV and the proportion of HPV type-specific infections in CIN3 and cervical cancer in HIV-infected women in South Africa. Cost and test performance data were drawn from in-country data sources. The model was used to project reductions in lifetime risk of cervical cancer and incremental cost-effectiveness ratios (ICER, \$/year of life saved [YLS]) associated with different cytological (Pap) testing and HPV DNA testing algorithms beginning at HIV diagnosis.

Results The most effective strategy given a 3-year screening interval was HPV testing followed by treatment (test-and-treat), reducing lifetime cancer risk by 50.2% and outperforming Pap testing (referral threshold: ASCUS+), Pap testing (HSIL+), and HPV testing with 16/18 genotyping, which reduced cancer risk by 35.0%, 23.6%, and 33.9%, respectively. Pap (ASCUS+) and HPV16/18 genotyping were dominated (less effective, higher costs), but Pap (HSIL+) (\$420/YLS) and HPV test-and-treat (\$1,360/YLS) were efficient strategies, with ICERs below South Africa's per capita GDP of \$5,720. Cost-effectiveness results were robust as costs, test performance, visit compliance, cryotherapy eligibility, and treatment effectiveness were varied. However, reduced visit compliance decreased effectiveness for all strategies. The ICER for HPV test-and-treat fell to \$400/YLS when the HPV test cost was reduced by 50%.

Conclusions A 3-yearly HPV test-and-treat approach is very cost-effective for screening HIV-infected women in South Africa. Increasing compliance with recommended follow-up and price reductions in HPV tests would further improve health benefits and value.

PRESENTATION

Carvalho, Gonçalo

**BIOMARKERS IN LOW INCOME COUNTRIES:
A USEFUL AND EASY-TO-APPLY SOLUTION**

PALOP

14:40–16:00

Friday

10 November

Carvalho, Gonçalo¹

¹Biocartis

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Cancer can hit anyone at any time and treatment remains a real challenge. Because cancer doesn't follow rules. It fights back against therapies. It adapts. It changes its path. It does whatever it can to stay ahead of us.

At the advanced edge of oncology, rapid access to accurate data about relevant cancer mutations and treatment resistance is vital and creates the opportunity for early disease interception, reducing the anxiety while waiting for results and the time before starting the best possible treatment for all cancer patients.

In this context, Biocartis aims to make personalized medicine an everyday reality, by providing direct access to molecular diagnostics information close to the clinical decision-making point. Establishing a new gold standard in diagnostic testing Biocartis delivers innovative and vital solutions to the pharmaceutical and healthcare market.

Idylla™, Biocartis' fully automated, real-time Polymerase Chain Reaction (PCR) based molecular diagnostics system, with its compact scalable design and outstanding ease-of-use, overcomes the traditional barriers of molecular diagnostics, allowing it to be used in virtually any laboratory setting. By providing same-day-results, Idylla™ enables physicians to make timely decisions on patients' therapy anywhere and anytime.

Idylla™ covers the entire process from sample to result in a time frame of 35 to 150 minutes with less than 2 minutes hands-on time and can be used with multiple sample types, including solid and liquid biopsies. This flexibility allows use of the system for respectively research, therapy decision or possibly future monitoring applications both in oncology, infectious diseases and beyond. In oncology, the system allows rapid and easy molecular diagnostics research and enables access to the right therapies. In infectious diseases, the system shows great potential to be used for improved disease surveillance

The Idylla™ system in combination with the Idylla™ Molecular Oncology Assays differs from other technologies in its outstanding ease-of-use, leading to an unsurpassed level of standardization, and its short turnaround time, allowing immediate access to therapy.

Idylla™ Molecular Oncology assays are available for BRAF, KRAS, NRAS and EGFR biomarkers* following international guidelines for diseases like Melanoma, Colorectal and Lung cancer.

*Due to regulatory restrictions, the Idylla™ products may not be available in all countries. Please check availability with the local Biocartis representative. <https://biocartis.com/>

POSTER

Casabonne, Delphine

P212 | EPSTEIN-BARR VIRUS AND PLASMODIUM FALCIPARUM IN ENDEMIC BURKITT LYMPHOMA: A SEROLOGICAL APPROACH

**POSTER
SESSION
TWO**

**16:30–18:00
Thursday
9 November**

Casabonne, Delphine¹; Aguilar, Ruth²; O'Callaghan-Gordo, Cristina³; de Sanjosé, Silvia¹; Dobaño, Carlota²; Newton, Robert⁴

¹Centro de Investigación Biomédica En Red (CIBER) Epidemiología y Salud Pública / IDIBELL / ICO; ²Universitat de Barcelona; ³Centro de Investigación Biomédica En Red (CIBER) Epidemiología y Salud Pública (CIBERESP), ISGlobal, Center for Research in Environmental Epidemiology / Universitat Pompeu Fabra; ⁴MRC / UVRI Uganda Research Unit on AIDS / University of York

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Objective To elucidate the combined effect of Epstein-Barr virus (EBV) and Plasmodium falciparum (P.falciparum) in the development of endemic Burkitt lymphoma (eBL) using serological data.

Methods IgG and IgM levels against EBV and P. falciparum were measured in plasma samples from 442 HIV seronegative Malawian children (271 eBL cases and 171 controls) between 1.4 to 15 years old using a multiplex panel combining 19 antigens by quantitative suspension array technology. Principal component analysis, elastic net models, regression models and interaction tests were used.

Results Elevated levels of EBV IgG were associated with eBL (high versus low tertile odds ratios [OR]= 8.67, 95% confidence interval [CI]= 4.81-15.64). An additive interaction between seropositivity to P. falciparum MSP-3 erythrocytic-stage antigen and EBV was detected (OR= 10.6, 95%CI= 5.1-22.2). Decreased risks of eBL were found with increasing antibodies to P. falciparum pre-erythrocytic-stage antigens CelTOS (IgM) and LSA-1 (IgG). We observed variability in the humoral response by involvement site head versus abdominal.

Conclusions This study confirms the role of EBV in eBL and demonstrates a joint association between EBV and P. falciparum infections. Differential effects by P. falciparum liver vs blood stage infections were observed, suggesting a complex modulation of both infections in eBL etiology. The association between immune response and site deserves further evaluation. Future longitudinal studies including clinical, immunological and molecular data on EBV and P. falciparum are warranted to address the joint effect of these infections.

PRESENTATION

Castro, Cesar

VALIDATING A SMARTPHONE ATTACHMENT FOR MOLECULAR CANCER DIAGNOSTICS IN BOTSWANA

RESEARCH ON AFFORDABLE TECHNOLOGY IN GLOBAL ONCOLOGY

14:40–16:00

Friday

10 November

Castro, Cesar¹; Pathania, Divya¹; Im, Hyungsoon¹; Lee, Hakho¹; Chabner, Bruce¹; Weissleder, Ralph¹

¹Massachusetts General Hospital / Harvard Medical School

Correspondence Castro.Cesar@mgh.harvard.edu

The need for practical and low-cost lymphoma diagnostics is more pronounced in resource-limited settings with overburdened clinical infrastructures. Here, we describe an imaging platform that leverages smartphone technology to rapidly detect lymphoma cells labeled with marker-specific microbeads to generate unique holographic signatures. Captured images are wirelessly transmitted to remote servers for reconstruction and analyses. We developed a two-step labeling method that simplified reagent preparation by obviating primary antibody modification (i.e. removes need for costlier customized antibodies) and enabling use of generic microbeads for various markers. Hardware and software were both advanced to align with the needs of point-of-care testing across different terrains. Preclinical: Lymphoma cell lines (Daudi, Toledo, DB, and Jurkat) were immunobead-labeled with lymphoma biomarkers [CD19 and CD20 to identify B cells, kappa and lambda to determine B cell clonality, CD10 as marker for germinal center-derived B-cell lymphomas, CD3 and CD5 to detect T cells]. High concordance with flow cytometry data was noted. To increase portability and shelf-life, lyophilized (dry powder form) antibodies were tested and compared with parent solution antibodies after 2 weeks of storage at 4 Celsius; activity was similar to original antibodies. Clinical: Within an Institutional Review Board approved protocol at the Massachusetts General Hospital (Boston, MA, USA), fine needle aspirates from patients with suspected lymphoma were tested individually for clinically relevant biomarkers. The results demonstrated high concordance with flow cytometry and clinical impressions.

Conclusion Exploiting mobile diagnostic terminals could empower medical resource-challenged communities. Coupled with low costs, this holographic platform becomes a robust tool to augment pathology testing and poised for proof-of-concept testing in Botswana.

POSTER

WELCOME RECEPTION AND POSTER SESSION ONE

16:30–18:00

Tuesday

7 November

Cege-Munyoro, Esther

**P145 | CHALLENGES FACED BY PATIENTS SEEKING CANCER
TREATMENT IN 3 NATIONAL HOSPITALS (KENYA, TANZANIA, AND
UGANDA)**

Cege-Munyoro, Esther¹; Mwaiselage, Julius⁴; Olateju, Adetoun²;
Nakaganda, Annet³; Solt, Kristen⁵; Kamala, Benjamin⁶

¹Kenyatta National Hospital; ²Redribbonpinkribbon; ³Uganda Cancer Institute;

⁴Ocean Road Cancer Institute; ⁵American Cancer Society; ⁶T-MARC Tanzania

Correspondence drcege@icloud.com

Objective The American Cancer Society partnered with 3 African National Referral hospitals to assess barriers to cancer care among patients visiting the hospitals. These assessments were conducted to understand and document cancer treatment literacy, logistical and psychosocial challenges for cancer patients as a foundation for the removal of identified barriers.

Methods The study used a cross-sectional survey design utilizing both quantitative and qualitative methods and employing specific inclusion/exclusion criteria to recruit eligible participants. Each site used stratified random sampling methods to recruit participants. A standardized questionnaire was used to collect socio-demographic information, disease and treatment information, and barriers to cancer treatment. Both quantitative and qualitative methods of data collection were used in the study. Quantitative data was analyzed using descriptive analysis and correlations tested using Chi-square tests and logistic regression. Thematic analysis was done for qualitative data.

Results A total of 375 were recruited in Uganda, 399 in Tanzania and 460 in Kenya. The preliminary results so far are from Tanzania and Kenya. In Kenya survey data showed a sizeable percentage (29 %) of patients missed or delayed treatment because of barriers including challenges with finances, transport to/ from treatment, and lack of accommodation. Other challenges included not knowing where to go for services within the hospital and needing information about their disease, treatment, and side effects. Results indicate patient satisfaction with care received and with communication with providers. In Tanzania, about 84% of the patients were residing outside Dar es Salaam, indicating need for transport fare when travelling to the treatment centre. About 62% were staying outside the hospital while receiving their treatment, indicating daily cost of transport receiving treatment.

Conclusions Because comprehensive cancer treatment, is available only at the national referral hospitals located in capital cities, patients mobilize resources to travel to the capital city for treatment. Providing patient support services including transportation solutions, hospital navigation, and housing options were considered likely to enhance patients' access /adherence to cancer treatment and ultimately improve cancer treatment outcomes.

POSTER

Cege-Munyoro, Esther

P338 | THE QUALITY OF LIFE OF PATIENTS WITH HEAD AND NECK CANCER AT A CANCER TREATMENT CENTRE IN KENYA

**POSTER
SESSION**

TWO

16:30–18:00

Thursday

9 November

Cege-Munyoro, Esther¹

¹Kenyatta National Hospital

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In Kenya head and neck cancers are ranked as the most common cancer in males and third in females (Mutuma 2006). Most patients with head and neck cancer present late. The main treatment modality currently offered is an aggressive attempt to control the disease. The treatments can have a profound effect on the patients' quality of life. This study aims to get patient perspective of the experience of their quality of life as they undergo treatment to help in future planning of services for these patients. Objective; To explore the Quality of life concerns of patients undergoing treatment for head and neck cancer at Kenyatta National hospital (KNH)

Methods The study was carried out in the wards KNH. Head and Neck cancer patients admitted were consecutively recruited in this cross sectional survey over a period of 3 months. Two questionnaires used, one collected socio-demographic information while the other was the McGill quality of life questionnaire, a validated quality of life (QOL) questionnaire. The data collected was then analyzed in SPSS Version 17. Descriptive statistics were produced and presented in charts and tables. Factor analysis was conducted and principal components analysis (PCA) used to extract the possible subscales followed by orthogonal varimax rotation.

Results 104 patients completed questionnaires. The majority were male (79%) and the mean age of the study group was 51 years. 79% of the participants in the study population knew they had a cancer diagnosis. Most patients wanted further information about the treatment they would receive. A total of 30 physical problems or symptoms were reported; Pain, tiredness and lack of appetite, in that order, were the three most troublesome physical problems. Frequent cancer sites were nasopharyngeal and laryngeal cancer. Most patients had stage 3 or 4 cancer although for some the stage of cancer was not identified. Data showed a low (i.e. poor) score for physical symptoms/problems, signifying that these were affecting the patients' quality of life more than any other aspect of their life. financial stress and various psychosocial issues emerged as the main stressors recorded.

Conclusion Patients need more information on their disease and treatments. Head and neck cancer is associated with a high symptom burden so more attention needs to focus on modalities of treating or reducing physical symptoms/problems. Financial stress is a major concern for this group of patients and support should be put in place to reduce the financial burdens of treatment.

POSTER

Cege-Munyoro, Esther

P424 | SETTING UP A PATIENT NAVIGATION PROGRAM AT KENYA'S NATIONAL REFERRAL HOSPITAL

**WELCOME
RECEPTION
AND POSTER
SESSION ONE**

16:30–18:00

Tuesday

7 November

Cege-Munyoro, Esther¹; McComb, Kristie²; Omulogoli, Grace¹; Solt, Kristen²
¹Kenyatta National Hospital; ²American Cancer Society

Correspondence drcege@icloud.com

Background With estimated 645,000 new cancer cases and 456,000 cancer deaths (GLOBOCAN 2012) annually, Africa bears the double burden of infectious and non-communicable diseases, straining national health care systems and leaving patients with little access to quality health care. Leading patients through the cancer journey is a prerequisite for improved treatment outcomes.

Methods To design the hospital-based patient navigation program in at Kenyatta National Hospital (KNH), we used the adapted WHO guidelines and American Cancer Society's (ACS) experience running such programs domestically. In 2015-2016, ACS supported a comprehensive needs assessment, including a survey of 446 cancer patients at KNH, which highlighted patients' challenges with finding their way around hospital, long wait times to be seen by the doctor, understanding treatment options and the timeline of their disease. These problems were additive to the basic food, shelter, and transportation needs experienced by a vast majority of patients in Kenya.

Results We discussed the results of patient survey with hospital management and chief clinicians to enlist their support. We created a Cancer Care Committee to design the Patient Navigation Program (PNP). The key program components included 3 levels of navigation to address barriers identified in the patient assessment: physical (guide patients to service points within KNH while ensuring their safety/ security), clinical (assess patient/caregiver needs, answer questions and provide tailored information on their diagnosis, treatment plan, and potential side effects), and lay (work with clinical navigators to provide patients with resources and assistance to address logistical, cultural, structural, financial, communication, spiritual and psychological barriers). ACS provided a 5-day training to all navigators. The training included a simulation in which navigators role-played the patient and navigator experience.

The intervention was launched in June 2017, and one of the immediate results was the identification of additional barriers, such as the long wait for lab results which caused patients to miss follow-up appointments. This has allowed KNH to review their lab processes in an effort to optimize them.

Conclusion Quality patient navigation programs in resource limited settings remove some known and identify previously hidden barriers, leading to improved patient satisfaction and treatment outcomes.

POSTER

POSTER SESSION TWO

16:30–18:00
Thursday
9 November

Chajes, Veronique

P213 | TRENDS OF SERUM PHOSPHOLIPID FATTY ACIDS OVER TIME IN RURAL UGANDA: EVIDENCE OF NUTRITIONAL TRANSITION?

Chajes, Veronique¹; Gibson, Lorna²; Slimani, Nadia¹; Asiki, Gershim³; Wild, Christopher P.¹; Newton, Robert^{3,4}

¹International Agency for Research on Cancer; ²London School of Hygiene and Tropical Medicine; ³MRC/UVRI Uganda Research Unit on AIDS; ⁴University of York

Correspondence chajesv@iarc.fr

Background Non-communicable diseases are projected to become the most common causes of death in Africa by 2030. Despite this fact, information on risk factors – including nutritional factors – have not been fully studied in a large-scale epidemiological context in populations undergoing rapid epidemiological and nutritional transitions with concomitant changes in lifestyle and diet. To assess directly the trends of dietary fatty acids over time in Uganda, we examined biomarkers of fatty acids in serum collected from a cross section of individuals living in rural south-west Uganda, at three time points over two decades.

Methods The General Population Cohort is a population-based open cohort study, established in 1989 to examine trends in HIV prevalence and incidence, and their determinants in rural south-western Uganda. The study population of about 20,000 residents comprised a cluster of 25 neighbouring villages. A total sample of 915 adults and children were selected from the General Population Cohort at three times, 1990 (n=281), 2000 (n=283) and 2008 (n=351). Serum phospholipid fatty acids were measured by gas chromatography at the International Agency for Research on Cancer. Multivariate regression analyses were performed to compare geometric mean levels of fatty acids by period time.

Results Serum phospholipid fatty acid profiling showed high proportions of saturated (SFA), cis monounsaturated (MUFA) and industrial trans fatty acids (TFA), likely to be biomarkers of high consumption of palm oil and hydrogenated fats. In contrast, proportions of n-6 and n-3 polyunsaturated fatty acids (PUFA) from vegetable oils and fish were low, as well as natural TFA from dairy foods. From 1990 to 2008, serum phospholipid showed increases in SFA (17.3% increase in adults, 26.4% in children), MUFA (16.7% increase in adults, 16.8% in children), and n-6/n-3 PUFA (40.1% increase in adults, 39.8% in children). Level of elaidic acid, the main 18-carbon TFA isomer from hydrogenated fats, increased in children (60.1% increase).

Conclusions These data show evidence of an unfavourable trend over time towards a Westernization of dietary fatty acids in a rural Ugandan population, characterized by increasing levels of SFA, MUFA, industrial TFA (specifically elaidic acid), and n-6/n-3 PUFA. If the major sources of these harmful fats are the types of oils and fats used for cooking, this offers opportunity for policy change to improve public health in low income settings. Finally we also demonstrate the power of this approach, which may provide a benchmark for future prospective studies on nutrition and cancer.

POSTER

WELCOME RECEPTION AND POSTER SESSION ONE

16:30–18:00

Tuesday
7 November

Chamberlin, Mary

P146 | GLOBAL HEALTH FELLOWSHIP ELECTIVES IN ONCOLOGY: RWANDA PAVES THE WAY

Chamberlin, Mary¹; Butonzi, John²; Lansigan, Frederick¹; Costa, Cristiana¹; Mpanumusingo, Egide³; Shyirambere, Cyprien³; Mpunga, Tharcisse²

¹Geisel School of Medicine; ²Butaro District Hospital / Ministry of Health;

³Partners In Health / Inshuti Mu Buzima

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Background Despite the rising burden of cancer, opportunities for global health education (GHE) post-residency are lacking in hematology and oncology (HO). The Geisel School of Medicine at Dartmouth University (GSMD) in New Hampshire, USA piloted an elective 4-week rotation in Rwanda for HO Fellows enrolled in US programs. The goals are to expose Fellows to a wider spectrum of disease states, improve clinical acumen and cultural sensitivity, and learn about health delivery in low-resource countries, while facilitating educational exchange between US Attendings and Rwandan medical staff in a multi-directional learning paradigm.

Methods In partnership with the Rwandan Ministry of Health and Partners In Health/Inshuti Mu Buzima, GSMD created a one-month elective rotation at the Butaro Cancer Center of Excellence (BCCOE) at Butaro District Hospital in northern Rwanda. HO Fellows applied to participate and work at BCCOE under direct supervision by GSMD HO faculty and BCCOE physicians. Through care teams selected by BCCOE leadership, participants provided mutual exchange of experiences on inpatient and outpatient cancer management, including diagnostic challenges and chemotherapy administration in a resource-limited setting, through bedside teaching, didactic lectures, and weekly conference calls with several international institutions. Fellows and Attendings are evaluated by Rwandan staff using standard US clinical competencies and customized evaluations to include topics specific to this setting. Evaluations are returned to the HO Fellowship coordinator and data is compiled and analyzed by the investigators.

Results This 4-week elective has been conducted twice in the first year. Two HO Fellows gained exposure to advanced cancer presentations, including HIV-related malignancies, sarcomas, and advanced gestational trophoblastic disease; learned and taught standardized oncologic staging and locally developed treatment pathways; and gained confidence to help guide medical decision-making within the Rwandan health care system. Fellows and faculty provided bedside teaching on daily rounds, and each gave 2–3 didactic presentations per month on topics like Cutaneous T-cell Lymphoma and oncologic emergencies. Analysis of the data will be complete by summer 2017.

Conclusion This presentation shows the preliminary outcomes of the first year of a multidirectional education program between GSMD and the BCCOE in Rwanda. This unique elective in global oncology provides many benefits to HO fellows, patients, cancer care providers in Rwanda, and US faculty sub-specialists. This on-going program is an essential component of a multifaceted approach to address global health disparities in oncologic care promoting a dynamic exchange of ideas regarding patient care, quality improvement

PRESENTATION

GENETICS/
EPIGENETICS
& OTHER
ABSTRACTS

13:30–14:30

Friday

10 November

Chambuso, Ramadhani

HIV/HPV CO-INFECTION AND SPECIFIC *DRB1,*DQB1 HUMAN LEUCOCYTE ANTIGEN CLASS II ALLELES INFLUENCE CERVICAL CARCINOMA DEVELOPMENT

Chambuso, Ramadhani¹; Kaambo, Evelyn¹; Williamson, Ana-lise^{1,2}; Ramesar, Raj^{1,2}; Gray, Clive^{1,2}

¹University of Cape Town; ²National Health Laboratory Service

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Background Women with HIV/HPV co-infection progress relatively rapidly to invasive cervical cancer, however, others don't regardless of HAAT use or CD4+ T cell count. Identifying host immunogenetic variations is an important aspect for genomic profiling and molecular targeted prevention to improve management of the disease.

Methodology We analyzed 208 HLA II alleles *DRB1 and *DQB1 after molecular characterization using PCR based, sequence-specific oligonucleotide primers for low and high resolution DNA-HLA II typing from cancer cases and age-matched non-cancer controls, both with known HIV/HPV co-infection status in a case control study conducted in the Western Cape, South Africa. We used whole blood for HIV antibody test and HLA II typing, while the tissue specimen used for HPV testing. Test statistics were significant if $p < 0.05$.

Results We identified DRB1 *11:02 allele with high allele frequency in HIV/HPV co-infected women and significantly associated with cervical cancer (OR 3.8, 95% CI 3.4–4.1, $p < 0.001$). In addition, a high protective effect was found for DQB1 *06:02 and *02:02 alleles, however, there was no statistical significant association between HIV/HPV co-infection and cancer clinical stage ($p = 0.21$). Furthermore, all homozygous alleles in *DRB1 and *DQB1 genomic loci were from HIV/HPV co-infected women with keratinized squamous cell carcinomas. Moreover, there was no association found between HLA II allele haplotype frequencies and cancer clinical stage in relation to HIV/HPV co-infection ($p = 0.089$).

Conclusion Specific HLA II alleles in women with HIV/HPV co-infection influence early development of cervical cancer. Immunogenetics analyses reveal new potential targets for cervical cancer prevention in HIV/HPV co-infected population.

PRESENTATION

Chasimpha, Steady

ESSENTIAL TNM: INTRODUCTION AND RESULTS OF FIELD TRIALS IN AFRICA

TERMINOLOGY & ESSENTIAL TNM

14:40–16:30
Wednesday
8 November

Chasimpha, Steady¹; N'da, Guy³; Chokununga, Eric²; Liu, Biying⁴; Parkin, Max^{4,5}

¹Malawi National Cancer Registry; ²Zimbabwe National Cancer Registry;

³Registre de Cancer d'Abijan; ⁴INCTR African Cancer Registry Network;

⁵CTSU University of Oxford

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Background Essential TNM is a simplified version of the TNM staging system that is designed to be useable by cancer registrars extracting case records for population-based cancer registries (PBCR) particularly in low and middle income countries (LMIC). We report some preliminary results from three field trials in cancer registries in sub Saharan Africa

Methods 50 cases of each of four cancers (colon-rectum, breast, and cervix, prostate) were drawn at random from the database of the participating registries. They were asked to trace the case notes, and then:

1. Tumour registrar to code stage of disease using Essential TNM
2. A clinical oncologist to stage the same cases, using the full TNM

Results It proved difficult to trace the old case records, especially in Malawi and Zimbabwe, where only 135 (two thirds) could be staged, compared with 93% in Cote d'Ivoire.

The level of agreement in the derived Stage (I–IV) between that based on Essential TNM (cancer registrar) and TNM (clinician) was modest, especially in Blantyre. In general, we found that the stage based on Essential TNM was lower than that based on the clinician's opinion. In Malawi, and to a lesser extent, Zimbabwe, the cancer registrar did not record the presence of metastases (M+) in many instances in which the clinician did (M1).

We observed a minor problem in using the flow chart for cervix cancers in Cote d'Ivoire, where 6 cases were judged to have Regional lymph node (R+) AND an extensive primary tumour (A2), and should be allocated to Stage IV.

Conclusions Essential TNM has the potential to be a valuable tool for cancer registries in LMICs. However, these preliminary results suggests that the registrars would need more training in recognising terminology relating to tumour spread – for example, the presence (or not) of metastatic disease.

POSTER

WELCOME RECEPTION AND POSTER SESSION ONE

16:30–18:00

Tuesday
7 November

Chaussard, Martine

P041 | DEVELOPING LOCALLY RELEVANT, STRATEGIC AND EVIDENCE-BASED EDUCATION MATERIALS FOR PATIENTS AND CAREGIVERS: EXPERIENCE FROM ETHIOPIA, KENYA AND UGANDA

Chaussard, Martine¹; Drope, Jacqui¹; Lettenmaier, Cheryl²; Stauffer, Paula²; Nega, Sofnias³; Schryer-Roy, Anne-Marie⁴

¹American Cancer Society; ²Johns Hopkins Center for Communication Programs; ³Qayana Communications; ⁴Communications, Public Relations and Public Health Consultant

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Objective The American Cancer Society (ACS) and Johns Hopkins Center for Communication Programs (JHU-CCP) partnered with the governments of Ethiopia, Kenya and Uganda, as well as local hospitals and civil society organizations, to develop locally relevant educational materials for cancer patients and their caregivers.

Educational materials can inform patients and caregivers about the disease and help them navigate the complex emotions associated with a cancer diagnosis. When tailored to the local context, they can counter stigmatizing misperceptions and offer hope for families affected by cancer. Research also suggests that patients who feel supported and informed have better clinical outcomes.

Methods The project teams used the P-Process, a research-based approach developed by the JHU-CCP to plan strategic and evidence-based health communications. Key materials from the ACS library were used as a content base for adaptation. In each country, formative research was conducted to understand gaps in knowledge, perceptions, beliefs and practices about cancer: its causes, symptoms, prognosis and treatment. Local cancer control stakeholders designed the communication strategy by identifying key audiences, setting communication objectives, and selecting appropriate formats for materials. Materials were created, designed and translated locally, and were pre-tested with their intended audiences. Stakeholders and medical experts from each country and ACS finalized the materials through a technical review.

Results The cancer education materials include illustrated booklets for patients and caregivers, as well as flipcharts and communication tip sheets for health providers and members of local cancer organizations to facilitate patient education. The materials are available free of charge to public hospitals across each country and to non-profit organizations, like hospices, that regularly provide patient education. The cancer education materials, as well as a toolkit to guide similar efforts in other countries, are available online for adaptation. Civil society organizations and ministries of health partnered to launch the materials in early 2016 and train health care providers and educators working in and around national referral hospitals (where cancer treatment is offered) to effectively use the materials.

Conclusions In many lower-income countries, knowledge about cancer is still very limited – what causes it, how it is diagnosed and treated, and how to cope with the disease. Far too often, misperceptions about cancer can cause delays in diagnosis and treatment and feelings of isolation for patients and their caregivers. These materials will contribute to improving patients' and caregivers' experience and provide them with the information they need to follow through with treatment.

POSTER

WELCOME
RECEPTION
AND POSTER
SESSION ONE
16:30–18:00
Tuesday
7 November

Chen, Wenlong Carl

**P068 | THE JOHANNESBURG CANCER STUDY (1995–2016):
DESCRIPTION OF A RESOURCE FOR EPIDEMIOLOGICAL,
SEROLOGICAL AND GENETIC CANCER RESEARCH IN BLACK SOUTH
AFRICANS**

Chen, Wenlong Carl^{1,2}; Sengayi, Mazvita^{1,2}; Urban, Margaret I.²; Babb de Villiers, Chantal^{1,3}; Sitas, Freddy^{1,4,5}; Singh, Elvira^{1,2}

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About a quarter of South Africans will develop a cancer in their lifetime. In western countries, up to 80% of cancers are attributed to environmental and lifestyle risk factors such as tobacco use, alcohol consumption, parity, infectious agents including HIV and HPV, and at least half of these are modifiable. Cancer in South Africa is an ongoing and increasing public health problem. The dearth of epidemiological and genetic data on cancer risks in African populations poses a significant challenge to understanding African/local cancer risks. The Johannesburg Cancer Study (JCS) at inception aimed to examine whether risk factors identified for cancers in Western countries apply to South African black patients.

Newly diagnosed cancer patients were recruited over 22 years, with informed consent, from two tertiary academic hospitals in Johannesburg, from 1995–2016. Over 90% of all included cancers were confirmed by histopathology. Lifestyle and demographic information was collected from all study participants using an interviewer-administrated questionnaire. Data available include age, gender, level of schooling, place of birth and residence, type of fuels used, occupation, tobacco use, alcohol use, marital status, number of lifetime sexual partners, hormonal contraception use and HIV status at time of interview. Whole blood and serum samples are available for close to 90% of all study participants. The JCS received clearance from the Human Research Ethics Committee (Medical), University of the Witwatersrand.

Twenty-five thousand patients with newly diagnosed cancer were recruited.: sixty-six percent were female. The top five cancers in men were oesophageal, lung, Kaposi sarcoma (KS), prostatic and colorectal cancers. In women, the five most common cancers were of the cervix, breast, KS, oesophagus and ovary. 37% of participants were 'ever' smokers, 41% alcohol consumers and 24% were HIV positive.

The JCS is the largest collection in Africa of cancer patient biological samples with supporting risk factor data. The JCS has contributed to understanding the role of HIV, KSHV, HPV, smoking, alcohol and contraception on several leading and emerging cancers.

The JCS is under the curatorship of the National Cancer Registry of South Africa; and in collaboration with several research groups, both local and international, the aetiology of the common cancers seen in South Africa continue to be investigated. Opportunities for further collaboration are available.

PRESENTATION

Cherniak, William

FROM HPV VACCINATION TO ADVANCED CANCER CARE: A FREE OPEN-ACCESS COMPREHENSIVE CERVICAL CANCER MODULE FOR THE WORLD

**SITE SPECIFIC
CANCERS
& OTHER
ABSTRACTS**

13:30–14:30

Thursday

9 November

Cherniak, William^{1,2,4}; Saraiya, Mona³; Senkomago, Virginia³; Flannigan, John⁴
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Background Cervical cancer is a preventable and easily treated disease in early stage, but is the second leading cause of cancer death in women world-wide. It disproportionately affects women from lower socioeconomic categories, especially those living in rural regions. The Field Epidemiology Training Program (FETP), housed within the Division of Global Health Protection (DGHP) at the U.S. Centers for Disease Control and Prevention (CDC), partners with over 70 countries around the world to provide intensive training for local participants in public health arenas. Current training in the FETP spans the breadth of infectious disease, and more recently has included non-communicable diseases. As more has been learned about cervical cancer, its epidemiology, and cost-effective ways to prevent, screen, diagnose and treat the disease, interest has grown from partner states to have specific training across the spectrum of illness, from prevention to treatment. This module seeks to address this critical gap in a novel and innovative fashion.

Methods More than ten staff members at the US National Cancer Institute, Center for Global Health collaborated with colleagues at the CDC over a nine-month period. An initial outline was developed that incorporated the breadth of disease from basic science and epidemiology about HPV through primary, secondary and tertiary prevention. Each section was developed by an individual or group of authors, and was coordinated by a single editor. The sections were compiled and linked together with both a clinical and public health vignette. These were reviewed in an iterative process by additional staff members at the CDC and NCI, and feedback incorporated for final revisions.

Conclusions This new module combined the expertise of the US National Cancer Institute with the CDC to focus specifically on cervical cancer, following in a logical and comprehensive review that provides education and training through both didactic material and specific case examples from programs around the world. It incorporates real experiences from public health officers at the Kenyan Ministry of Health around cervical cancer and can be used to assist in planning for similar initiatives. The iterative process of creating this module has produced a single unified and comprehensive document. This document will be available for free in an open-access fashion to be used by medical or public health educators, as well as non-governmental organizations, ministries of health and other agencies seeking to better understand cervical cancer and/or develop their own programs to combat the disease.

POSTER

WELCOME
RECEPTION
AND POSTER
SESSION ONE

16:30–18:00

Tuesday
7 November

Chiahemba, Moses

P147 | AWARENESS AND LEVEL OF EDUCATION AS PREDICTORS OF BREAST AND CERVICAL CANCER SCREENING AMONG WOMEN IN MAKURDI METROPOLIS

Chiahemba, Moses¹; Igbende, Dorothy Aumbur¹; Iniembe, Mson¹;
Terwase, Joyce Mcivir¹; Mzer, Terdoo Emmanuel¹
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The study examined awareness and level of education as predictors of breast and cervical cancer screening among women in Makurdi Metropolis. Prediction design was adopted for the study. A total of 222 women were selected as participants with age range, 23 to 57 years ($M = 2.87$, $SD = 1.26$) through accidental sampling technique. Data was collected using Cancer Awareness Scale (CAS) and Breast and Cervical Cancer Screening Test (BCCST) with the Cronbach's Alpha of .90 and .89 respectively. Three hypotheses were tested using multiple regression analysis. The result of the study showed that awareness of women in Makurdi metropolis significantly predicts their response to breast and cervical cancer screening $\beta = .703$; $P < .01$. Also, level of education does not predict the response of women in Makurdi to Breast and cervical cancer screening $\beta = -.020$; $P > .05$. Lastly, Awareness and Level of Education of women in Makurdi Metropolis jointly predict their response to Breast and Cervical Cancer Screening $R = .705$, $R^2 = .497$ $F(2,215) = 106.184$; $P < .01$. It was therefore recommended that the Government and Non-Governmental Organizations (NGOs) should create awareness through workshops, Rallies and sensitization programs on Radio Stations as it significantly predict cancer screening.

POSTER

WELCOME RECEPTION AND POSTER SESSION ONE

16:30–18:00

Tuesday

7 November

Chibuzo, Ijeoma

P016 | PSA CUT-OFF VALUE FOR NIGERIAN MEN

Chibuzo, Ijeoma¹; Kalejaiye, David¹; Takure, Augustine^{1,2}; Adebayo, Sikiru^{1,2}; Okeke, Linus^{1,2}

¹University College Hospital; ²University of Ibadan

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Introduction Black men have been reported to have higher Prostate specific antigen (PSA) readings and secrete more PSA per gram of prostate adenomatous tissue. Higher age-specific PSA values and lower PSA density cut-offs have been recommended in Nigerian men. The PSA cut-off that should be used in our environment to distinguish between benign prostate enlargement (BPE) with or without prostatitis and prostate cancer (cap) is not known.

Aim The study aimed to ascertain the PSA cut-off with the most sensitivity for detecting cap amongst Nigerian men.

Methods It was a hospital-based retrospective study conducted at the Urology division of the University College Hospital, Ibadan. Two hundred and twenty one (221 patients had prostate biopsies over a 4 year period between 2012 and 2016. Histology reports of 110 could be retrieved and were analysed. Various PSA cut-offs (4 – 1000ng/ml) were interrogated with a receiver-operating characteristic curve and PSA values with significant associations ($p < 0.05$) subjected to logistic regression.

Results The mean patient age was 70 (SD, 11) years. The mean PSA was 798.12 (SD, 2529) ng/ml ranging between 0.08 and 17,200 ng/ml. After exclusion of those without histology results, the mean PSA of those with BPE with or without prostatitis was 68.6 (SD, 71.4) ng/ml ranging between 2 and 273 ng/ml while the mean PSA of those with cap was 1342.7 (SD, 3031.6) ranging from 2 to 14,240 ng/ml. No patient with cap was asymptomatic. The indications for the prostate biopsies were predominantly elevated PSA readings (80.1%) and abnormal digital rectal examinations [DRE] (54.9%). The specificity, sensitivity, positive predictive value and area under the curve (AUC) of DRE were 33.33%, 88.71%, 69.62% and 0.64 respectively. It identified 76% of tumours of intermediate and poor prognosis Gleason grade groups. A PSA cut-off of 50 ng/ml was the most statistically significant cut-off with a poor AUC however, of 0.3 (OR= 0.73, CI: 0.009; 0.616 and $p = 0.016$).

Conclusion In Nigerian men, DRE is a better test than PSA to distinguish between benign and malignant prostate lesions. When PSA is used, a cut-off of 50 ng/ml is a more appropriate predictor of cap.

POSTER

WELCOME RECEPTION AND POSTER SESSION ONE

16:30–18:00

Tuesday

7 November

Chibuzo, Ijeoma

P042 | FACTORS AFFECTING HEALTH-RELATED QUALITY OF LIFE OF PATIENTS WITH BREAST CANCER

Chibuzo, Ijeoma¹; Ademola, Adeyinka^{1,2}; Ayandipo, Omobolaji^{1,2}; Adejumo, Adebayo²; Jegede, Ayodele²; Ogundiran, Temidayo^{1,2}
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Introduction Health-related Quality of Life in breast cancer patients affects disease outcomes. Various factors affect the quality of life of these patients. Some of these factors are modifiable.

Aims A multi – dimensional study was conducted to ascertain the factors affecting the quality of life (QoL) domains in breast cancer patients.

Methods Demographic and validated questionnaires (EORTC – QLQ C30, EORTC - BR23 and Janis Field Feeling of Inadequacy Scale) were used. Likert scales assessing attitudes to various aspects of the disease and care were administered. The patients were grouped into two categories: Cat I (those yet to receive treatment) and Cat II (those who have had mastectomy, chemotherapy, radiotherapy and/or hormonal treatment). Chi squared, ANOVA, linear or logistic regression and partial correlation were used to evaluate relationships.

Results 168 patients were interviewed, aged 52 (SD, 11 years), ranging between 30 and 82 years. They were predominantly low – income earners and married women. The global health score (QL2) was quantitatively but not significantly higher among women in Cat I than Cat II. Married women had higher emotional function, and a significantly better quality of life, self-esteem and body image. Fatigue was the most troublesome symptom experienced. A rising average symptom score, which negatively correlated with the QL2, was significantly increased by symptoms of fatigue and pain.

The patients were unhappy with how access to health services, process of hospital care, chemotherapy, mastectomy and radiotherapy had affected them. Chemotherapy was the treatment option assessed by the Likert responses to affect the women most negatively. Assessment of cultural beliefs of the role of the female breast and the consequences of a mastectomy showed a poor knowledge base among the patients, irrespective of age, occupation or education. Post mastectomy, the QL2 and body image were significantly higher among those who used breast padding as camouflage, when compared to those who had not.

Institution of or type of treatment had no significant effect in the QL2.

Conclusion The quality of life of patients with breast cancer is affected significantly by fatigue, pain, and the emotional support of the homestead. The healthcare giver would therefore, need to prioritise control of these symptoms and include spouses and significant care providers in counseling sessions, to improve their ability to provide more emotional support to the patients, and through this, the patients' quality of life.

POSTER

WELCOME RECEPTION AND POSTER SESSION ONE

16:30–18:00

Tuesday
7 November

Chibuzo, Ijeoma

P043 | “AM I GOING TO BECOME ONE–BREASTED MONSTER?”

Chibuzo, Ijeoma^{1,2}; Ademola, Adeyinka^{1,2}; Ayandipo, Omobolaji^{1,2};
Adejumo, Adebayo²; Jegede, Ayodele²

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Introduction and Objectives The incidence of breast cancer is on the rise among Nigerian women with late presentation still the hallmark despite existing awareness campaigns. Cultural norms and fads have been implicated. This study focussed on looking at breast cancer from the perspective of the patient through focussed group discussions.

Method A semi-structured interview was conducted according to Kreuger’s format. Seven women with breast cancer at different stages of therapy were interviewed in two different sessions. The conversations were audio – taped with their consent.

Results The women aged between 42 and 67 years were from different social strata. They attested to receiving initial advice from relatives and spouses to not seek medical attention for breast cancer, which to them, is essentially a spiritual ailment. This belief was not dependent on educational status. In addition, mastectomy was advised against as it was deemed dangerous and an orthodox medicine for a non-orthodox pathology.

They attested to the disfigurement and psychological impact that mastectomy had had on them. All who had mastectomy narrated the psychological trauma that they experienced, and the role close relatives played in reminding them that they were still attractive. Narrations of the side-effects of chemotherapy revealed that hair loss and gastrointestinal upset were the most distressing. They stressed how emotional and physical support had helped them cope with the therapies. The lack of insurance coverage and enormity of the financial implication was acknowledged.

The importance of support from the spouse, and family as a whole, in coping with the diagnosis, course of the disease, treatment side-effects was recognised. The psychological and financial challenges faced when the spouse was not supportive were underscored.

Sources of Types I and II delays in breast cancer presentation were enumerated. Rapid and widespread flow of erroneous information was implicated in Type I delay. It was presumed that fear of stigmatisation was also contributory.

Perception and attitudinal changes to breast cancer and its treatment occurred during the discussions between the women. They appreciated a routine forum to discuss issues faced so far.

Conclusion A dearth of community awareness for breast cancer still exists. Regular breast cancer focussed groups may improve the outlook women with breast cancer have of the disease, and the authenticity of information disseminated to the public through them.

PRESENTATION

CANCER ADVOCACY & OTHER ABSTRACTS

11:00–12:30

Thursday

9 November

Chibuzo, Ijeoma

THE FINANCIAL FACE OF BREAST CANCER

Chibuzo, Ijeoma¹; Adeolu, Adeyinka^{1,2}; Ayandipo, Omobolaji^{1,2}; Adejumo, Adebayo²; Jegede, Ayodele²; Ogundiran, Temidayo^{1,2}
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Introduction Nigeria is a developing country. More than 70% of her populace lives below the poverty line. Despite this, health care funding in Nigeria is largely out-of-pocket. Females in developing countries have less access to capital resources and account for the majority of the poor, the unemployed and the poor employees. The National Health Insurance Scheme, at the time of this study, did not cater for cancer or cancer-related therapy.

Breast cancer is the leading cause of cancer-related mortality in Nigeria. Nigerian women with breast cancer predominantly present late. This has been attributed to financial constraints, in addition to awareness deficits.

Aims This study aimed to assess the level of financial difficulty experienced by Nigerian women, and its effect on presentation and quality of life of patients with breast cancer.

Methods Patients with breast cancer at the Oncology division of the University College Hospital, Ibadan were interviewed using the EORTC QLQC30 and BR23 questionnaires. Financial difficulty was assessed as a single item. Data was analysed with SPSS 20. Tests of association used were the chi-square and analyses of variance, Linear and logistic regression were used where appropriate. Significant p value was ≤ 0.05 .

Results The average costs incurred in the initial and continuing phase of care (including follow-up) for breast cancer amounted to N 5,243,360.00 (\$11, 651.91). Chemotherapy, radiotherapy, surgery and hormonal therapy constituted 39, 12, 7 and 1% of the cost respectively. The patients' perceived quantifiable losses, ranging from missed opportunities or lost property, amounted to 32% of that cost. Funding was out-of-pocket. 59.5% of patients presented late with a modal stage of IIIB. Low income earners were more likely to present late ($R^2 = 0.071$ and $p = 0.0001$). Late presentation did not depend on the age, occupation, level of education, marital status, initiation or type of treatment. As financial difficulty increased, the patients lost a positive outlook for the future ($OR = -0.309$, $CI: -0.433; -0.146$ and $p = < 0.0001$) and their quality of life reduced ($r = -0.351$, $CI: -0.271; -0.108$ and $p = < 0.001$). A positive outlook was necessary to improve the quality of life of these patients ($OR = 0.456$, $R^2 = 0.226$, $CI: 0.190; 0.350$ and $p = < 0.0001$).

Conclusion The financial burden of breast cancer needs to be reduced to improve disease outcomes and quality of life amongst Nigerian women with breast cancer.

POSTER

POSTER
SESSION TWO
16:30–18:00
Thursday
9 November

Chidebe, Runcie C.W.

P339 | BREAST CANCER NAVIGATION AND PALLIATIVE PROGRAMME (BCNPP): REDUCING THE INCIDENCE OF STAGE III OR IV BREAST CANCER IN NIGERIA

Chidebe, Runcie C.W.¹; Orjiako, Tochukwu C.²; Ebigbo, Peter Onyekwere¹
¹Project Pink Blue – Health and Psychological Trust Centre; ²University of Nigeria

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Background Many women in Nigeria present with metastatic breast cancer (MBC) as a result of critical factors such as: poor referral system, cultural beliefs, understandable definitions of cancer, lack of access to healthcare facilities and patient's perception. To increase early detection and reduce the incidence of MBC, Project PINK BLUE launched Nigeria's first telephone centre for cancer care, the Breast Cancer Navigation and Palliative Programme (BCNPP).

Aim To empower women at risk of, or living with metastatic breast cancer and to reduce incidence of stage III or IV breast cancer.

Strategy Eighteen (18) retired midwives/cancer survivors and two social workers were recruited for breast cancer navigation and palliative care from one hundred and fourteen (114) participants of the BCNPP sensitization forum for the six (6) area councils of Abuja. Collation of breast cancer diagnostic centres, healthcare facilities and patient's support centres were entered in the navigation map; while, H.P. Freeman Patient Navigation Institute and Multinational Association of Supportive Care in Cancer will provide training. Stakeholder meetings were held to ensure buy-in by the cancer control community and other key stakeholders.

Programme The launch of the BCNPP provides a dedicated telephone line for the general public to call for diagnosis, treatment, support, cancer survivors' assistance, and palliative care to our onsite telephone centre; while the 18 retired midwives/cancer survivors will work in their various communities providing home-based palliative care for metastatic breast cancer patients. Project PINK BLUE team stimulates national policy process for advanced breast cancer through advocacy.

Outcomes/What was learned BCNPP was assessed to be Nigeria's first telephone centre for cancer care and the Federal Ministry of Health is partnering with the programme; while twenty three (23) key stakeholders who were engaged in the strategic planning meeting used the SWOT analysis on BCNPP. They rated BCNPP success above average and inaugurated a steering committee. It is expected that access to cancer information, resources, and referral for women at risk of breast cancer will increase; while quality of care for women diagnosed of advanced breast cancer will increase by 20% by the end of June 2017.

This programme is supported by a grant from the Union for International Cancer Control (UICC) and Pfizer Oncology.

POSTER

Chimiczewski, Przemyslaw

P148 | CAUSES OF FAILURE IN THE TREATMENT OF VULVAR CARCINOMA

**WELCOME
RECEPTION
AND POSTER
SESSION ONE**

16:30–18:00

Tuesday

7 November

Chimiczewski, Przemyslaw¹; Telka, Ewa; Cieslak-Stec, Malgorzata; Szczepanik, Krzysztof

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Introduction Vulvar carcinoma belongs to the group of rare gynecological cancers. It represents 3- 5% of all female genital carcinomas. Every year, in Poland about 300-400 new cases of vulvar cancer are detected. It occurs in women over the age of 65, but it is also more common in younger women.

Aim The aim of the study is to evaluate the causes of failure in the treatment of vulvar carcinoma in patients after radical surgery followed by radiofrequency or radio-chemotherapy.

Material and Methods The subject of the study was a group of 48 patients with vulvar carcinoma treated at the Cancer Centre, MSC Institute in Gliwice, between 2010 and 2016. These patients were after surgical treatment according to the protocol of vulvar carcinoma -they were operated by means of a Hacker method, so called a 3-cut technique to remove the whole vulva and inguinal lymph nodes. Afterwards the patients were treated with complementary radio-chemotherapy or radiotherapy with the dose of 50 Gy on the inguinal lymph node and iliac lymph node area with the boost on the iliac lymph node.(up to 60 Gy by IMRT in the absence of radical treatment and / lymph node metastases). EORTC / RTOG scale was used to evaluate the therapeutic toxicity. The treatment efficacy was analyzed by TK and MR imaging and the survival analysis was assessed using the Kaplan-Meier model.

Results In the case of 8 patients radiotherapy was not completed due to early radioreaction, 5 patients were diagnosed with an infection which caused complicated postoperative wound healing. In the case of the above mentioned patients radiotherapy had to be postponed.

The advanced age of the patients and coexisting illnesses also caused pauses in the complementary treatment of 8 patients.

In 9 patients local recurrence was observed in the 12–16 months following the treatment.

Conclusions

- 1) Extensive surgical procedures and frequent complications in wound healing, especially after inguinal lymphadenectomy, cause the delay of the onset of radiotherapy.
- 2) The advanced age of patients and concomitant diseases are common causes of radiotherapy interruptions.
- 3) Delayed onset of thaw radiotherapy and radiotherapy interruption are the causes of vulvar carcinoma recurrence.

POSTER

WELCOME RECEPTION AND POSTER SESSION ONE

16:30–18:00

Tuesday

7 November

Chinula, Lameck

P149 | ADDRESSING THE GYNAECOLOGIC ONCOLOGY WORKFORCE CRISIS IN MALAWI

Chinula, Lameck^{1,2,3,4}; Chiudzu, Grace^{2,3}; Chunda, Reginald^{2,3};
Tang, Jennifer H.^{1,2,3,4}; Hicks, Michael^{4,5}; Parham, Groesbeck P.^{4,5}

¹UNC Project; ²Kamuzu Central Hospital; ³Malawi College of Medicine;

⁴University of North Carolina; ⁵University Teaching Hospital

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Introduction As low-cost cervical cancer screening programs are implemented across sub-Saharan Africa (SSA), more women will present with early stage disease, a high percentage of which can be cured with radical surgery, alone. However, there is a severe shortage of gynecologists in SSA who have surgical oncology skills. In order to prevent the creation of large reservoirs of women with “detected but untreated early stage disease”, we implemented a novel competency-based training curriculum to rapidly-build capacity for the surgical treatment of early stage cervical cancer in Lilongwe, Malawi.

Methods During an intense 5-day onsite practicum we used high-volume repetition, active intraoperative participation, surgical deconstruction and mental imaging to teach general gynecologist how to safely and effectively perform a radical abdominal hysterectomy and pelvic lymphadenectomy. This was accompanied by self-directed learning followed by clinical mentorship through e-based communication and quarterly on-site visits by the master trainers.

Results Between June 2015 and December 2016, 24 patients underwent radical hysterectomy and pelvic lymphadenectomy. A majority (70%) of the patients had cervical cancer stage 1B1 disease. Eight patients were operated on during the 5-day onsite practicum and at the end of this phase, the apprentice safely and effectively performed the intended surgical intervention. The apprentice independently performed the procedure on 16 patients between and during quarterly mentoring visits. Major surgical complications were rare: one patient had severe hemorrhage and another a vesicovaginal fistula that resolved with continuous bladder drainage. Surgical treatment of early stage cervical cancer is now offered for the first time as a routine clinical service in Lilongwe, Malawi.

Discussion The best evidence for successful development of surgical skills in low-income settings supports a paradigm of in-country training by local and/or visiting experts, where specialists are trained in the environments where they will actually practice. Teaching a limited repertoire of oncologic surgical procedures, aimed at the cancers in a country that have the highest incidence and are most amenable to surgical cure, is an approach that can save lives and sustain and reproduce itself within the reality of its context.

POSTER

WELCOME RECEPTION AND POSTER SESSION ONE

16:30–18:00

Tuesday

7 November

Chokunonga, Eric

P069 | SOLID TUMOURS OF CHILDREN AND ADOLESCENTS IN HARARE, ZIMBABWE 1990-2014

Chokunonga, Eric¹; Borok, Margaret¹; Chirenje, Z Michael¹; Makunike-Mutasa, Rudo¹; Nyakabau, Anna Mary¹; Chitsike, Inam¹; Parkin, Donald Maxwell²
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Data from 25 years of cancer registration in Harare (Zimbabwe) are used to study the incidence and pattern of occurrence of solid malignant tumours in black (African) children and adolescents. Although childhood and adolescent cancers are rare conditions worldwide, the Zimbabwean registry has recorded and amassed sufficient data of good quality that has enabled us to undertake this important study, which has provided a rare insight in population-based childhood cancer incidence in Africa. The study period coincides with that of the rapid increase and later maturation of the HIV-AIDS epidemic in Zimbabwe. The national rollout programme of anti-retroviral therapy began in 2004.

A total of 1334 solid malignant tumours were registered in black (African) children in Harare in the 25 year period (1990-2014), representing 72% of all malignancies in this age group (ages 0-19). These comprised 692 (52%) males and 642 (48%) females. The most common cancers in both sexes were Kaposi sarcoma (KS) 276 cases (15%) of all cancers, Nephroblastoma 174 (9%), CNS and miscellaneous intracranial and intraspinal neoplasms 150 (8%) and Retinoblastoma 109 (6%). The crude and cumulative incidence rates for all solid malignant tumours in the 0-19 year age group were 89.8 and 1777.3 per million respectively.

Overall, there was no significant trend in incidence rates in this age group in the 25 year period, with the exception of Kaposi sarcoma (KS). The latter is a consequence of the epidemic of HIV-AIDS. The pattern of age-specific incidence rates shows that KS cases are related to both vertically transmitted HIV infection (with a peak of KS around age 5 years), followed by cases related to presumed horizontally acquired HIV infection, increasing throughout adolescence. The incidence rates of retinoblastoma and nephroblastoma in Harare were significantly higher than those observed in populations in Europe and the USA, while the rates of neuroblastoma were significantly lower.

PRESENTATION

Chuang, Linus

CERVICAL CANCER SCREENING CAPACITY IN AFRICA - A SURVEY OF AFRICAN ORGANIZATION FOR RESEARCH AND TRAINING IN CANCER (AORTIC) MEMBERSHIP

SITE SPECIFIC

CANCERS & OTHER ABSTRACTS

13:30–14:30

Thursday

9 November

Chuang, Linus¹; Hoan, Karina¹; Byrne, Maureen¹; Schmeler, Kathleen²; Randall, Thomas³; Denny, Lynette⁴

¹Icahn School of Medicine; ²Massachusetts General Hospital; ³MD Anderson Cancer Center; ⁴Groote Schuur Hospital

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Background Each year there are 500,000 cervical cancer cases and 230,000 deaths worldwide, and 85% of all cases occur in resource-limited countries. Although screening is widely available, these countries face unique challenges in providing adequate screening for cervical cancer.

Objectives We created a survey in conjunction with the African Organization for Research and Training in Cancer (AORTIC) in order to evaluate the cervical cancer capacity in Africa. The survey assessed available screening options throughout various healthcare settings, with the ultimate goal of identifying areas for targeted interventions going forward.

Methods The survey was emailed to all AORTIC members, soliciting responses from healthcare workers currently practicing in Africa. Responses were collected over a period of 3 months.

Results There were 183 responses from healthcare practitioners in 26 different African countries. 77.2% of responders worked in a public hospital/clinic while 15.4% of participants worked in a private setting. When asked about the availability of cervical cancer screening in their country, 19.9% of responders reported screening was well organized by the government, 33.7% believed screening was opportunistic, and 45.8% reported screening availability was limited. When examining responses by country healthcare expenditure, responders from countries who spend <5.5% of their GDP on healthcare reported 15.1% of screening was well organized by the government, 32.1% was opportunistic, and 51.9% was limited. For countries spending >5.5% of their GDP on healthcare, the rates of screening availability were 28.3%, 36.7%, and 35% respectively. When asked about specific screening methods available at their hospital/clinic, 78.3% of responders had pap-smear cytology and 27.1% had pap-smear with HPV cotesting available at their site. 56.6% of responders had visual inspection with acetic acid and 15.7% reported the availability of HPV primary testing.

Conclusions Nearly half of the AORTIC members surveyed reported limited availability of cervical cancer screening in their countries. Screening are more available in countries with health care spending more than 5.5% of their GDP. Although 78.3% of the responders reported use of pap test, more than half of the responders use visual inspection with acetic acid for cervical cancer screening. Large variations exist in both the degree of access and methods available for cervical cancer screening across different countries and healthcare settings in Africa. Using these data, future interventions can target settings with limited screening availability in attempt to detect cases earlier and ultimately lower the significant morbidity and mortality associated with cervical cancer in Africa.

PRESENTATION

NATIONAL CANCER CONTROL PLANS & OTHER ABSTRACTS

13:30–14:30

Friday

10 November

Chuang, Linus

CERVICAL CANCER TREATMENT CAPACITY IN AFRICA – A SURVEY OF THE AFRICAN ORGANIZATION FOR RESEARCH AND TRAINING IN CANCER (AORTIC) MEMBERSHIP

Chuang, Linus¹; Byrne, Maureen¹; Hoan, Karina¹; Schmeler, Kathleen²; Randall, Thomas³; Rebbeck, Timothy⁴; Denny, Lynette⁵

¹Icahn School of Medicine; ²MD Anderson Cancer Center; ³Massachusetts General Hospital; ⁴Dana-Farber / Harvard Cancer Center; ⁵Groote Schuur Hospital

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Background/Objectives: Each year there are 500,000 cervical cancer cases and 230,000 deaths worldwide, and 87% of the deaths occur in developing countries. Although comprehensive treatment is widely available here in the US, adequate treatment in Africa is hindered by limitations in treatment facilities, modalities, and healthcare infrastructure. We created a survey in conjunction with the African Organization for Research and Training in Cancer (AORTIC) to evaluate the cervical cancer capacity in Africa. The survey assessed the availability of cervical cancer treatments across various settings, with the ultimate goal of identifying areas for targeted interventions.

Disease/Procedure/Practice The survey was emailed to all AORTIC members using the SurveyMonkey website over a period of 3 months, and solicited responses from healthcare workers currently practicing in Africa.

Outcomes There were 183 responses from healthcare practitioners in 26 African countries. 72.4% of responders had access to a GYN oncology consultation and 67.1% had access to a medical oncology consultation daily. 45.2% of responders did not have access to external beam radiation and 52.2% did not have access to brachytherapy at their workplace, while 87.8% of responders had access to chemotherapy. Responders reported that 84.4% of their sites offered simple abdominal hysterectomy, but only 55.8% of offered radical hysterectomy as a surgical option for women undergoing hysterectomy for cervical cancer. When asked about surgical support services, 34.8% of responders said their site had access to blood products at all times, and 27.4% had frozen section.

Conclusions Chemotherapy is more widely available across African countries when compared to both radiation and surgery; however chemotherapy alone is not curative for cervical cancer. Previous reports have highlighted the dearth of radiation machines in Africa, as evidenced by the limited access to radiation therapies reported in our survey. Additionally, slightly less than half of our responders reported access to appropriate surgical treatment for cervical cancer, and even fewer had vital support services such as available blood products or frozen section. Our data can be used to target future interventions towards areas with the lowest reported treatment availability.

PRESENTATION

RADIATION & CHEMO- THERAPY

14:40–16:30

Thursday

9 November

Chuang, Linus

MANAGEMENT AND CARE OF WOMEN WITH INVASIVE CERVICAL CANCER: AMERICAN SOCIETY OF CLINICAL ONCOLOGY RESOURCE- STRATIFIED CLINICAL PRACTISE GUIDELINE

Chuang, Linus¹

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Purpose To provide evidence-based, resource-stratified recommendations to clinicians and policymakers on the management and palliative care of women diagnosed with invasive cervical cancer.

Methods ASCO convened a multidisciplinary, multinational panel of cancer control, medical and radiation oncology, health economic, obstetric and gynecologic, and palliative care experts to produce recommendations reflecting resource-tiered settings. A systematic review of literature from 1966 to 2015 failed to yield sufficiently strong quality evidence to support basic- and limited-resource setting recommendations; a formal consensus-based process was used to develop recommendations. A modified ADAPTE process was also used to adapt recommendations from existing guidelines.

Results Five existing sets of guidelines were identified and reviewed, and adapted recommendations form the evidence base. Eight systematic reviews, along with cost-effectiveness analyses, provided indirect evidence to inform the consensus process, which resulted in agreement of 75% or greater.

Recommendations Clinicians and planners should strive to provide access to the most effective evidence-based antitumor and palliative care interventions. If a woman cannot access these within her own or neighboring country or region, she may need to be treated with lower-tier modalities, depending on capacity and resources for surgery, chemotherapy, radiation therapy, and supportive and palliative care. For women with early-stage cervical cancer in basic settings, cone biopsy or extrafascial hysterectomy may be performed. Fertility-sparing procedures or modified radical or radical hysterectomy may be additional options in nonbasic settings. Combinations of surgery, chemotherapy, and radiation therapy (including brachytherapy) should be used for women with stage IB to IVA disease, depending on available resources. Pain control is a vital component of palliative care. Additional information is available at www.asco.org/rs-cervical-cancer-treatment-guideline and www.asco.org/guidelineswiki. It is the view of ASCO that health care providers and health care system decision makers should be guided by the recommendations for the highest stratum of resources available. The guideline is intended to complement but not replace local guidelines.

POSTER

Chukwuneke, Felix

P397 | SMOKELESS TOBACCO USE IN DIFFERENT FORMS MAY BE A RISK FACTOR TO DEVELOPING ORAL CANCER IN NIGERIA

Chukwuneke, Felix¹; Ekwueme, Christian¹; Onyejiaka, Nneka¹

¹University of Nigeria Teaching Hospital

**POSTER
SESSION**

TWO

16:30–18:00

Thursday

9 November

Correspondence ichiefn2002@yahoo.com

Objectives The aim of this study was to determine the trends in the number of cases associated with smokeless tobacco use amongst 169 oral cancer patients seen in Eastern Nigeria.

Patients and Methods We carried out a retrospective review of 169 oral cancers cases seen in three specialist hospitals in Eastern Nigeria over a 10-year period. The focus was on oral habits, use of tobacco, life style and socio-demographic data. Carcinoma of the gum, tongue, floor of the mouth, palate and other parts of the oral cavity (International Classification of Diseases [ICD], 9th revision, rubrics 141, 143–145) made up the oral cancer cases studied.

Results One hundred and sixty-nine cases were recorded. Ninety-two males (54.4%) and 77 (45.6%) females were affected giving a male-to-female ratio of 1.2: 1. The most common site was other sites of the oral cavity antrum/palate and buccal mucosa) which accounted for 39% of all the cases reviewed. Out of the 169 cases, 118 (70%) gave history of tobacco use which was statistically significant ($p = 0.0001^*$). Of the 118 oral cancer patients with history of tobacco use, smokeless tobacco was highest (78%).

Conclusion Smokeless tobacco use in Nigeria may be a risk factor to developing oral cancer. The fact that this risk factor is modifiable emphasizes the need for increasing awareness among the general public and policy makers as a first step in the prevention of its use and abuse.

POSTER

Chukwuocha, Ikechukwu

**P407 | CLINICO-PATHOLOGICAL PATTERN AND TREATMENT
OUTCOME OF SOFT TISSUE SARCOMAS IN ZARIA**

**POSTER
SESSION**

TWO

16:30–18:00

Thursday

9 November

Chukwuocha, Ikechukwu¹

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Objective Soft tissue sarcomas (STS) are encountered in Africans. However the desired multidisciplinary team approach to management of these tumours is often inadequate. Thus, the disease presents a great challenge to oncologists practicing in low resources settings. This study is to determine the clinico-pathological pattern and treatment outcome of soft tissue sarcomas seen in Ahmadu Bello University Teaching Hospital Zaria (ABUTH) Nigeria, and to highlight the burden of the disease in our population.

Patients and Methods This is a retrospective study of all cases of histologically confirmed soft tissue sarcomas treated and followed up for a minimum of 1 year at ABUTH, over a period of 15 years (January 2000 to December 2014). The demographic data, clinical features, histology, treatment and outcome were studied.

Results A total of 280 cases were studied, accounting for 5.7% of all malignancies seen within the study period. The age range of the patients was from 2 years to 112 years and the peak age-group of occurrence of the disease was 21 years to 30 years. The male to female ratio was 1.7:1. The delay period before presentation ranged from 3 months to 10 years. Average size of the tumour was 12cm. The lower limb was the commonest site of tumour, accounting for 35.7%. Most common histologic types were: Kaposi's sarcoma (26.4%), Rhabdomyosarcoma (22.7%), Dermatofibrosarcoma protuberans (10.3%). Majority of the patients (96.4%) presented with late stage of disease. Definitive surgery was amenable only in 35.7% of the patients (10% of them had complete excision). Chemotherapy was used in 77.9% patients. The most common chemotherapy regimen was Adriamycin/Dacarbazine-based, prescribed in 30.3% of the patients. One hundred and sixty two patients (57.9%) received external beam radiotherapy (82 patients had curative radiotherapy while 80 patients had palliative). The commonest dose/fractionation schedule was 50 Gray in 25 fractions over 5 weeks, applied in 30.9% of the cases. At one year of follow up, 17.1% of patients achieved complete remission, 33.6% had partial remission, 27.5% had disease progression while 21.8% had static disease. Histologically, complete remission was observed in 31.8% of patients with liposarcoma, followed by dermatofibrosarcoma protuberance (23%) and Kaposi sarcoma (20.3%).

Conclusion STS are prevalent in our setting. Diagnosis is late because majority of the patients present with advanced disease. Increased cancer awareness, education, early presentation, and improvement in the multidisciplinary framework for the management of soft tissue sarcomas would yield better treatment outcome in the region.

POSTER

WELCOME RECEPTION AND POSTER SESSION ONE

16:30–18:00

Tuesday
7 November

Cieslak-Stec, Malgorzata

P152 | SURGICAL TREATMENT OF VULVAR CARCINOMA – ELECTRO-RESECTION OF THE VULVA WITH INGUINAL LYMPHADENECTOMY – PRELIMINARY EVALUATION OF TREATMENT

Cieslak-Stec, Malgorzata¹

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Introduction Vulvar carcinoma belongs to the group of rare gynaecological cancers. It represents 3-5% of all female genital carcinomas.

Aim The aim of the study is to assess the efficacy of electroresection of the vulva combined with the inguinal lymphadenectomy as a method of surgical treatment in early clinical stages of FIGO IB-II.

Material and Method Between March 2016 and February 2017, 16 women in early stages of FIGO IB-II were operated in the Clinical Center of Woman and Child's Health, Oncological Gynaecology Department Zabrze. The patients were between 47 and 81 years of age. Surgical treatment was based on performing extensive electroresection of the vulva along with inguinal lymphadenectomy.

Results In 16 patients, the electroresection was uncomplicated. Patients were discharged home on the 7th or 8th day. Postoperative complications occurred in 2 patients who had massive lymphocystitis in the area after inguinal lymphadenectomy. The total duration of hospitalization for these patients were 12 days. In one patient where the medial cleavage margin was positive by postoperative histopathological examination, a radicalization was performed consisting of a wide cut of the described lesion. In 2 patients, postoperative radiotherapy was used because of the narrow margin (0.3 cm), with IMRT technique giving 50 Gy to the hip and inguinal nodes. One patient required treatment for lymph node metastases as described in the postoperative study (IMRT-treated patient was 50 Gy with a boost to the maxillary node area of up to 60 Gy.) One patient was diagnosed with local recurrence. This patient was treated with radiofrequency 50 Gy from boost up to 60 Gy on vulva infiltration with equal doses of cis-platin.

Conclusions

1. Electroresection of inguinal lymphadenectomy appears to be an effective surgical treatment for patients with the vulvar carcinoma. The absence of sutured skin tension results in better wound healing.
2. Electroresection of inguinal lymphadenectomy allows shorter hospitalisation (7 to 8 days postoperative hospitalization) compared to conventional surgical procedures, which significantly reduces the cost of treatment and allows less pain medication to be administered.
3. Effects of psychosexual and psychophysical factors (lack of sense of body mutilation) – after 10 weeks there is complete healing of wounds allowing the women to return to normal life.
4. Too short a time of observation does not allow us to draw definitive conclusions about the effectiveness of this surgical treatment method. Thus, evaluation of the results has an initial character.

POSTER

POSTER SESSION TWO

16:30–18:00
Thursday
9 November

Cimino, Francesco

P214 | EFFICIENCY OF BREAST AND CERVICAL CANCER SCREENING IN THE SOUTHERN AND MID REGIONS OF MADAGASCAR

Cimino, Francesco¹; Tsitohery Andriamampionona, Francine³;
Catalfamo Akbaraly, Cinzia¹; Sala, Elisa²; Miliarisoa, Pergaudine³;
Ratsimbazafy, Haingotiana Zoeline²; Laza, Odilon³

¹Fondation Akbaraly; ²ONG La Vita per Te; ³Université de Fianarantsoa –
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Background According to the International Agency for Research on Cancer (IARC), 84% and 53% of new cervical and breast cancer cases, respectively, as well as 88% and 58% of cervical and breast cancer deaths, respectively, occur in Low and Medium Income Countries like Madagascar. Regular screening is the most effective way to early diagnosis these cancers and to stop the burden.

Purpose This study aimed to assess the effectiveness of actions of breast and cervical screening performed by the Akbaraly Foundation and the NGO La Vita per Te in the Mid and Southern regions of Madagascar ; and to establish the socio-epidemiological profile of screened women during 2015 and 2016.

Methods With its Mobile Unit “Luisa” and its medical centers in Haute Matsiatra and surroundings, the Akbaraly Foundation and the NGO La Vita per Te carried out pap-tests and colposcopy, breast clinical, ultrasound examination and mammography.

Results During these two years, 4308 pap-tests were performed in 3855 women aged from 13 to 73 years old. Their mean age was 37,5 years old and the age group most involved in cervical screening, representing 26% of the study population, is between 36 and 45 years old.

- 65,7% of the women said they were in a couple and the average number of their sexual partners was 3.9.
- 89,15% of women had their cervical screening for the first time.

Positive lesions were found in 12.20% of cases. 430 colposcopic examinations were performed. About one hundred of cases were sampled for histologic examination. 7 cases of cancer (0.2%) were diagnosed. Precancerous lesions were treated by cryotherapy or LEEP.

Every woman underwent a clinical breast examination and has learned about breast self examination. Women with abnormal clinical breast examination had a breast ultrasound examination and 488 cases had a mammography confirmation. 10 positive cases were diagnosed.

In urban areas, several means of awareness campaign have proven their effectiveness such as media (22.5%), health staffs (21.2%), friends and families (20.8%) and events (24.2%), whereas in rural and peri-urban areas, partner associations (22.8%) and mobile units (66.8%) were more efficient.

Conclusion Routine screening and timely follow-up are effective ways to detect and to stop cancer. Haute Matsiatra and its surroundings have the opportunity to beneficiate from the Akbaraly Foundation’s and NGO’s actions. Nethertheless, public and private health structures must focus on health education to enhance women’s adherence to routine screening initiatives.

POSTER

WELCOME RECEPTION AND POSTER SESSION ONE

16:30–18:00

Tuesday
7 November

Cira, Mishka

P118 | KNOWLEDGE SUMMARIES FOR BREAST CANCER CONTROL: AN ASSESSMENT OF RELEVANCE AND UTILITY IN THE KENYA CONTEXT

Cira, Mishka¹; Zujewski, Jo Anne¹; Dvaladze, Allison²; Brand, Nathan R.¹; Vogel, Amanda L.¹

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Breast cancer is the second most common cancer in the world, the most frequent cancer among women globally, and a growing burden in low- and middle-income countries. In response to the need for effective, accessible, and comprehensive breast cancer control planning in limited resource settings, the Center for Global Health at the US National Cancer Institute (CGH/NCI), in collaboration with the Breast Health Global Initiative (BHGI), the Union for International Cancer Control (UICC), and the Pan American Health Organization (PAHO), developed a series of 14 brief publications, called Knowledge Summaries for Comprehensive Breast Cancer (KSBC). The KSBCs summarize evidence-based, resource-stratified guidelines for comprehensive breast cancer control planning in limited resource settings.

Kenya is a lower-middle income country in the East Africa region, with cancer ranking as the third leading cause of mortality. Among Kenyan women, breast cancer is the cancer with the highest incidence, and the majority of cases are diagnosed at late stages. To assess the relevance and utility of the KSBCs to Kenyan stakeholders, CGH/NCI conducted interviews and focus groups with members of key audiences for the KSBCs in Eldoret, Kijabe, and Nairobi, Kenya over the course of two weeks in March and April 2017. Participants included 2 health policy makers, 8 health care providers, and 9 breast cancer advocates. Participants were asked to review two KSBCs in advance of the interview or focus group. These semi-structured interviews and focus groups used open-ended questions to elicit opinions about the usefulness of the KSBC content, the relevance of the content to resource availability and local culture in Kenya, and recommendations for how to enhance the usefulness and relevance of the KSBCs and promote their uptake and application.

Participants found the resource-stratified approach to be comprehensive, useful, and culturally appropriate. They recommended tailoring the content and format of the KSBCs to each intended audience -- health policy makers, healthcare providers, and breast cancer advocates. Suggestions included graphics and an executive summary for policy makers, additional clinical information for healthcare providers, and plain language for breast cancer advocates. This presentation will highlight these findings, and share additional findings about strengths and areas of improvement for the KSBCs specific to the Kenyan context.

PRESENTATION

Clifford, Gary

EVALUATION OF CAREHPV-TESTING AND VISUAL INSPECTION FOR CERVICAL CANCER SCREENING IN RWANDA

**MIXED
ABSTRACTS**
13:30–14:30
Wednesday
8 November

Clifford, Gary¹; Franceschi, Silvia²; Uwimbabazi, Mathilde³; Rugwizangonga, Belson^{4,5}; Sayingoza, Felix¹; Clifford, Gary²

¹Ministry of Health; ²International Agency For Research on Cancer; ³Muhima District Hospital; ⁴University Teaching Hospital of Kigali; ⁵University of Rwanda School of Medicine and Pharmacy

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Background Within the framework of a population-based HPV survey performed to monitor HPV vaccine impact in Kigali, Rwanda, we nested an evaluation of the different WHO recommended options for cervical cancer screening and treatment of precancerous cervical lesions in LMICs, namely 1) VIA-and-treat, 2) HPV-and-treat, and 3) HPV followed by VIA to triage for treatment (HPV+VIA-and-treat).

Methods 775 women aged 30-59 years underwent: i) visual inspection of the cervix (screening VIA), ii) cervical cell collection for local careHPV testing and iii) cervical cell collection for liquid-based cytology and GP5+/6+HR HPV testing in Amsterdam. 185 women positive by screening VIA, careHPV and/or GP5+/6+HR HPV were recalled for a second visit, among whom 156 (81%) attended. At the second visit, visual inspection was again used to triage women for treatment or not, and to obtain biopsies from all women, either directed at visible lesions or randomly to the squamocolumnar junction. Cross-sectional sensitivity and specificity were calculated against cytological HSIL or worse (HSIL+)(n=19) as well as histological CIN3+ (n=7). For CIN3+, corrected indices were calculated after imputation of missing histology data, weighted by the probability of CIN3+ among valid biopsies from women with the same combination of screening VIA, careHPV and GP5+/6+ HR-HPV results.

Results Test positivity was 5.0% by screening VIA and 13.4% by careHPV. In a single-visit approach, VIA-and-treat was estimated to have a sensitivity of 16% for HSIL and 57% for CIN3+, and a specificity of 95% for both. In a two visit approach (in which 4 observed HSIL+ and 1 imputed CIN3+ among the 35 women lost to follow-up are considered untreated), HPV-and-treat had a sensitivity of 68% for HSIL and 86% for CIN3+ (and specificity of 90% and 89%, respectively), whereas HPV+VIA-and-treat had a sensitivity of 26% for HSIL and 43% for CIN3+ (and specificity of 98% for both). CareHPV and GP5+/6+HR HPV performed similarly to detect HSIL+ and CIN3+.

Conclusions To our knowledge, this represents the first comparison of WHO endorsed options for cervical screening and treatment in LMICs, and showed that careHPV performed well to detect high-grade lesions in a HPV-and-treat approach, performing similarly well to that of a clinically validated HPV test done in Europe. However, approximately half of careHPV-positive women with high-grade lesions were negative by VIA triage, and would not be treated. Given the additional problem of loss to follow-up, a two-visit HPV/VIA-and-treat approach may not perform better than a single visit VIA-and-treat.

POSTER

Clifford, Gary

P215 | MONITORING THE IMPACT OF THE HPV VACCINATION PROGRAM IN RWANDA

POSTER
SESSION
TWO

16:30–18:00

Thursday

9 November

Clifford, Gary¹; Franceschi, Silvia²; Mpunga, Tharcisse³; Baussano, Iacopo²; Sayingoza, Felix¹; Clifford, Gary²

¹Rwandan Biomedical Centre / Ministry of Health; ²International Agency for Research on Cancer; ³Butaro Cancer Center of Excellence

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Objectives Human papillomavirus (HPV) vaccination is expected to reduce the high number of cervical cancer deaths in sub-Saharan Africa. However, reliable evidence of real-life effectiveness of vaccine programs remains crucial to encourage national planners to implement and sustain cervical cancer prevention services. The government of Rwanda's early introduction of an HPV vaccine program in 2011, with coverage of >90% in girls in the target age-group, and their approval of a long-term research collaboration with IARC, offers an excellent opportunity to evaluate short- to medium-term impact of HPV vaccination in Africa.

Methods In 2013/14, the baseline picture of HPV prevalence among predominantly unvaccinated cohorts of women was characterised by collecting cervicovaginal samples from a population-based, age-stratified sample of 2,508 unvaccinated women aged 18–59 years in Kigali, and urine samples from 912 18-20 year old high-school students. Repeat surveys in these groups of women are being performed in 2017/18 to demonstrate HPV vaccine impact in comparison with baseline surveys. Lastly, the fraction of cervical and other anogenital cancers attributable to (and hence potentially vaccine preventable by) different HPV types are being estimated by HPV genotyping of tumour tissues.

Results In the baseline cell survey, HIV prevalence was 20% and overall HPV prevalence 34%. HPV prevalence decreased by age and was higher in HIV-positive (49%) than negative (30%) women. Prevalence of HR HPV was 15%, of which HPV16 was the most common, both among HIV-positive and HIV-negative women [Ngabo, BMC Infect Dis].

HPV DNA testing from urine was proven to be highly acceptable and epidemiologically valid by strong associations with sexual determinants of HPV prevalence. HPV6/11/16/18 prevalence was significantly lower in 393 students vaccinated in the catch up program (0.5%) than in 519 unvaccinated students (4.1%) (prevalence ratio=0.12, 0.03–0.51) [Franceschi, Int J Cancer].

The HPV-related cancer series currently includes 321 HIV-negative and 60 HIV-positive cervical cancer specimens, as well as 22 vulva, 16 vagina, 65 penile and 44 anal cancers diagnosed in Rwanda, for which HPV genotyping results will be presented.

Conclusions Baseline data confirmed Rwanda to be a setting of high prevalence of HPV disease that is worsened by HIV co-infection and support the feasibility of urine surveys to monitor HPV vaccination. Whilst awaiting repeat surveys of vaccinated cohorts in 2017/18, our baseline findings from urine of girls vaccinated in the Rwandan catch-up campaign already represent the first real-life evidence of HPV vaccination programme impact in Africa.

PRESENTATION

Coghill, Anna

EPSTEIN-BARR VIRUS (EBV) SEROLOGICAL PROFILE AND BURKITT LYMPHOMA (BL) RISK

BURKITT LYMPHOMA

11:00–12:30
Wednesday
8 November

Coghill, Anna¹; Doolan, Denise²; Bethony, Jeff³; Nkrumah, Francis⁴; Bhatia, Kishor¹; Mbulaiteye, Sam¹

¹National Cancer Institute, National Institute of Health; ²Australian Institute of Tropical Health and Medicine; ³George Washington University School of Medicine; ⁴Noguchi Memorial Institute

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Background The discovery of EBV in BL tumor cells represented the first link between a virus and cancer. Despite being the first oncogenic virus identified in humans, the underlying role of EBV in BL remains unclear. Infection with EBV is ubiquitous, and nearly all children in BL-endemic areas are seropositive for EBV within the first year of life. However, only a small percentage develop BL, and variation in the EBV-directed immune response could be a possible explanatory co-factor. We applied a recently-developed protein microarray that comprehensively examines the humoral immune response to EBV to further understand the virus' relationship with this pediatric tumor.

Methods We probed serum from 150 confirmed BL cases and 150 BL-free children matched to cases on age, gender, and enrollment period as part of an NCI-sponsored study in Ghana (1965–1994), a mesoendemic malaria region. Sera were probed using an EBV protein microarray that measured both IgG and IgA antibody responses against 199 distinct sequences representing 86 EBV proteins. Variation in the EBV-directed antibody repertoire between BL cases and matched controls was assessed using t-tests with continuous array output (standardized signal intensities).

Findings Levels of 8 IgA and 44 IgG anti-EBV antibodies significantly differed between confirmed BL cases and age and sex-matched controls ($P < 0.05$). The strongest IgA antibody differences between BL cases and controls were observed for two EBV early antigen (EA) sequences and the BBRF1 Na protein ($P < 0.001$). Notably, 18 anti-EBV IgG responses were significantly different according to BL status at the $P < 0.001$ threshold. These cancer-related IgG reactivity differences targeted sequences from the following EBV proteins: EA, BFRF3 (VCAp18), BVRF1, BHRF1 (Bcl-2 homolog), BPLF1, BOLF1, BDLF3 (gp150), BLRF2 (VCAp23), BZLF1 (Zta), EBNA1, LMP1, BGLF5 (alkaline exonuclease), and BALF2-p138 (ss DNA binding protein).

Conclusion Our data expand beyond the less than 5 anti-EBV antibodies investigated in relation to BL risk to date in malaria-endemic regions, identifying 52 anti-EBV antibodies that differed between BL cases and controls. The most pronounced differences in children diagnosed with this pediatric tumor were observed for IgG antibody responses, suggesting that variation in longer-term rather than recent EBV exposure plays a role in BL risk.

PRESENTATION

Come, Jotamo

CLINICAL AND PATHOLOGICAL PROFILE OF OESOPHAGEAL TUMOURS IN MOZAMBIQUE

PALOP

14:40–16:00

Friday

10 November

Come, Jotamo¹

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During the study period, 496 new cases of esophageal cancer were recorded (Table 1). The median age at diagnosis was 56 years (range 15–97). Most patients were female (women: 284 cases, 57.3%; men: 212 cases, 42.7%) and of black race (99.6%).

There was no information on the anatomical site of the tumor for 182 cases (36.9%). Among the cases with available information, 114 (36.5%) were located in the lower third, 158 (50.6%) in the middle third and 40 (12.8%) in the upper third of the esophagus. Regarding the histology type, 373 cases (75.2%) were squamous cell carcinomas, 12 (2.4%) were adenocarcinomas and 111 (22.4%) were of unspecified histological type. Information on grade could not be obtained for 315 (63.5%) cases. Among the cases with available data (181), 77 (42.5%) were well differentiated, 84 (46.4%) were moderately differentiated and 20 (11.0%) were poorly differentiated.

Surgical treatment with curative intent was only possible in 42 patients (8.5%), feeding gastrostomy was performed using nasogastric tube in 73 (14.7%) cases and the remaining patients had palliative treatment (BSC). Most patients had severe malnutrition at admission.

Discussion This study reveals that esophageal cancer is a common condition at MCH according to the Maputo population-based cancer registry.

In our study sample, most cases were female and of black race. The lower and middle thirds of the esophagus were the most common sites and squamous cell carcinoma was the most frequent histological subtype. Gastrostomy was the most frequently performed palliative surgery, but according to the clinical records of the patients the attending physicians refer that it is often responsible for complex skin lesions and further suffering. A better understanding of the aetiological agents and biological mechanisms involved in the development of oesophageal cancer may offer opportunities to reduce exposure to environmental risk factors and also allow early diagnosis or predict response to therapy (Hendricks D, Parker MI. Oesophageal cancer in Africa. IUBMB Life. 2002 Apr-May;53(4-5):263-8). It is necessary to study the local risk factors, to promote early diagnosis in high risk areas (in which the provinces of Gaza, Inhambane and Maputo appear to be included), possibly using endoscopy through NBI, as this technical resource is available at the MCH gastroenterology department.

Conclusion Esophageal cancer is a commonly diagnosed and treated condition at the MCH, but its diagnosis is made at an advanced stage of the disease, and risk factors are mostly unknown for this region

POSTER

WELCOME
RECEPTION
AND POSTER
SESSION ONE
16:30–18:00
Tuesday
7 November

Company Serrat, Assumpta

P119 | OPTIMIZING TRAINING OF GENERAL NURSES AND DOCTORS TO MANAGE BREAST CANCER PATIENTS: AN INNOVATIVE APPROACH IN ETHIOPIA

Abdellah, Kunuz²; Company Serrat, Assumpta¹; Abraha Woldemariam, Anaylem³; Assefa Woldegeorgis, Mathewos³; Gizachew, Zelalem⁴; Montserrat, Mireia¹; Schwartz, Amanda⁴

¹Catalan Institute of Oncology; ²Federal Ministry of Health;

³Black Lion Hospital; ⁴American Cancer Society

Correspondence acompany@iconcologia.net

Background The Ethiopian National Cancer Plan has set as one of the priorities to improve the care of breast cancer patients. One of the main challenges to face is the lack of cancer specialists, doctors and nurses, and the excessive time required to train them. Faced with this situation arises, in a first stage, the training of a group of doctors and nurses from regional hospitals, to be able to diagnose and apply hormone treatments and chemotherapy to patients with breast cancer. In order to optimize the process and minimize the stay of students at the Hospital of Addis Ababa, it has been designed a blended program including an e-learning training followed by a clinical training at the hospital to be able to achieve this first stage.

This project has the support of the American Cancer Society and the participation of the Department of Oncology of the Black Lion Hospital of Addis Ababa, the Ministry of Health of Ethiopia and e-oncologia from the Catalan Institute of Oncology, Spain.

Objectives The global aims of the project are to:

1. To train within a short period of time a group of 50 general practitioners and nurses to be able to:
 - Diagnose and stage of patients with breast cancer
 - Planning treatment: Referral to tertiary hospital; Apply systemic therapy: hormonotherapy and chemotherapy; Manage treatment adverse effects; Follow-up; Apply palliative care.
2. Establish proof of concept, e-learning along with clinical practice is a viable method for cancer workforce education within African context: reducing the time needed for training, reducing the time for clinical stages, and assuring the standardization of knowledge.
3. Evaluate a 'prototype' version of this model to apply it within other African countries.

Description The training program will last for 4 weeks and consists of:

- A) Intensive 4-week cycles during which 4 doctors and 4 nurses will be trained, up to a total of 50 participants: 1 week of e-learning on breast cancer, 3 weeks of clinical training at the Black Lion Hospital.
- B) Monitoring and support students during the following 12 months: a space where students may consult mentors of the Black Lion Hospital and share experiences with each other.

Results We will present the full program design as well as the results of the first 6 months of implementation: Degree of stakeholder's satisfaction, academic evaluation, and impact evaluation on patient management.

POSTER

Company Serrat, Assumpta

P452 | THE RWANDA EDUCATION PROGRAMME ON CERVICAL CANCER PREVENTION: FIRST EDITION E-LEARNING EXPERIENCE

POSTER SESSION TWO

16:30–18:00

Thursday

9 November

Company Serrat, Assumpta²; Montserrat Moreno, Mireia¹;

Bielsa Lazaro, Joaquin²

¹Catalan Institute of Oncology; ²Oshen – King Faisal Hospital

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One of the most common cancers affecting women all around the world is cervical cancer. Detecting this cancer early is the key to keeping women alive and healthy. Screening, prevention and treatment are necessary to reduce mortality rates and vaccination against human papilloma virus needs to take hold.

According to ICO Information Centre on Human Papillomavirus, Rwanda has an estimated population of 3.5 million women who are in risk of developing cervical cancer and it's actually the most common type of cancer in women between the ages 15–44. The HPV center's current estimations indicate that 1,366 women are diagnosed with cervical cancer and 804 die due to the disease in Rwanda every year.

Cervical cancer is largely preventable and if diagnosed and treated at an early stage is a highly curable disease. A virtual course has been designed to provide such information to health professionals without costs to the participant and overcoming the limitations of travelling, time availability or language.

E-Oncology is specialising in ongoing training for every area of oncology, and is the first online teaching project devoted solely to provide training in this area of healthcare. Its main goal is to create virtual spaces where specialists in training, practising doctors and non-specialist professionals can learn about cancer.

E-oncologia offers a consolidated teaching methodology of virtual training grouped into 5 programs, 48 courses that have been translated into 5 languages, with more 13,000 participants in all continents.

The first edition in Rwanda of the Cervical Cancer Prevention Course was coordinated by e-oncologia (from the Catalan Institute of Oncology) with Sphera Global Health Care and it was dedicated to the College of Medicine and Health Sciences of the University of Rwanda.

The objective of this course is to keep updated medical professionals involved in preventing and treating cervical cancer in the latest procedures. The methodology is solely online and participants are supported by a qualified tutor, who will guide them through virtual classrooms and forum discussions.

Output was a 15 hours distance course. The course contents have been developed by the Cancer Epidemiology Research Program at the Catalan Institute of Oncology and peer-reviewed by experts from FIGO, UICC, IAEA, IARC, and WHO.

In the first edition, from the 50 participants, 48 accessed the virtual classroom and 47 of them completed the course (completing final evaluation), while 3 have not finished the course, a percentage of success of about 94%.

PRESENTATION

SITE SPECIFIC CANCERS & OTHER ABSTRACTS

13:30–14:30

Thursday

9 November

Cubasch, Herbert

CLINICAL RESPONSE TO NEOADJUVANT CHEMOTHERAPY IN PATIENTS FROM A TERTIARY BREAST UNIT IN JOHANNESBURG, SOUTH AFRICA

Cubasch, Herbert^{1,2}; Joffe, Maureen⁴; Murugan, Nivashni^{1,2}; Tsai, Ming-Chih^{1,2}; Jacobson, Judith³; Ruff, Paul¹

¹University of the Witwatersrand; ²Chris Hani Baragwanath Academic Hospital;

³Herbert Irving Comprehensive Cancer Center; ⁴Wits Health Consortium

Correspondence hcubasch@gmail.com

Background Neoadjuvant chemotherapy (NACT) has become the standard of care for locally advanced breast lesions. It is also increasingly being used for operable breast cancer with aggressive intrinsic subtypes. It offers the particular advantage of an in vivo assessment of the tumour response. However, response rates may differ in less studied resource-constrained countries compared to the published international series, and this may influence the sequencing of surgery and systemic treatments in these settings.

Methods 278 mainly black African women were diagnosed with non-metastatic invasive breast cancer at Chris Hani Baragwanath Academic Hospital, Breast Unit, Soweto, South Africa between 2009 and 2017 and received NACT at Charlotte Maxeke Johannesburg Academic Hospital. Molecular subtypes and clinical responses were analyzed. The course of treatment included mainly doxorubicin and cyclophosphamide (AC), followed by additional paclitaxel (AC>T) or 5-fluorouracil, doxorubicin, and cyclophosphamide (FAC); trastuzumab was not available. Responses were categorized into the following 4 groups: complete or partial clinical response and stable or progressive disease.

Results We observed a marked difference in the clinical response between the 4 intrinsic subtypes. The complete clinical response rate was lowest in Luminal A lesions (3.8%), followed by the Triple Negative group (7.8%), 15.2 % for the Luminal B group and 29.2% for the HER-2 enriched subtype. Progressive disease was observed as follows: HER-2 enriched (4.2%), luminal B (7.3%), Luminal A (15.4%) and Triple Negative (25.5%). Partial clinical response and stable disease were respectively assessed for Luminal A (53.8%/ 26.9%), Luminal B (41.7%/ 35.8%), HER-2 enriched (58.3%/ 8.3%) and Triple Negative (37.3%/ 29.4%).

Discussion and Conclusion We are aware that clinical response does not equal pathological response. However, a recent pooled analysis of 12 independent trials (Cortazar et al, Lancet 2014) showed a pathological complete response (pCR) to NACT (without trastuzumab) in the HER2-enriched group of 30.2%; and in the triple negative subtype of 33.6%. The percentages for luminal B are 16.2-18.3% (depending on the HER2-status) and 7.5% for luminal A.

Despite our attempts to follow international guidelines, we were not able to reproduce in our setting the more favourable response rates to NACT that were reported in largely high-resourced environments, most strikingly in the triple negative subtype. We should reconsider the role of surgery for all primarily resectable lesions and the role of primary endocrine treatment for the luminal subtypes.

PRESENTATION

Dawsey, Sanford MENTOR-MENTEE DISCUSSION

Dawsey, Sanford¹; Mwachiro, Michael²
¹National Cancer Institute; ²Tenwek Hospital

**BIG CAT
AWARDEES**
11:00–12:30
Wednesday
8 November

Correspondence dawseys@mail.nih.gov

This session will be a discussion between a round 1 BIG CAT grantee (Mike Mwachiro) and one of his BIG CAT mentors (Sandy Dawsey), describing how they met and started working together, how they interacted as Mike's BIG CAT project proceeded, and how they have continued working together since then. They will conclude with lessons learned and advice for developing a constructive mentoring relationship, followed by time for Q&A.

POSTER

Ddungu, Henry

**P262 | KNOWLEDGE, ATTITUDE AND PRACTICES OF UGANDA
CANCER INSTITUTE CLINICIANS REGARDING BLOOD TRANSFUSION**

**POSTER
SESSION
TWO**

16:30–18:00

Thursday

9 November

Ddungu, Henry¹; Krantz, Elizabeth M.²; Kiwanuka, Noah³; Phipps, Warren²; Nabbanja, Hanifah¹; Kajja, Isaac³; Wald, Anna⁴

¹Uganda Cancer Institute; ²Fred Hutchinson Cancer Research Center;

³Makerere University; ⁴University of Washington

Correspondence hddungu@fredhutch.org

Background The clinical decision to transfuse cancer patients may be suboptimal due to physicians' limited clinical knowledge, leading to inappropriate transfusions. This study assessed blood transfusion knowledge, attitudes and practices among doctors working at Uganda Cancer Institute (UCI).

Methods A cross-sectional self-administered survey of UCI doctors' knowledge, attitudes and practices regarding blood transfusion was conducted from June to September 2014. In consultation with transfusion medicine experts, 30 questions were developed, 10 for each of the 3 domains. We created a knowledge score equal to the number of questions correctly answered out of 10.

Results Among 28 doctors, the mean knowledge score was 5.3 (range 2–8) and 32% correctly answered at least 7 of 10 questions. Almost all (96%) understood the importance of proper patient identification prior to transfusion and 64% correctly reported patient identification error as the most common cause of fatal transfusion reactions. However, few knew the appropriate indications for transfusion of fresh frozen plasma (36%) or had a clear understanding of transfusion-related acute lung injury (7%). Over 60% of doctors indicated they lacked knowledge and needed more education in transfusion medicine. Doctors' attitudes towards transfusion practices were generally in line with acceptable practices. All strongly agreed that additional training in blood transfusion science is needed at UCI, irrespective of qualification or experience. When asked about clinical conditions that would lead them to transfuse blood to a cancer patient, all doctors indicated they would transfuse a patient with acute massive bleeding; 97% would transfuse a lymphoma patient with a hemoglobin of 5.2g/dL resulting from chemotherapy; 68% would not transfuse a terminally ill cancer patient on end-of-life care with a hemoglobin of 6.5g/dL; and 75% would not transfuse a stable CLL patient with a hemoglobin of 8.8g/dL. Most doctors reported sometimes (79%) or often (11%) changing their mind about whether to give a patient a blood transfusion based on input of their colleagues. Further, many (71%) believed that they had sometimes given unnecessary transfusions because of the influence from other physicians.

Conclusion While UCI doctors have some basic knowledge in transfusion, with acceptable attitudes and practices, most reported gaps in their knowledge and all expressed a need for additional education in the basics of blood transfusion. Transfusion training and evidence-based guidelines for UCI doctors are needed to reduce inappropriate transfusions and improve patient care. Peer influence in transfusion decision making requires more understanding.

POSTER

POSTER SESSION TWO

16:30–18:00
Thursday
9 November

Ddungu, Henry

P263 | THE NEED, CURRENT PRACTICES, AND CHALLENGES OF BLOOD AND PLATELET TRANSFUSION FOR PATIENTS WITH HAEMATOLOGICAL MALIGNANCIES AT THE UGANDA CANCER INSTITUTE

Ddungu, Henry¹; Kantz, Elizabeth M.²; Kajja, Isaac³; Naluzze, Sandra¹; Phipps, Warren²; Kiwanuka, Noah³; Wald, Anna⁴

¹Uganda Cancer Institute; ²Fred Hutchinson Cancer Research Center;

³Makerere University; ⁴University of Washington

Correspondence hddungu@fredhutch.org

Background Transfusions play an essential supportive role in treatment of hematologic cancer patients who are predisposed to anemia and thrombocytopenia. We describe the need for, current practices, and challenges of blood and platelet transfusion at the Uganda Cancer Institute (UCI) in a setting where blood products are rare, expensive, and may lead to serious adverse effects.

Methods We conducted a prospective observational study of consecutively admitted patients with hematological malignancies at the UCI from June to September 2014. We defined thrombocytopenia as platelet counts $\leq 50 \times 10^9/L$, anemia as hemoglobin $\leq 10g/dL$, and clinically significant bleeding as WHO grade ≥ 2 . The number of platelet and blood units that UCI requested and received during the study was abstracted from the Uganda Blood Transfusion Service records.

Results Among 91 inpatients followed for a median of 12 days (range 1–31), 50% were female; the median age was 26 years (range 2–87). Only 3% were HIV positive, whereas 28% had an unknown HIV status. Most (70%) were either currently receiving chemotherapy or had previously received chemotherapy. Acute lymphoblastic leukemia (33%), non-Hodgkin lymphoma (22%), and acute myeloid leukemia (18%) accounted for most malignancies. Thrombocytopenia occurred on ≥ 1 day in 58% of patients on 196/403 (49%) days. 39% of patients had ≥ 1 platelet transfusion, most (62%) for prophylaxis for low platelets. The median pre-transfusion platelet count was $10.7 \times 10^9/L$ (range 0.1 – $72 \times 10^9/L$). The mean number of 60-80mL platelet concentrate units requested per day was 16.2 (range 0–30) but the mean platelet units received was 5.1 (range 0–15). Anemia occurred on ≥ 1 day in 90% of patients on 78% of days. 68% of patients had ≥ 1 transfusion, most (79%) for anemia, with a median pre-transfusion hemoglobin of 6.6 g/dL (range 3.2–18.0g/dL). The mean number of blood units requested per day was 36.3 (range 8–57) but the mean number of units received was 14 (range 0–30). Clinically significant bleeding occurred on ≥ 1 day in 17 (19%) patients and on 8% of total days. Transfusions were done in all 17 patients at least once; on 51% of days with clinically significant bleeding patients were transfused the same day.

Conclusion Thrombocytopenia and anemia were common among UCI inpatients with hematological malignancies. Low availability of blood products resulted in fewer transfusions than ordered. The wide range of pre-transfusion platelet counts and hemoglobin levels suggests stricter transfusion guidelines are needed to ensure blood products are consistently given for appropriate indications.

PRESENTATION

**PREVENTION
& SCREENING
FOR CERVICAL
CANCER IN
AFRICA**
11:00–12:30
Tuesday
7 November

De Sanjose, Silvia

**THE INTERNATIONAL PAPILLOMAVIRUS SOCIETY (IPVS):
MISSION AND ACHIEVEMENTS**

De Sanjose, Silvia¹

¹Catalan Institute of Oncology, IDIBELL, CIBERESP

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IPVS is the global authority on papillomaviruses. Our mission is to contribute to the elimination of papillomavirus-related diseases. We do this by:

- 1) Contributing to improved understanding of, and disseminating information about, the biology and pathogenesis of papillomaviruses and their associated diseases, and the prevention, screening, diagnosis and treatment of papillomavirus-related diseases.
- 2) Advocating for evidence based policies that improve public health in relation to papillomavirus-related diseases and for sustainable research funding in the field.
- 3) Fostering excellence and rigor in papillomavirus research. Promoting and supporting education about papillomaviruses and career development in papillomavirus-related research.
- 4) Disseminating research results, knowledge and information among members, and by sharing information with the media.
- 5) Partnering with other societies, institutions and organisations.

In 2017 during our Conference in Cape Town, the first one ever held in Africa was attended by 1300 delegates we signed “The Cape Town Declaration on the Prevention of Human Papillomavirus Disease” in which we requested that “ every woman should have access to effective cervical screening and every girl with access to prevention through vaccination. Access should be available irrespective of where a girl or woman lives, her social status or whether she is immunocompromised. HPV-related cancers also affect men, and efforts to prevent HPV infection in men through HPV vaccination should also be undertaken”. We asked for “national guidelines and programs to prevent HPV-related diseases, supported by international guidelines, access to international expertise and support for implementation through increased access to more affordable vaccines and screening technology (e.g. through revolving funds for vaccines)”. An update of the efforts done by IPVS to build on these requests will be provided.

PRESENTATION

DeBoer, Rebecca

CLINICAL ETHICS IN GLOBAL ONCOLOGY: CASE STUDIES FROM RWANDA

ETHICS IN
GLOBAL
ONCOLOGY
PRACTICE &
RESEARCH

11:00–12:30

Friday

10 November

DeBoer, Rebecca¹

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Background Clinical ethics is a structured approach to ethical decisions in clinical medicine, usually dilemmas about the “right” thing to do in a given patient care situation, that is based on ethical principles and organized moral reasoning. Ethical questions arise frequently in clinical oncology, often involving key issues like informed consent and end-of-life care. In global oncology, complexities such as resource limitations, social barriers to shared decision-making, and variation in cross-cultural values further contribute to ethical dilemmas. Here, case studies from Rwanda will be used to illustrate the role of clinical ethics in global oncology.

Methods This is an ethical analysis based on experiences of the presenter, an oncology clinician and ethicist, from a 2-year period of clinical care delivery at the Butaro Cancer Center of Excellence in rural northern Rwanda.

Results In this presentation, three categories of ethical challenges in global oncology practice will be represented by case studies from Rwanda. First: treatment decision-making and balancing the potential benefit versus harms of cancer treatment, often in the absence of context-specific data on benefit, and with harms that go beyond toxicity to include social and economic consequences for a patient as well as family members. Second: resource allocation at the level of patient care, or “rationing care at the bedside,” in the setting of limited resources within a cancer treatment program. Third: cultural norms around gender roles, childbearing, and contraception as they relate to cancer treatment and adherence. The utility and limitations of a structured approach to these challenges based on existing ethical guidelines will be discussed.

Conclusion Clinical ethics can provide a framework for approaching the difficult ethical questions that arise in oncology practice, however further discourse is needed to more specifically address the complexities of clinical practice in global oncology. Also, the infrastructure that is increasingly set up in high resource settings to support clinical ethics, such as hospital ethics committees or ethics consultation services, is not widely available, which is an area ripe for innovative solutions. In addition to strengthening clinical (and research) ethics in low resource settings, medical ethics as a field can make important contributions to global oncology through providing the moral justification that serves as a basis for advocacy and equity in global cancer care and control.

POSTER

Decuir, Philippa

P053 | ONE SMARTPHONE PER VILLAGE: WE CAN USE WHAT WE HAVE TO GET WHERE WE WANT TO BE

**WELCOME
RECEPTION
AND POSTER
SESSION ONE**

16:30–18:00

Tuesday

7 November

Decuir, Philippa¹

¹Breast Cancer Initiative East Africa

Correspondence bciafrica@gmail.com

Background Due to poverty and lack of access to life-saving information, many African women present their breast cancer at late stages. Ironically, most Africans have access to mobile phones, 76% Rwandans use cell phones. Breast cancer is the leading cancer death among women worldwide, accounting for 23% of cancer deaths. Currently, more than ½ of the new diagnoses & majority deaths occur in LICs including countries in Africa because of lack of awareness. The urgency to address this issue is imperative. One Smartphone per Village (OSPV) is supported by a Breast Health Educational mobile Application & taps into the cellphone mindset as a viable channel for awareness.

Objectives

- Dispel myths, misinformation, stigma, taboo/teach timely help seeking behaviors
- Instill best practices: early detection, risk reduction, lifestyle & wellness
- Collaborate with Ministry of Health and stake holders

• Target 250 Villages 2017–2018; Rwanda has 14,847 Villages averaging 800 people per village

Methods OSPV relies on “Easy Entry” by a trained Village Ambassador (VA) in her village where she is known and trusted. The VA is a breast cancer survivor/volunteer; her knowledge is assessed via Pre/Post Surveys. VAs are supervised and monitored by BCIEA Coordinators.

- Culturally appropriately equipped VAs accurately disseminate messages. VA is able to document images, clips and anecdotes.
- The smartphone serves as an incentive-teaching/ reference tool and is accompanied by a printed Guide in Kinyarwanda. Connectivity/supervision is done via text messaging, email, shared Whatsapp Group plus biweekly meetings

Outcomes 2015, Airtel Rwanda donated 15 Android Smartphones.

- 17 VAs were trained & deployed to their villages in 2016 - projected impact was 13,600
- VAs use Umuganda and Umugoroba wababyeyi (civic events in Rwanda) as platforms.
- By the end of 2016, only 9 VAs were active & together they directly impacted 7,200 people.
- 2008–2015, using the traditional awareness approaches our impact was 7,000 people.

Implications Exponential increase of awareness translates to: knowledge, attitudinal/behavioral change and informed citizens in Rwanda. Technology based communication has proven successful intervention in maternal and infant health in Rwanda. Successful implementation of OSPV requires engaging government, policy makers & stakeholders. Access to breast health information will likely reduce late stage breast cancer in Rwanda. OSPV is relevant, cost effective and has potential for replication in similar settings.

PRESENTATION

Denburg, Avram

ACCESS TO ESSENTIAL MEDICINES FOR CHILDREN WITH CANCER: CHALLENGES AND THE PURSUIT OF INNOVATIVE SOLUTIONS

**AORTIC–ASCO
SYMPOSIUM**

Denburg, Avram¹

¹The Hospital For Sick Children

11:00–12:30

Wednesday

8 November

Correspondence avram.denburg@sickkids.ca

Summary Access to essential medicines is one of the key determinants of cancer survival globally. The World Health Organization's (WHO) Essential Medicines List (EML) sets the basic bar that all national governments should meet in the provision of medicines. The recently revised EML includes an expanded list of core medicines required for multiple malignancies, including the most prevalent pediatric cancers. Ensuring access to such medicines is an explicit component of the broader right to health enshrined in international human rights conventions. However, sizable global disparities exist in access to childhood cancer medicines. This session will analyze the major challenges underlying such disparities, and explore innovative solutions to them.

Learning objectives

1. Understand the current dynamics of global access to childhood cancer medicines, with a focus on LMICs
2. Apprehend the unique challenges related to access to cancer medicines for children
3. Explore innovative solutions to existing challenges from governmental, industry and civil society perspectives

PRESENTATION

PAEDIATRIC ONCOLOGY & OTHER ABSTRACTS

13:30–14:30

Thursday

9 November

Denburg, Avram

COST EFFECTIVENESS OF TREATING ENDEMIC BURKITT LYMPHOMA IN UGANDA

Denburg, Avram¹; Laher, Nazeefah¹; Mutyaba, Innocent²; McGoldrick, Suzanne³; Orem, Jackson²; Casper, Corey³

¹The Hospital For Sick Children; ²Uganda Cancer Institute; ³Fred Hutchinson Cancer Research Center

Correspondence avram.denburg@sickkids.ca

Background Despite high cure rates achieved in high-income countries, outcomes for children with Burkitt lymphoma (BL) in most low- and middle-income countries (LMICs) remain suboptimal. Perceptions of high cost and resource intensity remain political barriers to the prioritization of BL and other childhood cancer treatment programs in many LMIC health systems. Little to no knowledge exists of the actual cost and cost-effectiveness of treating pediatric cancers in LMICs. To improve outcomes for children with BL, the Uganda Cancer Institute implemented a comprehensive BL treatment program in 2012. Drawing on centralized patient-level data, we undertook an economic evaluation of the program to ascertain the cost-effectiveness of BL therapy in a specific LIC setting.

Methods We compared the treatment of BL (local standard) to usual care (no care), in a cohort of 215 patients treated between 2012 and 2014. Costs included direct, indirect healthcare, and indirect patient costs. Our primary measures of effectiveness was overall survival (OS). Patient outcomes were determined through electronic chart abstraction. The cost per DALY averted was calculated using WHO-CHOICE methodology and compared to standard definitions of cost-effectiveness.

Results The 2-year OS with treatment was 47%. Nine percent of patients abandoned therapy. The cost per DALY averted in the treatment group was US\$42.66. Cumulative estimate of national DALYs averted through treatment was 20,571 years, and total national costs of treatment were US\$877,670. The ratio of cost per DALY averted to per capita gross domestic product (GDP) was 0.2, reflecting a very cost-effective intervention.

Conclusion This study demonstrates that treating BL with locally tailored protocols is very cost-effective relative to per capita GDP. Studies of this kind will furnish crucial evidence to assist policymakers prioritize the allocation of health system resources among NCDs, including childhood cancer.

KEY- NOTE

Denny, Lynette HEALTH AND HUMAN RIGHTS

Denny, Lynette¹
¹University of Cape Town

**OPENING
CEREMONY:
KEYNOTE 1
AND 2**
09:00–10:30
Tuesday
7 November

Correspondence lynette.denny@uct.ac.za

Inequity is a worldwide phenomenon which impacts profoundly on the development and health of many nations. In 2016 just over 300 000 women died from pregnancy related causes, which represented a significant decrease in deaths from 1990. However the decrease in deaths was patchy and not as evident in continents such as Africa. In 2012 there were approximately 1.7 million women diagnosed with breast cancer and around half a million deaths - however, over 50% of the cases and 60% of the deaths occurred in developing countries. Similarly with cervical cancer where over 85% of cases and deaths were diagnosed in developing countries. Cervical cancer incidence and mortality have declined sharply in the past 40 years in high income countries due to widespread screening, treatment of precancerous lesions and early detection of invasive cancer and improved socio-economic status in some parts of the world. With the advent of prophylactic HPV vaccination for young women, it is estimated that 690 000 cases of cervical cancer and over 400 000 deaths could be averted if all eligible girls were vaccinated. However, equity of access to HPV implementation remains a problem and it is likely that those most in need of the HPV vaccination will receive the vaccine last. Implementation HPV vaccination has been instituted in a number of developing countries successfully but with significant donor support. Breast cancer mortality has decreased significantly in a number of countries internationally, particularly high-income countries due to a combination of awareness, early detection and effective treatments. While mammography may reduce breast cancer mortality it is prohibitively expensive for low and middle income countries (LMICs) and the focus has been on clinical early detection. Many preventative interventions for health have failed to reach LMICs due to logistical and cost issues, and the failure to introduce HepB vaccine (to prevent liver) cancer more than 20 years after widespread implementation in higher-income countries is an important example. Health is a human rights issue and until the international community recognises this, health inequity will continue to retard development of the poorest nations

PRESENTATION

**AFFORDABLE
TECHNOLOGY IN
GLOBAL
ONCOLOGY**

14:40–16:00

Friday

10 November

Denny, Lynette

IMPROVING SPECIFICITY OF HPV DNA TESTING IN SOUTH AFRICA

Denny, Lynette¹

¹University of Cape Town

Correspondence lynette.denny@uct.ac.za

Objectives Screen-and-treat (SAT) is recommended for cervical cancer screening in low-resource settings. With SAT, treatment is offered based on screening test results alone. Here we investigated whether Cepheid's Xpert HPV assay could be optimized for SAT.

Methods At a colposcopy and a primary care site in Cape Town, South Africa, 585 HIV-negative and 535 HIV-positive women (30-65 years) were recruited. Cervical samples were tested using Xpert HPV which detects the 14 high-risk HPV genotypes in 5 channels: HPV16, HPV18,45, HPV31,33,35,52,58, HPV51,59, HPV39,56,66,68. All women underwent colposcopy with histological sampling to determine outcome of cervical intraepithelial neoplasia grade 2/3 or cancer (CIN2+). We evaluated whether the balance of sensitivity and specificity could be improved by restricting to specific HPV genotypes and changing cut-off cycle threshold (Ct) values.

Results Using Xpert HPV "as is," sensitivity for CIN2+ was 88.3% and 93.0% and specificity 87.3% and 63.6% in HIV-negative and HIV-positive women, respectively. If only the 3 channels detecting HPV16,18,45,31,33,35,52,58 were classified as screen-positive, with only slight loss in sensitivity (87.0% and 91.1%), specificity improved to 90.5% and 68.9% in HIV-negative and HIV-positive women respectively. If the Ct value cut-points on these 3 channels were selected to attain 85% sensitivity, specificity could be further improved to 92.3% and 81.6%, in HIV-negative and HIV-positive women, respectively.

Conclusions Since Xpert HPV can achieve an excellent balance of sensitivity and specificity and can be run as a point-of-care test, single-visit HPV-based SAT approaches are now a feasible option to improve screening programs even for HIV-positive women.

POSTER

Deressa, Biniyam

P216 | PATTERNS OF CANCER IN UNIVERSITY OF GONDAR HOSPITAL: NORTH-WEST ETHIOPIA

**POSTER
SESSION**

TWO

16:30–18:00

Thursday

9 November

Deressa, Biniyam¹

¹Addis Ababa University

Correspondence biniyamtefera.md@gmail.com

Background Cancer affects all human beings. However, the type and patterns of occurrence vary depending on geographical location, socio-economic status, life style, genetic variation and other risk factors. Like other sub-Saharan countries, the incidence of cancer is rising in Ethiopia. The number of patients with a diagnosis of cancer is alarmingly rising in University of Gondar Hospital. Here, we describe the pattern of cancer diagnosed with their socio demography.

Methodology Study design: This was a retrospective record analysis of pathology service results, biopsy and FNAC.

Population All patients with a record of diagnosis as cancer according to the pathology (FNAC and biopsy) from Sept 2014 to Aug 2015 were included Data collection and handling: Data was collected from the pathology department record books by physicians working in the department. It was documented in an excel sheet and cross checked for consistency by the investigator. It was transferred to SPSS version 20 and descriptive analysis was done.

Result Out of 3231 samples (1263 biopsies and 1968 FNAC) evaluated in University of Gondar hospital in 2014–2015, 540 (16.7%) were malignant cancer cases. Among this 346 (64%) were females and the rest 194 (36%) were males. The age pattern shows, 499 (92%) were occur in adults and 41 (8%) are occurred in children. Lymphomas, cervical cancer and breast cancer are the three top common cancers of all age groups. In adult population cervical cancer, breast cancer and lymphoma are most common. In children of age less than 14 years lymphomas, wilm's tumor and retinoblastoma were the three top cancers. Cervical cancer, breast cancer and lymphomas are found to be the commonest cancers in females. On the other hand, lymphomas, head and neck squamous cell carcinomas (HNSCC), and colorectal cancer are the three top commonest cancers in males.

Conclusion This first study on cancer pattern in North-west Ethiopia indicates cancer is one of the common finding from cytology and histology samples analyzed in the pathology department. Comprehensive demographic and clinical data using population or facility based registry is required to get better information and for planning and monitoring cancer pattern in the region. Additionally, it will help in resource prioritization and decision making in the treatment strategies of cancer in the country.

PRESENTATION

Deroubaix, Aurelie

STUDY OF THE PRECURSORS OF HBEAG OF SUB-GENOTYPE A1 HEPATITIS B VIRUS AND THEIR IMPLICATION IN HEPATOCELLULAR CARCINOMA

**BASIC
SCIENCES
AND CHEMO-
THERAPY
ABSTRACTS**

13:30–14:30

Friday

10 November

Deroubaix, Aurelie¹; Kramvis, Anna¹

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Hepatitis B, an inflammation of the liver caused by Hepatitis B Virus, is responsible for over two million deaths per annum. In total, it is estimated that a third of the world population has been infected. Moreover, persistence of HBV in the liver leads to development of chronic infections such as cirrhosis, fibrosis and hepatocellular carcinoma (HCC). HBV is endemic in the black South African population, where genotype A is one of the predominant genotypes and A1 the predominant subgenotype, which has especially a high hepatocarcinogenic potential. HBV encodes the hepatitis B virus e antigen (HBeAg, p17) secreted by infected cells. A precursor protein, P25, is expressed and translated at the endoplasmic reticulum membrane. Post-translational modifications of the precursor give rise to P22, P20 and then HBeAg. However, the actual protein species involved in viral persistence have not been determined. Moreover, mutations in the precore region, such as G1862T in subgenotype A1, are frequently found in patients with HCC. The objective is to perform a functional characterization of subgenotype A1 HBeAg expression and HBV replication, following transfection of Huh7 liver cells with replication competent clones and/or plasmids expressing mature HBeAg and its precursors, in the presence or absence of G1862T mutation. Clones of p25, p25m (+G1862T), p22, p20, p17 were constructed. Precore negative replication competent clone was generated using site-directed mutagenesis. By confocal microscopy, HBeAg precursors show different cellular localizations, with p25 expressed in the cytoplasm and p20 and p17 in the nucleus; and with p22 shuttling between the cellular compartments. Introduction of G1862T mutation in P25 results in the same localization but a delayed expression in the cells and a lower expression and secretion of HBeAg, confirmed by confocal microscopy and ELISA. Further analyses with high resolution microscopy show a co-localization with the endoplasmic reticulum, preGolgi and Golgi compartments at different levels. In the viral context, the HBeAg-negative A1 clone resulted in reduced HBsAg expression and viral loads relative to the wild-type. Co-transfection of either the wild-type or HBeAg-negative replication competent clones with plasmids expressing HBeAg precursors interfered with HBsAg expression and decreased viral loads. In conclusion, HBeAg and precursors have different subcellular localizations and may play a role in maintaining the balance of HBV replication. This may be a viral survival strategy, favoring persistence of the virus. The G1862T mutation induced changes in both HBeAg expression and secretion are most probably associated with hepatocellular carcinoma.

POSTER

WELCOME RECEPTION AND POSTER SESSION ONE

16:30–18:00

Tuesday

7 November

Diarra, Abdoul Salam

P120 | MEDICAL STUDENT'S KNOWLEDGE ABOUT CERVICAL CANCER, HUMAN PAPILLOMAVIRUS AND ITS VACCINE

Diarra, Abdoul Salam¹; Benaicha, Nadia¹; Elfakir, Samira¹; Berraho, Mohamed¹;
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Introduction Human papillomavirus (HPV) is the commonest viral sexually transmitted infection in the world and the leading cause of cervical cancer. About 80% of sexually active women are at risk of acquiring an HPV infection at some point in life and the peak incidence of infection having been identified in young women. The main objective of this study was to assess the level of medical students' knowledge about cervical cancer and HPV.

Methodology A cross-sectional study was conducted on a representative sample of medical students at Sidy Mohamed Ben Abdellah University in Fes, Morocco. Self-administered questionnaires were used to collect relevant data.

Results A total of 328 participated in the study. The mean age was 20.76 ± 2.17 years and there was a female predominance (68.2%). Most respondents were aware of cervical cancer (100%), HPV (68.8%) and its vaccination (56.9%). Only 5.8% of respondents received training sessions on cervical cancer prevention. 69.4% of participants had good knowledge and the mean score of knowledge was 17.21 ± 4.35 points (29-items) out of 29. The proportion of students who had good knowledge about cervical cancer and HPV was higher in women (70.3%) than men (67%). It was also higher among second cycle students (87.7%) than those at the first cycle (54%). Similarly, this proportion was higher among participants who had had training sessions on cervical cancer prevention. In univariate analysis, factors statistically associated with medical students' knowledge were: age ($p < 0.001$); educational level in favor of second medical cycle ($p < 0.001$) and training sessions on cervical cancers prevention in favor of students who have been trained ($p < 0.04$). Multivariate analysis using the logistic regression method showed a statistically significant association between the dependent variable (Student's knowledge) with educational level in favor of second medical cycle: (OR= 2; 95% IC: [1.3–2.3]; $p < 0.001$).

Conclusion This study showed that the levels of participants' knowledge are insufficient. It will be necessary to provide regular training sessions.

PRESENTATION

Dickens, Caroline

CANCER SURVIVAL IN AFRICA: LOSSES USING AMBIENT DATA VS MOBILE HEALTH FOLLOW-UP

BIO-STATISTICS IN CANCER: WHAT DO THEY MEAN?

07:15–08:20

Friday

10 November

Dickens, Caroline¹; McCormack, Valerie²

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Cancer is one of the leading causes of death globally, outpacing mortality rates for many communicable diseases such as HIV/AIDS. In sub-Saharan Africa, cancer and other non-communicable diseases are becoming a major burden on healthcare systems.

Determining cancer survival rates is one of the foremost epidemiological concerns. In resource-poor areas, assessing cancer survival is often hampered by a lack of high quality data. When using ambient data with passive follow-up methods, health-related data systems are the most common sources of information for determination of diagnosis date and survival outcome. However, a lack of staffing and resources in many low and middle income countries' healthcare systems often results in poor record keeping and thus missing data. Furthermore, many patients with late stage and/or terminal disease will return to their family homes to die, meaning that there is no record of their survival outcome or date of death within the ambient data. Prospective studies using active follow-up methods allow for better record keeping with the healthcare systems. Nevertheless, many patients with late stage/terminal disease will still return to their family homes to die resulting in unknown survival outcomes and/or dates of death.

In this presentation, we will look at two breast cancer survival studies based in sub-Saharan Africa. The first, based on ambient data collected from a single hospital in South Africa, shows cumulative losses to follow-up over the study period and how this limits the accuracy of the cancer survival estimates. The second study, an ongoing study recruiting patients in five sub-Saharan African countries, uses a tailored mobile health (mHealth) management system to capture data in real-time. Women are actively followed-up on a 3-monthly basis to obtain information on disease progression and mortality. We show how these methods help reduce the losses to follow-up, but are not able to fully overcome them.

Accurate determination of cancer survival in resource-poor environments is dependent on obtaining high quality data. By understanding the critical periods in which patients are lost to follow-up, we can retain more patients within the healthcare system and thus improve survival from cancer within these areas.

PRESENTATION

Didi-Kouko Coulibaly, Judith

CHIMIOTHÉRAPIE NEOADJUVANTE DES CANCERS DE LA VESSIE

Didi-Kouko Coulibaly, Judith¹; Adoubi, Innocent¹

¹Chu Treichville / Ufr Sciences Médicales Abidjan

**BLADDER
AND
PROSTATE
CANCER**

11:00–12:30

Thursday

9 November

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Malgré les progrès, seuls 60% des patients ayant un cancer de la vessie T2, 50% des T3a et 15% de des T3b seront en vie à 5 ans. En dépit des avancées en chirurgie, 50% des patients développeront des récidives au cours des 2 premières années post-opératoires, systémiques dans 80% des cas.

Parmi les facteurs prédictifs de récurrence, l'envahissement ganglionnaire présente un pronostic redoutable avec une survie à 5 ans <20% en l'absence de traitement complémentaire, faisant des TVIM des maladies d'emblée micrométastatiques. D'où l'intérêt d'une chimiothérapie systémique périopératoire. Les réponses (>70%) obtenues dans les cancers de vessie métastatiques aussi bien sur les métastases que sur les tumeurs primitives, ont conduit à plus étudier le protocole MVAC dans les tumeurs localisées.

Depuis 1985, plusieurs essais ont démontré l'intérêt de la chimiothérapie néo adjuvante à base de Cisplatine dans les TVIM (MVAC, MVAC intensifié, MVC), avec un gain en survie de 6%, chez des sujets « fit » (Score OMS ≤ 1 et Clearance de la Créatininémie > 60ml/min) avec un cancer de vessie opérable (T2-4a, Nx0-2, M0), ce qui en fait un niveau de preuve I.

Elle a pour buts:

- D'éradiquer la maladie micrométastatique ganglionnaire
- De réduire la taille de la tumeur et permettre de conserver l'organe (si pT0)
- Et de prolonger la survie.

La rapidité de la prise en charge est essentielle pour obtenir un bénéfice significatif. La chirurgie doit être programmée dans les 12 semaines qui suivent le diagnostic, d'où l'intérêt d'une collaboration parfaite entre oncologues et urologues.

Plusieurs autres molécules de chimiothérapie (Gemcitabine), d'immunothérapie (Atezolizumab) et de thérapies ciblées (inhibiteurs VEGF ou EGFR) ont été étudiées en néoadjuvant avec des résultats ne permettant pas encore leur utilisation quotidienne, même si parfois encourageants.

Toutes ces pistes de recherche relancent le débat sur l'intérêt de biomarqueurs pronostiques et prédictifs de réponse, d'où l'intérêt de la génomiques et de la protéomique. BRCA1 et p53 semble être des biomarqueurs prometteurs.

Le standard de traitement des TVIM est la chimiothérapie néoadjuvante à base de Cisplatine chez des patients en bon état général, avec une fonction rénale correcte, pour lesquels il ne faut pas dépasser le délai de 12 semaines requis entre le diagnostic et la chirurgie. La survie en est meilleure, surtout en cas de réponse complète histologique. Chez les patients « unfit », la chimiothérapie néoadjuvante n'est pas recommandée. L'inclusion dans des essais est souhaitée.

POSTER

POSTER SESSION TWO

16:30–18:00
Thursday
9 November

Dimaras, Helen

P249 | “WHERE DOES THIS COME FROM?” UNDERSTANDING HOW SURVIVORS AND PARENTS OF CHILDREN WITH RETINOBLASTOMA CONCEPTUALIZE GENETICS

Dimaras, Helen^{1,2,4}; Gedleh, Amal^{1,2}; Hill, Jessica^{1,2}; Kabiru, Joy⁴; Kimani, Kahaki³; Njambi, Lucy³

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Introduction Genetic testing and counselling have become integral parts in the management of heritable cancers, like the childhood eye cancer retinoblastoma. This study aimed to determine the attitudes, knowledge and experiences – concerning retinoblastoma genetics – among survivors and parents of children with retinoblastoma in Canada and Kenya.

Methods Data was collected through focus groups and a brief demographic questionnaire. Study settings were in Canada (The Hospital for Sick Children) and Kenya (Kenyatta National Hospital and Kikuyu Eye Unit). Thematic analysis was used to identify key themes from discussions in each setting.

Results Three focus groups were conducted in Toronto (n = 15) and five in Kenya (n = 31). Themes that were common to both Canadian and Kenyan populations included: (a) there is significant confusion about the genetics and heritability of retinoblastoma; (b) there is a need for improved communication from healthcare teams about genetics; and (c) there is a need for improved access to psychosocial support to help with coping. Unique themes included: (a) genetic diagnosis can cause significant interruption to family relationships (Kenya); and (b) genetic testing and counselling are valued by families (Canada).

Conclusions Even in Canada, where genetic testing and counselling are well established, retinoblastoma survivors and parents were found to have significant gaps in their knowledge of genetics. Similarly in Kenya, participants were confused about the genetics and heritability of retinoblastoma. Improving communication from healthcare teams, and providing psychosocial support, could help enhance information uptake and understanding by families in both Canada and Kenya. The patient perspective from each population also revealed context-specific issues that are useful for the refinement of cancer genetic services in each setting.

PRESENTATION

EPIDEMIOLOGY
ABSTRACTS
14:40–16:30
Wednesday
8 November

Diop, Halimatou

HPV GENOTYPES IN HIGH-GRADE INTRAEPITHELIAL NEOPLASIA LESIONS AND INVASIVE CANCERS IN THE AFRICAN CONSORTIUM ON CERVICAL CANCER CONTROL RESEARCH (COFAC-Col)

Diop, Halimatou¹; Coulibaly, Judith Didi²; Rakoto-Andrianarivelo, Mala³; Njoun, Richard⁴; Berthet, Nicolas⁵; Diop, Mamadou¹

¹CHU Aristide le Dantec / Université Cheikh Anta Diop; ²Centre Hospitalier Universitaire de Treichville; ³Université d'Antananarivo; ⁴Centre Pasteur Du Cameroun; ⁵International Medical Resarch Center of Franceville

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Background Cervical cancer (CC) is the second most common cancer in women living in developing countries and also the second cause of cancer-related deaths in sub-Saharan African region. Efficacious vaccines exist but their implementation should be guided by the local molecular epidemiology of HPV strains. To provide a robust baseline for future evaluations of vaccine effectiveness, the African Consortium on Cervical Cancer Control Research (COFAC-Col) launched during AORTIC 2013 by 5 French-speaking African countries (Senegal, Ivory Coast, Cameroon, Gabon, and Madagascar) with the support of INCa, France's National Cancer Institute, is working to identified HPV genotypes associated with cervical cancers.

Objective The aim of this study was to determine the prevalence of the two main genotypes involved in CC HPV-16 and 18, as well as the prevalence of other HPV genotypes in high-grade intraepithelial neoplasia lesions and invasive cancers.

Methods Each country had to recruit a minimum of 400 informed and consenting women presented clinical evidence of cervical cancer or high-grade intraepithelial neoplasia lesions. From a cervical biopsy, histological preparation with inclusion to paraffin have been done to make the coding of cervical lesions. HPV genotyping was performed using a standardized protocol from Institut Curie of Paris (France) including a GP5+/GP6+ amplification, specific PCR reaction to identified HPV 16, 18, 33 and 45 and when needed, GP5+/GP6+ PCR product were sequenced.

Results A total of 1123 biopsy were collected so far, including 222, 152, 384 and 365 from Ivory Coast, Gabon, Madagascar and Senegal, respectively. Histological analysis was performed for 840 biopsy and 75% were invasive carcinoma with 90% of epidermoid carcinoma.

HPV genotyping were performed for 661 biopsy, and the overall prevalence of HPV-16 and HP18 varied from 35% in Madagascar, 75% in Senegal to 80% in Gabon. Many other genotypes were identified with HPV45 at 10% in Senegal and 42% in Madagascar, HPV58 at 11.9% in Gabon and at lowest proportions, HPV31, 33, 35, 39, 56 and 59.

Conclusion These preliminary results indicates that, despite the predominance of HPV 16, 18 in the majority of country, it is necessary to take into account the other genotypes in a specific vaccination program.

POSTER

**WELCOME
RECEPTION
AND POSTER
SESSION ONE**
16:30–18:00
Tuesday
7 November

Dlamini, Xolisile

**P070 | BURDEN OF CANCER IN SWAZILAND 'INCIDENCE ONLY':
2014–2015**

Dlamini, Xolisile¹; Hlophe, Priscilla N.; Okello, Velephi; Makadzange, Kevin
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Background Annual updates on cancer incidence and trends in Swaziland are provided through Swaziland National Cancer Registry. The cancer burden for 2014-2015 is highlighted.

Methods A systematic sampling was done to collect a total of 1,426 cancer cases diagnosed between 1 January 2014 and 31st December 2015. Cancer incidence data was abstracted from all the country's regional hospitals and Phalala referral office which have diagnostic equipment and expertise to manage cancer

Training of five health care providers was done before they abstracted data from the cancer medical records.

Only data of cancer cases from residents of the country was collected, the cases included those Swazis whose diagnoses was done outside the country. A resident was defined as anyone who has continuously lived/worked in the country for a period of at least six months and excludes persons who visited the country for purposes of accessing treatment. Benign and uncertain tumours (including in-situ tumours and cervical intraepithelial neoplasms (CIN) lesions) were also excluded. Included in the analysis were residents with cancer who were referred to hospitals outside Swaziland for further diagnosis and management

Data management and analysis was through STATA 13 version.

Results A total of 1,426 cases of cancer were diagnosed, of which 834 (58.5%) cases were women and 592 (41.5%) cases were men. The majority 730 (51.2%) of cancers occurred in the age group 30–49 years less than 1% of all cancers were reported in children less than 10 years of age.

Cervical cancer (31.1%) was leading in all cancers followed by Kaposi sarcoma (28.7%) whilst Prostate cancer was the leading male reproductive cancer accounting for 10.5% of new cancer cases. Breast cancer was the fourth ranking cause of cancer death (6.3% of total). Lung cancer was the fifth most common cancer, with 59 cases (4.1% of all cancers) in these two years. The other cancers were liver 52 (3.6%), esophageal 19 (1.6%), stomach 18 (1.3%), skin cancer 18 (1.3%) and vulva cancers with 16 (1.1%) of all cancers. About 12% average rise in cancer related deaths in 2015 when compared with 2014, however this was statistically insignificant (P value=0.216)

Conclusions Preventable cancers like Cervical cancer is on the rise and efforts should be made at all levels of cancer care continuum to mitigate this trend. This should be further investigated with a view to increase cancer control activities in the Country.

PRESENTATION

**ONCOLOGY
NURSING:
SYMPTO-
MATIC CARE**
13:30–14:30
Wednesday
8 November

Downing, Julia

**NURSING AT THE FOREFRONT OF PAIN MANAGEMENT IN AFRICA –
PROGRESS OVER 2 DECADES**

Downing, Julia¹

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Access to pain medications is a challenge in many low and middle income countries, in particular to some of the strong analgesics such as oral morphine. The reasons for lack of access range from: the medications not being available in country; Stockouts of the medicines; a fear of using opioids, particularly in children; a lack of training in pain management; and a lack of prescribers to ensure access, especially in remote areas. Thus one of the ways that access to pain management has been increased is through nurse prescribing. Uganda has been at the forefront of nurse prescribing for pain management within the context of palliative care service provision. Since the statute was changed in Uganda in 2004, such that palliative care trained nurses and clinical officers can prescribe oral morphine, nurses have been trained and are implementing palliative care around the country. This paper will share the progress of nurse prescribing in Uganda, sharing case studies of nurses working in different environments and exploring some of the challenges and successes.

The World Health Organization have been interested in the progress of nurse prescribing within palliative care and looking at how this has worked, and what lessons can be learnt and shared with other countries. In 2016/17 as part of a nurse leadership programme, a national evaluation of nurse prescribing was undertaken. A mixed-methods evaluation was carried out in three parts:

- 1) Preparation of the nurses for the role.
- 2) The process of assessing and managing the patients' pain, including the prescription of oral morphine. and,
- 3) an appraisal of the health-care system.

The evaluation was developed by a collaboration between MPCU, HAU, PCAU, APCA, the MoH, the University of Edinburgh and the WHO. Ethical approval was gained from HAUREC/ UNCST. It was undertaken by nurses on the leadership programme, working with 22 PC nurses around the country, thus involving a team of more than 50 people working in palliative care. An overview of the results of the evaluation will be shared, highlighting key lessons learnt and demonstrating that palliative care trained nurses are competent and effective at managing pain. Progress of nurse prescribing over the past two decades will therefore be discussed in light of this evaluation.

POSTER

POSTER SESSION

TWO

16:30–18:00

Thursday

9 November

Downing, Julia

P340 | ICPCN – MAKING A DIFFERENCE ACROSS AFRICA FOR CHILDREN WITH CANCER

Downing, Julia¹; Boucher, Sue¹; Nkosi, Busi¹

¹International Children's Palliative Care Network

Correspondence julia.downing792@btinternet.com

Background Over 21 million children globally need access to palliative care, with at least 8 million requiring specialist provision. The need for children's palliative care (CPC) is greatest in countries with a high burden of disease along with limited access to treatment. Countries in sub-Saharan Africa (SSA) have greatest need, e.g., in Zimbabwe 113.3 per 10,000 children need PC, and in Kenya 76.8, as opposed to countries such as the US where only 21.5 per 10,000 children require CPC. Alongside this, evidence suggests only 0-5% of those in need in SSA can access such care. Thus there is great need for expansion of CPC across the region.

Aim To review the impact of the work of the International Children's Palliative Care Network (ICPCN) in expanding access to CPC in SSA.

Methods A review was undertaken to assess the impact of the work of ICPCN globally, and specifically within sub-Saharan Africa. Mixed methods were utilised including, but not limited to, reviewing: project documentation and reports; hits on social media, downloads of materials, ehospice articles; impact of training – both face-to-face and e-learning; networking and communication events; papers presented and published; research undertaken.

Results The review is ongoing, however initial findings suggest the following: Communication: 560 individual and 129 organisational members in SSA, 126 ehospice articles (11%) addressing SSA specifically, newsletter sent to 29 SSA countries, global mapping of CPC including SSA; Advocacy: involvement in the WHA resolution for PC, birth of the African Children's Palliative Care Network (ACPCN) out of the regional advocacy group; involvement in the Global advocacy group representing views of SSA countries; Research: Presentations at conferences in 7 SSA countries, Various research studies including SSA e.g. C-POS, children's understanding of death and dying, Delphi study re global priorities in CPC research, study on models of CPC, studies into the 2-step analgesic ladder. Education: Face-to-face training delivered in 10 SSA countries, e-learning courses undertaken from 24 SSA countries; support to Diploma in CPC in Uganda, Beacon centre project in Uganda, Tanzania and South Africa; Support and Development: support given to different SSA programmes for CPC development including Malawi, South Africa, Swaziland, Uganda and Lesotho.

Conclusion ICPCN is providing ongoing support for CPC in SSA for children with cancer, along with those with a wide variety of conditions. Whilst there has been significant progress within the region, there is a need for ongoing work to strengthen CPC within the region.

POSTER

Downing, Julia

P341 | IMPACT OF A LEADERSHIP FELLOWSHIP PROGRAMME FOR PALLIATIVE CARE NURSES IN UGANDA

POSTER

SESSION

TWO

16:30–18:00

Thursday

9 November

Downing, Julia^{1,2}; Murphy, Mairead³; Leng, Mhoira^{1,2,4}; Kiwanuka, Rose⁵; Grant, Liz²

¹Makerere University; ²University of Edinburgh; ³University of Bristol;

⁴Cairdeas International Palliative Care Trust; ⁵Palliative Care Association of Uganda

Correspondence julia.downing792@btinternet.com

Background The Nurse Leadership Fellowship (NLF) Programme was developed in response to a need for both improved leadership skills and increased access to palliative care (PC) services in Uganda. The 18 month NLF was conducted from August 2015-January 2017 and 20 nurses completed the programme. Teaching was delivered on a modular basis with three 1-week taught modules interspersed with 5-6 months of ongoing mentorship and supervision from within Uganda and the UK. During the fellowship nurses completed individual action plans along with national research projects. Following completion of the NLF it was important to ascertain the impact of the programme and lessons learnt for future replicability.

Aim To evaluate the impact of the Uganda NLF.

Method An evaluation was undertaken utilising mixed methods (1) utilising existing sources of monitoring and evaluation (M&E) from the NLF e.g. course reports, pre/post tests, videos, poster presentations, action plans, research reports etc.; and, (2) 27 interviews were carried out; 13 nurse fellows, 4 link nurses, 3 project leads, 2 senior hospital staff and 5 UK mentors. Data was triangulated to confirm findings and draw conclusions.

Results The NLF was effective and well-delivered. Fellows had improved knowledge, skills and self-confidence and gave concrete examples as to how the fellowship helped them to take on a leadership role in PC. Key impacts from the NLF include: increased awareness of PC; increased access to PC through the training of 153 link-nurses, increased training, mentorship and research capacity; direct impact on fellows e.g. confidence, self-efficacy etc. UK mentors reported: skills improvement; learning for UK services, and personal impact. The project was sustainably designed, fellows were embedded in the health system, it built on existing resources and fellows have been sustainably strengthened. National research projects were completed which will have both national and international impact, as well as strengthening fellows research capacity. These included: a review of existing curriculum for PC nurse prescribers; clinical competence of nurse prescribers; a review of health systems in Uganda; and an evaluation of the link nurse programmes; and enabled fellows to work together, along with their facilitators and mentors.

Conclusion The NLF is an exemplary leadership training which can be used as a model for the future. The model of integrating nurse leadership training with link nurse training, individual action plans and national projects has maximised the impact and the sustainability of the programme. Future multidisciplinary and nurse expansion of the NLF is recommended.

PRESENTATION

Dryden-Peterson, Scott

ESTIMATING THE FULL CANCER BURDEN: QUANTIFYING CANCER CASES NOT RECEIVING TREATMENT IN BOTSWANA

EPIDEMIOLOGY

ABSTRACTS

14:40–16:30

Wednesday

8 November

Dryden-Peterson, Scott^{1,2,3}; Botebele, Kerapetse¹; Iyer, Hari³; Mmalane, Mompoti¹; Lockman, Shahin^{1,2,3}; Tapela, Neo^{1,2,4}

¹Botswana Harvard AIDS Institute; ²Brigham and Women's Hospital;

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Background. Mortality from cancer is believed to be rising in Africa and in LMICs globally. However, quantification of the cancer burden has been challenging due suspected high numbers of cancer cases never entering into specialized cancer care where they could be captured in registries or treatment cohorts. We sought to estimate the proportion of cancer cases not receiving cancer specific care in Botswana, a country with a robust primary health system and comprehensive oncology services available free of cost to all citizens.

Methods As part of the ongoing Potlako trial, we are evaluating the impact of a programmatic intervention (which includes provider capacitation and patient navigation) on timely access to cancer diagnosis and care. In this study, we prospectively enroll cancer suspects from health posts, clinics, and district hospitals from a single, predominantly rural district (population ~110,000) in Botswana. For this analysis, we included confirmed and probable cancers diagnosed from May to December 2016. Cancer-specific therapy was defined as any cancer surgery apart from diagnostic procedures, radiation therapy, or chemotherapy.

Results A total of 57 cancers were diagnosed, including cancers of the cervix (14), breast (11), esophagus (7), and other sites (25). Four (7%) patients that were alive and had not yet cancer-specific therapy were excluded. Of the remaining 53 patients, 29 (55%) have received cancer-specific therapy and 24 (45%, 95% CI 32 to 60%) did not receive any cancer-specific therapy prior to death or referral to terminal palliative care. The types of cancers in patients receiving treatment were significantly different ($p=0.045$) than those in patients unable to obtain treatment. Only one case of esophageal cancer received treatment and patients with uncommon cancer types were less likely to be treated. In a model adjusted for age and HIV status, men diagnosed with cancer were significantly more likely to receive no treatment (OR 3.7, 95%CI 1.0–13.5, $p=0.045$).

Discussion Even in context of free specialized cancer care and an ongoing intervention to facilitate oncology treatment, nearly half of patients with diagnosed cancer are unable to access treatment for their cancer. Mortality estimates drawn from oncology-based registries are likely to substantially underestimate true cancer mortality, particularly for esophageal cancer and other cancers with high pre-oncology mortality.

PRESENTATION

PAEDIATRIC ONCOLOGY & OTHER ABSTRACTS

13:30–14:30

Thursday

9 November

Dugan, Grace

DISEASE CONTROL USING A REDUCED-INTENSITY TREATMENT REGIMEN FOR ACUTE LYMPHOBLASTIC LEUKAEMIA (ALL) AT BUTARO CANCER CENTER OF EXCELLENCE, RWANDA

Dugan, Grace^{1,2,3}; Manirakiza, Alexis^{1,2}; Fehr, Alexandra^{1,2}; Shyirambere, Cyprien^{1,2}; Iradukunda, Esperance¹; Mpunga, Tharcisse¹; Lehmann, Leslie⁴

¹Butaro District Hospital; ²Partners In Health / Inshuti Mu Buzima;

³University of Global Health Equity; ⁴Dana-Farber Cancer Center

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Background Treatment of acute lymphoblastic leukaemia (ALL) in resource-limited settings presents substantial challenges, including the toxicity and length of chemotherapy treatment. Outcomes for treatment of this disease in high-income countries often show cure rates of over 85%, but in low-income countries survival rates are often below 35%.¹ The Butaro Cancer Center of Excellence (BCCOE) is a Rwandan Ministry of Health Cancer Referral Center located in rural Rwanda. BCCOE began treating patients with ALL in 2012 and followed a programmatic strategy proposed by Hunger, Sung & Howard (2009), in which a center starts by using a low-intensity regimen, Hunger 1 (similar to that used in high-income countries in the early 1980s) and then progresses to using more intensive regimens in a stepwise manner once the center can demonstrate use of the first regimen with a minimal rate of death from toxicity. Following this strategy, BCCOE began using an increased intensity regimen, Hunger 2, in October 2016. The objective was to increase cure rates while still maintaining a degree of toxicity which is manageable in the setting of a Rwandan District Hospital.

Methods This prospective cohort study will examine the first 20 patients, including adults and children, diagnosed with ALL and treated with the Hunger 2 regimen at BCCOE. Collected data will include the results of a disease control assessment at 28 days of treatment; including a clinical assessment, a full blood count, and a bone marrow biopsy. Other collected data will include demographic information, baseline characteristics – including presenting symptoms, site of disease, and risk factors – and the model of care in which the treatment takes place. Descriptive and bi- and multi-variate analysis will be performed to provide baseline descriptions of the cohort, and to assess for associations.

Results This is a new study at BCCOE, therefore, data collection is ongoing as of April 2017; data collection and analysis will be completed by August 2017.

Conclusions This study will provide a valuable contribution to the literature on the treatment of ALL in resource-limited settings by describing a cohort of Rwandan ALL patients and reporting on initial disease-control using the Hunger 2 regimen, as well as outlining the model of care and resources used at BCCOE in their treatment.

PRESENTATION

Duncan, Kalina

FRAMEWORK FOR A SYSTEMATIC AND EQUITABLE IMPLEMENTATION OF A NATIONAL CANCER CONTROL PLAN

NATIONAL CANCER CONTROL PROGRAMMES

07:15–08:20

Wednesday

8 November

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One of the greatest inhibitors in global cancer control is the lack of a National Cancer Control Plan (NCCP). Equally problematic is the existence of a plan, with no implementation. The adage of a strategic plan collecting dust on a shelf is far too accurate and familiar; the global cancer control community should invest in systematic and equitable implementation strategies that ensure the resources invested in designing NCCPs is eventually recognized by the public those plans serve.

NCCPs should be implemented by using a stepwise, collaborative, and planned approach. Typically not everything in the plan can be done at once, given workforce capacity and available resources. Developing a realistic framework for implementing a NCCP includes:

- 1) planning for NCCP implementation including identifying high priority needs and the allocation of limited resources;
- 2) implementation science research; and
- 3) monitoring and evaluation.

The International Cancer Control Partnership (ICCP) is a group of organizations engaged in development and implementation of NCCPs. The Cancer Plan Development and Implementation Assessment Tool, asks a series of questions to engage key stakeholders in a discussion of essential elements of implementing a NCCP. It assists in identifying areas for NCCP implementation enhancement and improvement.

Implementation science research can aid in developing approaches to implement evidence-based interventions in ways that consider the realities of a particular setting. This process should involve community members and public health practitioners ranging from health care professionals to researchers. Implementation research can identify challenges and barriers to program implementation, as well as factors that may facilitate rapid and effective NCCP implementation.

Monitoring and evaluation of NCCP implementation is key to demonstrate successes and justify more resources devoted to future implementation. Countries should have a process in place to assess how well priority items in the plan are being implemented, and a plan to move to the next stage of plan implementation.

POSTER

POSTER SESSION TWO

16:30–18:00
Thursday
9 November

Durosinmi, Muheez

P446 | DISTRIBUTION OF BCR-ABL TRANSCRIPT VARIANTS IN NIGERIAN CML PATIENTS ACCESSING IMATINIB AT THE OBAFEMI AWOLOWO UNIVERSITY TEACHING HOSPITALS COMPLEX, ILE-IFE, NIGERIA

Durosinmi, Muheez¹; Bolarinwa, Rahman A.A.¹; Owojuyigbe, Temilola¹; Salawu, Lateef¹; Akinola, Norah O.¹; Ademosu, Abdulwaheed¹

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Objective The objective of this work was to analyse the diagnostic BCR-ABL transcript types expressed by Nigerian CML patients and compare with published reports from other populations.

Methods Fresh EDTA anticoagulated peripheral blood (PB) samples from consenting CML patients enrolled between from January 2014 through May 2017 were subjected to RT-PCR for identification of BCR-ABL transcript variants. BCR-ABL1 mRNA was extracted from PB, either directly from the whole blood using “ZR Whole Blood RNA Mini Prep” or from buffy coat using the “Quick RNA Mini Prep”. The mRNA was converted to cDNA using “Protoscript II First Strand cDNA Synthesis Kit”. The cDNA was finally subjected to RT-PCR using “Seeplex” (Leukaemia BCR/ABL) kit; the BCR-ABL variants generated were analysed in agarose gel.

Results There were 230 CML patients, aged 10–87 (med, 38) years; 124 males, 106 females (M:F, 1.2: 1). Frequencies for e13a2, e14a2 and both e13a2 and e14a2 types were 8.7%, 51.3% and 37.8%, respectively, compared to 32%, 68% and 0.36%; 42%, 41% and 18%; 41%, 45% and 14% among Koreans (Translational Research 2006; 148:249–256), American Caucasians (Blood. 2016;127(10):1269–1275) and Germans (Haematologica. 2014; 99(9):1441–1447, respectively. E19a2 variant was seen in 1.3% and 0.7% of Nigerian and Korean patients, respectively; also, the rare e1a3 was recorded in less than 0.5% of the patients. Nigerian patients carry the largest burden of combined e13a2 and e14a2 (37.8% of 230), compared to less than 1% of the 548 Koreans; however, the frequencies of these variants were similar for both Europeans and American Caucasians, 18 % of 481 and 14% of 1105, respectively. There was no gender bias in all the cases.

Conclusions The coexpression of e13a2 and e14a2 is the highest in literature. CML patients with p190 and e19a2 were rare. The importance of these variants on the clinical features of the disease are being investigated.

POSTER

WELCOME RECEPTION AND POSTER SESSION ONE

16:30–18:00

Tuesday
7 November

Dusengimana, Jean-Marie Vianney

P121 | IMPACT OF A BREAST CANCER EARLY DETECTION INTERVENTION ON TIME TO EVALUATION OF PATIENTS WITH BREAST CONCERNS IN RURAL RWANDA

Dusengimana, Jean-Marie Vianney¹; Fehr, Alexandra E.¹; Hategekimana, Vedaste²; Keating, Nancy L.^{4,5}; Mpunga, Tharcisse²; Shulman, Lawrence N.³; Pace, Lydia E.^{4,5}

¹Partners In Health; ²Ministry of Health; ³University of Pennsylvania;

⁴Brigham and Women's Hospital; ⁵Harvard Medical School

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Background Previous research at Butaro Cancer Center of Excellence (BCCOE), a national referral cancer center located at Butaro District Hospital in rural Rwanda, identified substantial patient and system delays in the diagnosis of breast cancer and found that longer delays were associated with advanced stage disease. To address this issue, we randomized 12 of 19 health centers (HCs) in Burera District to receive a training intervention for rural community health workers to promote earlier presentation of symptomatic patients. To reduce system delays, we trained nurses in 12 intervention HCs in the evaluation and prompt referral of patients with concerning symptoms. Seven HCs served as controls. This aims to assess whether the intervention impacted the length of time experienced by patients prior to evaluation at BCCOE.

Methods From May 2015-July 2016 we administered an in-person survey to female patients referred to the BCCOE oncology clinic from intervention or control HCs for evaluation of breast concerns. Surveys focused on timing of symptom onset and receipt of care. Three time intervals were calculated between: 1) first noticing symptoms to seeing a doctor or nurse (patient delay), 2) first seeing a doctor or nurse to attending oncology clinic (system delay), and 3) first noticing symptoms to attending oncology clinic (total delay). Median time was calculated for all three intervals and compared between control and intervention patients using Wilcoxon rank-sum tests.

Results A total of 220 patients were included: 38 from control HCs, and 182 from intervention HCs. The median age of all patients was 31.5 (IQR: 24.1–40.3). Overall, 85% first sought care from a HC, 14% from a traditional healer, and 2% from a community health worker ($p=0.42$). The median patient delay was 65 days (IQR 22–440) for patients referred from control HCs, and 75.5 days (IQR: 16–271) for patients referred from intervention HCs ($p=0.62$). System delay was 46 days (IQR: 19–265) for control HCs and 21.5 days (IQR: 8-92) for intervention HCs ($p=0.039$). And, lastly, total delay was 265 days (IQR: 79–927) for patients referred by control HCs and 178 (IQR: 69-605) for patients referred from intervention HCs ($p=0.303$).

Conclusion This pilot early detection intervention significantly decreased the length of time patients with breast concerns experienced between their first visit to a health facility and evaluation at a referral center. However, we did not detect a significant reduction in length of patient delays. Further analyses will assess the impact on clinical outcomes.

PRESENTATION

Dvaladze, Allison

PHASED IMPLEMENTATION OF RESOURCE STRATIFIED GUIDELINES FOR BREAST CANCER MANAGEMENT

**NATIONAL
CANCER
CONTROL
PLANS & OTHER
ABSTRACTS**
13:30–14:30
Friday
10 November

Dvaladze, Allison¹; Duggan, Catherine²; Gralow, Julie¹; Anderson, Benjamin¹
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Estimates suggest that 5.8 million women will die from breast cancer by 2025, with a disproportionate number of these deaths occurring in low-resource settings. Higher case fatality rates in low-resource settings have been attributed to a lack of awareness regarding the benefits of early diagnosis and treatment, late stage diagnosis and limited access to appropriate care. Systematic approaches are needed to address this challenge and reduce disparities in breast cancer outcomes.

Through a series of five global summits from 2002–2012, the Breast Health Global Initiative (BHGI) developed evidence-based resource-stratified guidelines for breast cancer control at different resource levels. Based on these guidelines, a set of 14 Knowledge Summaries for Comprehensive Breast Cancer Control (KSBC) was produced to help guide key policy interventions and practices based on existing evidence. However, review of breast cancer control efforts in low- and middle-income countries (LMICs) identified the need for a model to bridge the gap between evidence-based planning and the implementation or scale up of breast cancer diagnosis and treatment programs.

Based on situational analyses of breast healthcare in different resource settings, BC12.5 partners developed a phased implementation model for breast cancer management appropriate to any resource setting. The model outlines an adaptable framework for stepwise implementation of health system requirements. The establishment of successful and systematic management of clinically detectable (palpable) breast disease is essential before implementation of population-based screening.

The 4-phase approach is intended to guide policymakers and clinicians in the development of effective, sustainable systems for improved breast healthcare delivery in low-resource environments.

Prerequisites Standardized protocols, functional referral system, guidelines and trained healthcare workforce

- Phase 1 (diagnostic): Systematic triage and management of palpable (symptomatic) breast disease
- Phase 2 (pathways): Strengthening of resource-adapted patient-centric care pathways
- Phase 3 (scale up): Scaling up of targeted educational interventions for both public and health care staff and clinical breast examination (CBE) to promote early diagnosis of clinically detectable disease; and
- Phase 4 (screening): Systematic upgrading of image-based diagnostic systems for management of non-palpable disease as a prerequisite to image-based (mammographic) screening.

This is the first in a forthcoming series of models intended to help bridge the gap between evidence-based planning and implementation and guide systematic improvements in breast healthcare management in low-resource environments.

POSTER

WELCOME RECEPTION AND POSTER SESSION ONE

16:30–18:00

Tuesday

7 November

Ebusu, Paul

P044 | COORDINATION OF CIVIL SOCIETY EFFORTS FOR A SYSTEMATIC CONTRIBUTION TOWARDS EFFECTIVE CANCER CONTROL IN UGANDA

Ebusu, Paul¹; Angiji, Evelyn¹; Asimwe, Patience¹

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Introduction Coordination is a key pillar and the very heart of founding UCS. As an umbrella organisation, UCS is charged with coordinating civil society efforts for a systematic contribution towards effective cancer control in Uganda through fostering collaborative advocacy, awareness creation, capacity building, research and patient support. In its strategic plan 2016–2021, UCS highlights development and implementation of a coordination framework to guide the attainment of its mission and objectives. As such, UCS has developed a coordination framework.

Aim To guide civil society collaboration efforts for a systematic contribution towards effective cancer control in Uganda.

Approach UCS developed a coordination framework which defines the four levels of coordination that is at sub national, national, regional and International levels while identifying dimensions for its success. The principles of transparency and accountability, voluntary commitment, respect for the autonomy of members, cooperation, collective responsibility, ownership, patient centeredness and unity will guide the culture and behavior of participating stakeholders within the coordination framework. The structure of the coordination framework entails UCS Board of Directors at the top, UCS secretariat and steering committee, the coordination forum and member organisations. The steering committee will comprise of heads of member organizations who will sign a Memorandum of Understanding to show commitment to the coordination function. They will meet biannually with the role of providing strategic direction and oversight. The Coordination function will be managed and implemented by the coordination forum supported by UCS secretariat. The Coordination forum will comprise of organizations' focal persons who will report back to steering committee and the UCS Secretariat. This coordination forum will meet quarterly to discuss joint plans, review progress made and discuss solutions to challenges met.

Expected Outcome The coordination function once successfully will provide room for building synergies and mutual collaboration among civil society organisations for effective cancer control amidst limited resources. It will also reduce duplication of activities resulting from diverse visions of member organisations which may cut across. There will also be standardization of key operations within minimum agreed standards for quality services delivery. Last but not list, coordination will provide for a stronger and united voice for awareness creation and advocacy.

Conclusion Effective coordination will foster a systematic contribution of civil society efforts to effective cancer control in Uganda through joint planning, harnessing synergies and minimizing duplication as well as present a united front for awareness creation and advocacy.

POSTER

WELCOME RECEPTION AND POSTER SESSION ONE

16:30–18:00

Tuesday

7 November

Edgerton, Mary

P172 | A QUALITY ASSURANCE (QA) INITIATIVE FOR IMPROVING PATHOLOGY DIAGNOSIS AND BIOMARKER ASSESSMENT FOR BREAST CANCER IN ZAMBIA

Edgerton, Mary¹; Chama, Allen²; Shibemba, Aaron²; Mwala, Kabisa²;
Mwaba, Catherine³; Bailey, Mark¹; Black, Dalliah¹

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Background Breast cancer is the second most common female cancer in Zambia. Neighboring countries report a high incidence that is negative for estrogen receptor (ER), progesterone receptor (PR), and her2neu protein (HER2). The University Teaching Hospital histopathology laboratories in Lusaka routinely receive breast specimens for which the breast biomarkers could be assessed; however false negative immunohistochemistry (IHC) results are of concern due to the lack of quality assurance (QA) in pathology.

Methods A team of breast specialists from MD Anderson Cancer Center held a week-long workshop at University Teach Hospital (UTH) in Lusaka with follow-up monthly web conferences on pathology. Cold ischemic time (time between surgical excision and being placed in formalin) and inadequate buffering of formalin were identified as root causes of poor tissue morphology that could also lead to false negative IHC results. A modified gross assessment and fixation protocol was implemented utilizing locally constituted 10% neutral buffered formalin (NBF). Breast specimens were transferred directly from surgery to pathology for immediate gross assessment and placement into NBF. Important processing times were recorded. The manual citrus-based antigen retrieval polymeric detection IHC technique was implemented for ER, PR and HER2. Status of internal controls for ER and PR was recorded. Biomarker demographics were expressed as molecular subtypes of breast cancer as follows: Luminal A (Lum A) patients were defined as ER+/PR+/HER- with a Nottingham mitotic score of 1 while mitotic score of 2 or 3 were classified as Luminal B (Lum B). HER2 type was defined as any HER2+ (>10%, 3+), and triple negative as ER-/PR-/HER2- (TNBC). FISH was not available and so equivocal HER2 were considered negative.

Results Data has been collected for 15 patients ranging in age from 29-80 years (average and median 54.6 and 56.5 years). One patient had no residual tumor after neoadjuvant therapy. Remaining 14 breast cancers that were tested had positive internal ER/PR controls. 50% of the tumors are triple negative while less than 10% are Lum A, which has the best prognosis.

Conclusion A QA program with IHC testing for breast cancer specimens has been implemented in Zambia as a model for low resource countries. An on-site workshop, close engagement of the Zambian physician team, and continuing communications are believed to have contributed to its success. Definitive molecular characterization of breast cancer in Zambia is ongoing with early results indicating approximately 50% of women have triple negative breast cancer.

POSTER

WELCOME RECEPTION AND POSTER SESSION ONE

16:30–18:00

Tuesday

7 November

Effi, Ahoua

**P017 | MOLECULAR CLASSIFICATION OF BREAST CANCER IN CÔTE
D'IVOIRE**

Effi, Ahoua¹; Kouï, Baumaney; Aman, Nguïssan¹; Koffi, Kouadio¹;
Traore, Cheick¹; Kouyate, Mohamed²

¹University of Bouake; ²Treichville Teaching Hospital

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Objective To determine the molecular subtypes of breast cancer and their correlation with clinicopathologic features for the evaluation of the specific prognosis and the adequate strategy therapy for patients.

Methods That was a cross-sectional study conducted from October 2014 to December 2016. On each specimen, a standard histological examination was made and supplemented by the immunohistochemistry testing using the Ventana BENCHMARK® GX. Four antibodies were used: ER (clone SP1), RP (clone 1E2), HER2/neu (4B5 clone), and Ki67 (clone 30–9). The studied variables were clinicopathologic (age, menopausal status, histological type, and Nottingham grade) and immunohistochemical (ER, PR, HER2, and Ki67). The immunohistochemical expression of ER, PR, HER2, and Ki67 allows to classify breast cancer into five molecular subtypes: luminal A, luminal B/HER2-, luminal B/HER2 +, non-luminal/HER2+, and triple negative.

Results The study included 300 primitive breast carcinomas in patients aged from 24 to 86 years with a mean age of $47,21 \pm 10,49$ years. The predominant histological type was invasive ductal carcinoma not otherwise specified (236 cases, 78.66%). Tumor grade II was the most frequent (154 cases, 59.92%). 162 cases (54%) and 121 cases (40.33%) of patients expressed ER and RP, respectively. The overexpression of HER2 was 51 cases (17%). Ki67 was positive in 224 cases (74.66%). The triple negative was 106 cases (37,19%) followed by 82 cases (28,77%) of luminal B, 46 cases (16.14%) of luminal A, 36 cases (12.63%) of luminal B/HER2+, and 15 cases (5.26%) of non-luminal HER2+. It was not noted a correlation between the molecular subtype and the age of the patients ($p = 0.968$), the menopausal status ($p = 0.062$), the histological type ($p = 0.300$); however, a strong association was observed between the subtype and the tumor grade ($p = 0.00001$).

Conclusion The characterization of the molecular subtypes of breast cancer is now possible in Côte d'Ivoire, and thus, contributing to a better care of patients. A complementary study should be conducted to determine the underlying reasons of the high proportion of triple negative group.

POSTER

Ekanem, Ima-Obong

**P414 | FIVE YEAR CANCER INCIDENCE IN CALABAR, NIGERIA
(2009–2013)**

**WELCOME
RECEPTION
AND POSTER
SESSION ONE**

16:30–18:00

Tuesday

7 November

Ekanem, Ima-Obong¹

¹University of Calabar

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Objectives Cancer incidence rates for the 5 year period (2009–2013) are presented for the Calabar Cancer Registry, a population-based cancer registry (PBCR) in Calabar, capital of Cross-River State, Nigeria.

Methods Information on cancer cases was collected from University of Calabar Teaching Hospital, two general and six private hospitals and one private laboratory within its coverage area. Patients' records, laboratory reports provide information on cancer diagnosis, treatment given and when applicable, autopsy records provide data on cancer-related deaths. Using IARC CanReg-5 software, abstracted information on registration forms are checked for duplicate registrations as well as validity of recorded information during data entry. Tumour topography and morphology were coded using the ICD-0 3 and converted to the appropriate code in ICD-10 for results tabulation. Multiple primaries are recorded according to the 2004 IARC/IACR rules adhering to guidelines with respect to the preservation of confidentiality during collection, storage, use and transmission of identifiable data.

Results 719 new cancer cases were registered comprising 320 men (ASR of 78.8 per 100,000) and 399 women (ASR of 86.9 per 100,000) in the 5 years. Overall (both sexes), 6% of cancer cases (n=44) occurred in childhood (ages 0–14), and 12% in the elderly (ages 70 or more). Females with cancer were, on average, younger at the time of diagnosis (43.6, compared with 52.3 in males), with the numbers in different age groups being very different. 46% of women were aged 30–49 at diagnosis compared with 20% of men, while 21% of men with cancer were aged 70 or more, compared with just 5% of women. Breast and cervical cancers account for 60.4% of all cancers in women, with breast cancer (ASR 35 per 100,000) almost twice as common as cervix cancer (ASR 21 per 100,000) and occurring in rather younger women. Prostate cancer was the most common cancer in men (ASR 50.8 per 100,000). Hodgkin's lymphoma was common in both sexes, and there were moderate numbers of HIV-related cancers recorded.

Conclusion Three cancers dominate in Calabar: prostate cancers in men (50% of male cancers) and breast and cervix cancers in women (60% of female cancers) underlining the need for programmes of early detection to improve their outcomes and for prevention of cervix cancer through vaccination and screening. Despite the relatively low numbers recorded, the Calabar Cancer Registry, along with other population-based registries in Nigeria, should provide vital information for planning and evaluation of programmes for cancer control.

POSTER

WELCOME
RECEPTION
AND POSTER
SESSION ONE
16:30–18:00
Tuesday
7 November

El-khatib, Ziad

P099 | CERVICAL CANCER STILL NEEDS FURTHER ATTENTION IN SUB-SAHARAN AFRICA, DESPITE THE SUCCESS OF ANTIRETROVIRAL THERAPY IN CONTROLLING THE HIV EPIDEMIC – POPULATION BASED REGISTRY ANALYSIS FOR YEARS 1995, 2005, 2010 AND 2015

El-khatib, Ziad^{1,2,3,4}; Ghebre, Rahel^{5,6,7}; Ntirushwa, David⁸; Park, Paul^{1,2}; Ndahimana, Jean d'Amour²; Hedt-Gauthier, Bethany^{1,9}

¹Partners in Health; ²Harvard Medical School; ³Karolinska Institute; ⁴University of Quebec in Abitibi-Temiscamingue (UQAT); ⁵University of Minnesota Medical School; ⁶Yale University; ⁷Health Resources for Health, Kigali; ⁸University Teaching Hospital of Kigali; ⁹Harvard T.H. Chan School of Public Health

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Introduction In the pre-antiretroviral therapy (ART) era, HIV infection was considered as the major fueling factor to cancer development. Among women with HIV infection and low CD4 cell count, cervical cancer related mortality has increased. Starting in 1996, a wider introduction of ART reduced cancer associated mortality in HIV infected patients. The aim of this study is to assess population based trends in cervical cancer and HIV mortality during the progressive increased uptake of ART in HIV infected women in low and high prevalent HIV regions.

Methods This study was conducted utilizing publicly available data from the Global Burden of Diseases (GBD) study. The data on mortality rate due to cervical cancer and HIV were extracted independently, then linked according to age groups and geographical regions in sub-Saharan Africa.

Results The result of this study documented a reduction in HIV associated mortality among women with limited decrease in cervical cancer mortality. HIV/cervical cancer mortality ratio was at 6.4 in 1995, 16.7 in 2005 at the peak of HIV mortality in SSA and decreased to 8.7 in 2015 reflecting a sharp decline in HIV mortality. In SSA, the HIV mortality rate, among women, showed a reverse U shaped curve, starting at 52.3 per 100,000 in 1995, up to 200 per 100,000 in 2005, with a gradual decrease down to 88.2 per 100,000 in 2015. In the same time period there has been minimal shift in cervical cancer mortality across all SSA sub-regions, the highest in 2015 was documented in southern SSA at 18.7 per 100,000. Age associated cervical cancer death was noted with the highest ranges at > 70 years of age in in all SSA sub-regions, with age reversal in HIV mortality with highest burden of death in the age group of 15–49.

Conclusion The results of this assessment demonstrate a persistent high burden of cervical cancer mortality, although the trends vary based on regions within SSA and age groups. The highest continued burden of cervical cancer mortality is found in older women, in contrast with highest burden of HIV associated mortality, found in younger aged women ages 15–49. Initiatives targeting cervical cancer control can consider factors beyond HIV risk population to optimally reduce cervical cancer burden in SSA.

POSTER

WELCOME RECEPTION AND POSTER SESSION ONE

16:30–18:00

Tuesday
7 November

Elmore, Shekinah

P045 | QUALITY OF LIFE AND PSYCHOSOCIAL CONCERNS AMONG WOMEN WITH BREAST CANCER AND CERVICAL CANCERS IN RWANDA: A MIXED-METHODS, CROSS-SECTIONAL STUDY

Elmore, Shekinah^{1,2}; Rubagumya, Fidel³; Mpanumusingo, Egide⁴;
Fadelu, Temidayo⁶; Mpunga, Tharcisse⁴; Tapela, Neo⁵

¹Harvard Radiation Oncology Program; ²Harvard Medical School; ³Muhimbili
University of Health and Allied Sciences; ⁴Ministry of Health, Butara; ⁵Ministry
of Health, Gaberone; ⁶Dana-Farber Cancer Institute

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Introduction Breast and cervical cancers rank as the most prevalent malignancies among women, globally, with significant and increasing burden in low- and middle-income countries. Consequently, efforts to improve diagnosis and clinical care have appropriately multiplied. However, the exploration and integration of patient perspectives on care has lagged behind, even as they are particularly critical given the social and financial implication of women's cancers, in particular. We undertook a study of the experiences of patients with cancer at the Butaro Cancer Center of Excellence (BCCOE) in Rwanda, including a subset of women with breast and cervical cancers.

Methods A cross-sectional, mixed-methods study of adult patients with a pathologically or clinically confirmed diagnosis of cancer enrolled at BCCOE was conducted from 2014–2015. Quantitative cohort patients completed translated, adapted versions of validated quality of life and patient satisfaction questionnaires (EORTC – QLQ-C30, QLQ-SAT32). Qualitative cohort patients completed structured, open-ended interviews generally lasting at least one hour.

Results 138 women with either breast or cervical cancer completed detailed quantitative surveys, while nine completed qualitative interviews. Among the survey cohort, median age was 50 years (IQR: 44–61). Patients reporting feelings of worry, pain, and limitations in work or daily activities within the past week as “quite a bit” or “very much” were 51%, 54%, 72%. Patients reporting social, family, and financial strain attributable to illness and treatment as “quite a bit” or “very much” were 57%, 72%, and 93%. Among the qualitative interview cohort, women reinforced themes of difficulty with transportation, caring for children and relatives, adequate food support, and raise uncertainties around current and future relationships with their body and with their husbands, if partnered. Representative patient quotes will be integrated into the presentation.

Conclusion Breast and cervical cancer patients interviewed are unsurprisingly struggling with the integration of treatment with their daily existence and social roles, particularly with regard to childcare and food preparation. This difficulty is often heightened by the multiple health facilities across provinces and even countries that a woman visits to receive comprehensive cancer care. Providing a clear roadmap for patients with additional financial, logistical, and emotional supports along the journey from diagnosis to active treatment and on to survivorship is critical to patient well-being, adherence to care, and improved clinical outcomes.

POSTER

POSTER SESSION TWO

16:30–18:00
Thursday
9 November

Elshamy, Karima

P343 | PALLIATIVE CARE NEEDS OF WOMEN WITH ADVANCED BREAST CANCER AT ONCOLOGY CENTER MANSOURA UNIVERSITY, EGYPT

Elshamy, Karima¹; Abobakr, Heba¹
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Background Breast cancer is the most common cancer of women worldwide. In Egypt, the disease is often advanced at diagnosis, and the mortality is still high.

Aim of the study This study was conducted in inpatient department and outpatient clinics at Oncology Center Mansoura University to assess palliative care needs of women with advanced breast cancer.

Methods A descriptive cross sectional design was used in this study.

Subjects A purposeful sample of 100 women with advanced breast cancer was selected.

Tool of the study Palliative care needs assessment questionnaire, in addition to socio demographic data and medical history of patients was used.

Results The results of this study revealed the majority of the studied women had poor psychological issues (98%), all of them had poor financial issues and additional expenses (100%), the highest percentage of them had severe physical symptoms (85%), about two third of them had poor self-dependence issues (69%) and poor educational issues (73%).

Conclusions Psychological issues were the highest palliative care needs among women with advanced breast cancer followed by physical issues. There was a statistical significant difference between age and activity of daily living among advanced breast cancer women.

Recommendations

1. Establish written protocol about palliative care for women with advanced breast cancer
2. Develop palliative care programme to oncology nurses who caring for women with advanced breast cancer
3. Strategies on the prevention and early detection programmes should focus on implementation to decrease the prevalence of advanced breast cancer women in Egypt.

POSTER

WELCOME RECEPTION AND POSTER SESSION ONE

16:30–18:00

Tuesday

7 November

Eltom, Sakina

P018 | THE ARYL HYDROCARBON RECEPTOR: AN EMERGING DRUGGABLE TARGET FOR METASTATIC BREAST CANCER

Eltom, Sakina¹; Goode, Gennifer¹; Manning, Charles¹; Ballard, Billy¹;
Olivares, Maria²; Prins, Petra¹; Kishinhi, Stephen¹

¹Meharry Medical College; ²Vanderbilt University Medical Center

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The aryl hydrocarbon receptor (AhR) is a ligand-activated transcription factor that was historically identified as a sensor for environmental chemicals and was shown to mediate chemical-induced carcinogenesis. Recent reports, including data from our laboratory implicate AhR in breast cancer development and progression independent of the receptor occupancy by PAH. We examined the expression of AhR by immunohistochemistry in tissue microarrays (TMA) containing 192 specimens of clinically defined three stages of invasive breast cancer: node-negative (NN), node-positive (NP) and metastatic (Met) carcinoma. The TMA were obtained from the National Cancer Institute Cooperative Breast Cancer Tissue Resource [NCI-CBCTR] and were stained for AhR using high affinity antibody. The AhR staining was then scored by three evaluators, including two pathologists. Statistical analysis showed a strong association between the AhR expression and the carcinoma case type (NN, NP or Met) (p-value of ANOVA is < 0.0001), and strong association between the AhR expression the stage of the disease (p < 0.0001). Whereas there is no correlation of AhR expression with the status of estrogen or progesterone receptors (p=0.1643 and 0.1884, respectively). These findings identify the AhR as a new predictive clinical marker for metastatic and advanced breast cancer. More importantly, the AhR overexpression will identify a subset of patients who could benefit from therapy targeting this receptor. To understand the significance of AhR in driving breast cancer we first investigated the causal effect of ectopic overexpression of AhR in immortalized normal human mammary epithelial cells (iHMEC). These studies demonstrated that AhR is capable and sufficient to induce malignant phenotypes, including increased colonization of soft agar and acquired invasive capabilities proportional to AhR expressed level. Most notably, the ectopic overexpression of AhR in iHMEC induced their epithelial-to-mesenchymal transition (EMT), an initial step of invasion and metastasis. We further depleted AhR in the metastatic MDA-MB231 breast cancer cell line, which inherently express high levels of AhR, by stable knockdown of its expression by shRNA and analyzed the tumorigenic properties of the resulting transformed cells using in vitro and in vivo model systems. Results showed that AhR depletion in these metastatic cells has attenuated their tumorigenic properties in vitro including proliferation, anchorage independent growth and apoptosis and also reduced their orthotopic xenograft tumor growth in vivo and more remarkably resulted in suppression of lung metastasis in a nude mouse. Collectively, our data identify AhR as a potential novel therapeutic target in metastatic breast cancer.

PRESENTATION

Elzawawy, Ahmed

COULD WE REALLY REDUCE THE GAP BETWEEN THE REQUIRED AND THE AVAILABLE RADIATION AND CLINICAL ONCOLOGY SERVICES IN AFRICA AND GLOBALLY?

**RADIATION
AND CHEMO-
THERAPY**

Elzawawy, Ahmed¹

¹ICEDOC / SEMCO

14:40–16:30

Thursday

9 November

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Despite of the declarations, publications, commissions and conferences of different organizations and societies the gap between the required and the available radiation and clinical oncology services in Low and Middle Income Countries LMICs and particularly in Africa is increasing. In fact, there are efforts done but there is difference between the definitions of activities and achievement of real big reduction of this gap. The Win-Win initiative aims at the increase of affordability of better value cancer care in the world via exploring scientific approaches and with consideration of the interests and incentives of different stakeholders. This implies that in the real world in order to make a remarkable reduction of the gap in cancer patients care services for patients there should be potentialities for maximization of the number of winners. Those are essentially cancer patients in addition to all stakeholders including pharmaceutical companies and radiotherapy manufacturers companies. The Initiative that originally proposed by ICEDOC's Experts in Cancer Without Borders www.icedoc.org has become in April 2016 The Harvard Global Health Catalyst Win-Win Initiative (www.icedoc.org/winwin.htm). It is not to compete or to replace with any effort, but it is to an action of volunteers to catalyze, to collaborate and to cooperate. It is opened for all who would like to contribute by actions. We stress on the lack of radiotherapy – clinical oncology services in Africa in the start as it apparently represents the most difficult challenges and deficit in services in the world. There are barriers and myths to overcome and not stop by. However, we shows in conferences, and publications potential models and proposals for resource sparing better value cancer drugs and radiotherapy care without compromising the overall outcome on patients. There are real accomplished and other rising projects and proposals that needs the cooperation by realistic – but scientific – thoughts, advice and contribution by many in order to increase affordability of better value cancer care in Africa and globally.

PRESENTATION

Elzawawy, Ahmed

MOBILISATION OF RESOURCES FOR CANCER CARE SERVICES IN AFRICA: MYTHS, REALITIES AND HOPES

**FINANCING
HEALTH CARE**

Elzawawy, Ahmed¹

¹ICEDOC / SEMCO

08:25–09:25

Wednesday

8 November

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It is frequently cited that the lack of resources is one of the most difficult barriers to get accessible cancer care services in Africa. We present that there is a vicious circle of the stereotype information and myths, the lack of effective mobilization of resources, the inadequate stimuli to the realistic incentives of different stakeholders and the tragic continuation of classic declarations, publications, and conferences of different organizations and societies while the gap between the required and the available cancer services is increasing. In fact, Africa is not with limited resources, but with resources that are not utilized or not mobilized to serve cancer care. The Win-Win initiative aims at the increase of access to value based and resource sparing-whenver scientifically possible- cancer care without compromising the overall outcome via scientific approaches and with consideration of the realistic interests of different stakeholder www.icedoc.net Hence, It is hoped that there would be more possibilities to mobilize resources for the enhancement of cancer care facilities in Low and Middle Income Countries (LMICs). Since April, 2016, The Win-Win Initiative became a part of the World activities of Harvard Global Health Catalyst and we stress on Africa as a start as it represents the most difficult challenge to face (www.icedoc.org/winwin.htm)

POSTER

Emeagi, Maurel

P274 | PROFESSIONAL NURSES' AWARENESS AND PRACTICE WITH SEXUAL CONCERNS OF THE ONCOLOGY PATIENT

**POSTER
SESSION**

TWO

16:30–18:00

Thursday

9 November

Emeagi, Maurel¹; de Swardt, Hester¹

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Sexuality is an important aspect of quality of life (QOL). QOL after cancer therapy is an important aspect of patient care of which sexual well-being forms part of the holistic nursing care. Although sexuality assessment is recognized as an important part of nursing care, in practice it has been observed that professional nurses may experience some difficulties to this aspect.

Purpose The purpose of this study was to gain a deeper understanding of the awareness, practice and possible barriers of professional nurses when engaging in conversation about sexuality with patients receiving cancer treatment in a private oncology care setting in Pretoria, South Africa.

Objectives The research objectives were:

- To explore and describe the awareness and practice of professional nurses to engage in conversation about sexuality with the patient receiving cancer treatment in a private oncology setting in Pretoria.
- To describe possible barriers that prohibit professional nurses to engage in conversation with patients receiving cancer treatment in a private oncology setting regarding sexuality
- To make recommendations to improve nursing practice with regard to nursing care related to sexuality in the private oncology care setting.

Method An exploratory, descriptive and qualitative design was followed. A convenient purposive sample consisting of eight participants who met the inclusion criteria participated. Data were gathered through semi-structured interviews, while Creswell's method of data analysis was applied. Trustworthy measures included credibility, transferability, dependability and confirmability. This study obtained ethical clearance from all stakeholders.

Results The themes embarrassment, cultural beliefs and values emerged as barriers to engage in conversation about sexuality while, referring to a specialist in the field as suggested support to cancer treated patients arose. Limited knowledge about intensive therapy featured as the last theme. The data revealed that professional nurses themselves had restricted views on sexuality and very often would see the patient's body image and associated sexuality as not their responsibility. The concept intensive therapy was not fully understood which led to limited referral to various specialist.

Conclusions Professional nurses should be sensitized and empowered with the skills and knowledge on how patients' perception of their body image changed when been treated with cancer and the effect thereof. Reflective conversations about this sensitive topic could assist in this regard.

PRESENTATION

AFFORDABLE TECHNOLOGY IN GLOBAL ONCOLOGY

14:40–16:00

Friday

10 November

Erickson, David

POINT-OF-CARE DIAGNOSIS OF KAPOSI'S SARCOMA IN LIMITED RESOURCE SETTINGS USING TINY TECHNOLOGY

Erickson, David¹; Semeere, Aggrey²; Mauer, Toby³; Martin, Jeffrey³; Cesarman, Ethel⁴

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We have developed and are clinically validating a rapid, point-of-care platform for the diagnosis of Kaposi's sarcoma (KS) that can be used in resource-limited settings. Our TINY (Tiny Isothermal Nucleic acid quantification sYstem) device uses an isothermal nucleic acid amplification system to quantify Kaposi's sarcoma-associated herpesvirus (KSHV) DNA in clinically suspicious KS lesions in HIV infected subjects. We have determined thresholds of KS virus within lesions which would indicate KS in lesions that are consistent with the histopathologic diagnosis of KS. We have also validated KS DNA levels that are NOT indicative of KS in clinically and pathologically non-KS lesions that are often mimickers of KS in HIV infected subjects. Our platform is portable, weighing 1.1 kg, is easily capable of transportation between rural health clinics, and is resistant to electricity outages, as a phase change material enables the system to perform assays for 65 minutes after energy disruption, or indefinitely without disruption. The system can alternatively also be powered by flame or solar energy. The quantitative read-out of KSHV DNA content is then interpreted as being indicative of KS or showing no evidence of KS, using cut-offs we have established. In this talk, we present preliminary data from a number of biopsy samples from Uganda which were tested using our point-of-care platform, conventional laboratory-based quantitative PCR, and gold standard pathology.

POSTER

POSTER SESSION TWO

16:30–18:00
Thursday
9 November

Ermel, Aaron

P440 | AMPATH ONCOLOGY: BASELINE ONCOGENIC HUMAN PAPILOMAVIRUS PREVALENCE IN KENYAN WOMEN ENROLLED IN A LONGITUDINAL STUDY OF CERVICAL DYSPLASIA

Mania, Titus⁴; Tonui, Philip³; Ong'echa, John Michael²; Brown, Darron¹; Ermel, Aaron¹; Tong, Yan¹; Orang'o, Omengo³

¹Indiana University School of Medicine; ²Kenya Medical Research Institute;

³Moi Teaching and Referral Hospital / Moi University School of Medicine;

⁴Maseno University

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Introduction Cervical cancer is a common malignancy among Kenyan women. To define modifiable factors predicting incidence and persistence of HPV and cervical dysplasia in HIV-infected/uninfected women with normal VIA at enrollment (baseline), 223 women were enrolled in a longitudinal study.

Methods Women ages 18 to 45 years old were enrolled in a cervical cancer screening clinic in Eldoret, Kenya. Most who were HIV-infected were receiving anti-retroviral therapy (ART). HIV viral load, CD4 counts, cervical swabs, and behavioral data were collected from participants at enrollment. HPV typing was performed using the Roche Linear Array in Kisumu, Kenya.

Results We report baseline HPV data from 140 participants (73 HIV-infected and 67 HIV-uninfected) whose detailed HPV analysis of baseline samples (cervical swabs) has been completed in Kenya. The median ages for HIV-infected (38 years) and uninfected (34 years) women were not significantly different ($p=0.0633$). The median number of lifetime sexual partners for HIV-infected participants was 4 (range 1–200) and 2 (range 1–10) for HIV-uninfected participants ($p<0.0001$). A wide range of oncogenic HPV types were detected: HPV types 16, 58, 59, and 66 were the most frequently detected types in all women. HPV of any type was detected in 46 of 73 (63.0%) of HIV-infected women and 23 of 67 (34.3%) HIV-uninfected women ($p=.0007$). Any oncogenic HPV type was detected in 36 of 73 (49.3%) of HIV-infected women and 20 of 67 (29.9%) of HIV-uninfected women ($p=.0189$). HPV 16 and/or 18 were detected in 9 of 73 (12.3%) HIV-infected women and 2 of 67 (3.0%) HIV-uninfected women ($p=.0401$). The mean number of oncogenic HPV types detected was 1.65 for HIV-infected women and 1.35 for HIV-uninfected women ($p=.2591$).

Conclusions Oncogenic HPV types, including types preventable by vaccination against HPV, were highly prevalent in women at baseline. HIV-infected women were more likely to have these oncogenic HPV types detected, in spite of ART use in a high percentage of participants. Other HIV-related factors such as the effect of HIV viral load, CD4 count, and timing of ART will be investigated in future analyses. Women will be followed for three years to gain insights into potentially modifiable risk factors for cervical cancer, the most common cause of cancer-related mortality in Kenyan women.

POSTER

Erwin, Erica

P453 | RANDOMIZED TRIAL FOR A MOBILE HEALTH APPROACH TO INCREASE UPTAKE OF CERVICAL CANCER SCREENING IN TANZANIA

Erwin, Erica¹; Aronson, Kristan¹; Day, Andrew²; Ginsburg, Ophira^{3,4}; Oneko, Olola⁵; Yeates, Karen^{1,3}

¹Queen's University; ²Kingston General Hospital Clinical Research Center;

³Division of Cancer Care and Epidemiology, Cancer Research Institute, Queen's University; ⁴Laura and Isaac Perlmutter Cancer Centre; ⁵Kilimanjaro Christian Medical University College

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**POSTER
SESSION
TWO**

**16:30–18:00
Thursday
9 November**

Background Largely due to low availability and uptake of screening in low- and middle-income countries (5%), cervical cancer is the second ranked cancer among women in these countries. This stands despite the fact that cervical cancer is among the most preventable carcinomas. This study investigates the effectiveness of behaviour change communication (BCC) short message services (SMS) and electronic vouchers (eVouchers) covering return transportation to encourage uptake of cervical cancer screening (CCS). The current proportion of women in these countries who are at an advanced stage when diagnosed with cervical cancer is 88%, and it is urgent to reduce this.

Aim There are three aims to this randomized controlled trial. The first aim is to test the effectiveness of BCC SMS on increasing the uptake of CCS compared to women randomized in the control group. The second aim is to test the effectiveness of an eVoucher for return transport to CCS on increasing the uptake of CCS compared to women in the control group. The third aim is to determine attitudes, barriers, and facilitating factors towards CCS and the interventions.

Methods We used systematic random sampling, stratified by urban/rural location, to enroll 851 women in Tanzania between the ages of 25–49 with access to a mobile phone. Participants were randomly allocated to three groups: SMS alone, SMS/voucher, or a control group. A post-screening survey captured attitudes and barriers towards screening and the interventions. Our hypothesis is that the SMS/voucher will increase screening uptake by greater than 10%.

Results Results testing the effectiveness of the SMS and SMS/voucher groups on increasing screening uptake will be presented. Attitudes, barriers, and facilitating factors towards CCS and the interventions will also be presented.

Conclusions This study has high validity, and results will be generalizable to several low and middle-income countries. Effective interventions may be one component of initiatives to increase uptake and thereby reduce the incidence and impact of cervical cancer.

POSTER

WELCOME RECEPTION AND POSTER SESSION ONE

16:30–18:00

Tuesday

7 November

Esther Hortense Murielle, Dina Bell épouse Mbassi ndocko P417 | ETAT NUTRITIONNEL ET IMPACT DE L'ÉDUCATION NUTRITIONNELLE SUR LA TOLERANCE ET LA REPONSE A LA CHIMIOThERAPIE DES PATIENTS PORTEURS DE CANCER A L'HOPITAL GENERAL DE DOUALA

Esther Hortense Murielle, Dina Bell épouse Mbassi ndocko¹
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La dénutrition est une complication fréquente des cancers. Sa prévalence varie de 40 à 80%. En Afrique Noire, peu d'études sont disponibles sur la dénutrition chez les patients porteurs de cancers. L'objectif de cette étude était de déterminer l'impact de l'éducation nutritionnelle sur la tolérance et la réponse à la chimiothérapie des patients porteurs de cancers à l'Hôpital Général de Douala.

Il s'agissait d'une étude comparative randomisée à 2 bras faite sur une période de 5 mois allant de janvier à mai 2017. Un groupe de 53 patients qui recevait une éducation nutritionnelle à chaque cycle de chimiothérapie, et un groupe de 54 patients sans éducation nutritionnelle qui ne recevait que le traitement habituel. La réponse à la chimiothérapie était évaluée à la fin du 3ème cycle de chimiothérapie grâce aux critères RECIST.

L'âge moyen était de 47 ± 15 ans dans le groupe avec 'éducation' et de $46,4 \pm 15,7$ dans le groupe 'sans éducation'. Les cancers les plus rencontrés étaient ceux du sein à 36,4% suivi du cancer du col à 19,4%. La prévalence de la dénutrition à l'inclusion dans notre population d'étude était de 45,8% dont 35,5% était modérée et 10,3% sévère. Les patients du groupe avec éducation nutritionnelle présentaient une nette amélioration de leur statut nutritionnel après les 3 cycles de chimiothérapie ($p < 0.001$), toléraient mieux le traitement avec 96,2% ayant un performans status selon l'OMS évalué après 03 cycles de chimiothérapie inférieur à 2 ($PS < 2$) dans le groupe 'éducation' contre 14,8% dans le groupe 'sans éducation' ($p < 0.001$). La réponse thérapeutique évaluée après 03 cycles de chimiothérapie était significativement supérieure ($p < 0.001$) dans le groupe 'éducation' avec 96,2% de répondeurs contre 25,9% dans le groupe 'sans éducation'.

L'éducation nutritionnelle a eu un impact significatif sur le statut nutritionnel des patients, ainsi que sur la tolérance et la réponse à la chimiothérapie de ceux-ci.

POSTER

Esther Hortense Murielle, Dina Bell épouse Mbassi ndocko P441 | PROFIL EPIDEMIOLOGIQUE, ANATOMOPATHOLOGIQUE ET CLINIQUE DU CANCER TRIPLE NEGATIF DU SEIN AU CAMEROUN

POSTER
SESSION
TWO

16:30–18:00

Thursday

9 November

Esther Hortense Murielle, Dina Bell épouse Mbassi ndocko¹
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Introduction Le cancer du sein reste la principale cause de décès par cancer au Cameroun et ceci malgré les nombreux progrès réalisés dans la prise en charge de cette maladie grâce à l'émergence de thérapies ciblées. La classification moléculaire compte quatre sous-types dont le sous-type "triple négatif". Il représente 15% à 20% de tous les cancers du sein et est caractérisé par l'absence de récepteurs hormonaux et de surexpression du HER-2/Neu. De plus, ce type est associé à un profil clinique défavorable et un haut risque de rechute métastatique précoce. Technique récente au Cameroun pays d'Afrique centrale, l'immunohistochimie reste pratiquée par très peu de patientes du fait de son coût onéreux. Notre étude porte sur le profil épidémiologique, pathologique et clinique de ces cancers du sein triple négatif au Cameroun.

Patients et Méthodes Nous avons mené une étude descriptive transversale de février à août 2016. Ont été inclus 217 patients avec un diagnostic de cancer du sein et un complément d'analyse immunohistochimique.

Résultats Quatre vingt et un cas de cancer du sein triple négatif ont été identifiés, soit une prévalence de 37,33%. La tranche d'âge de 30 à 39 ans était la plus représentée (37,5%, $p = 0,0001$). Le carcinome canalaire invasif était prépondérant (82,09%) suivi du carcinome papillaire invasif (10,45%). Le grade SBR III (47,89%) était le plus fréquent. La majorité des patients avaient un envahissement ganglionnaire ($p = 0,02$).

Conclusion Les cancers du sein triple négatifs touchent les femmes jeunes camerounaises et sont associés à des facteurs pronostiques péjoratifs.

POSTER

WELCOME RECEPTION AND POSTER SESSION ONE

16:30–18:00

Tuesday

7 November

Fadipe, Babatunde

P154 | QUALITY OF SLEEP IN PATIENTS WITH CANCER; FINDINGS FROM A NIGERIAN SAMPLE

Fadipe, Babatunde¹; Olagunju, A.¹; Habeebu, M.¹; Adegboyega, B.¹;
Fatiregun, O.¹; Sowunmi, A.¹; Ojeyinka, A.¹

¹Lagos University Teaching Hospital

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Introduction Sleep is essential to human health, serving restorative functions with enormous physical and emotional benefits. In cancer, illness symptoms, treatment side-effects and psychological or physical co-morbidity may prevent patients from enjoying qualitative sleep. However, till date, there has been no study examining sleep quality among people with cancer from this environment.

Objectives This study is set out to determine the quality of sleep and associated factors among patients with cancer in a Nigerian oncology clinic.

Methods A total of 115 consenting adults with cancer were recruited into the study. Participants were administered a designed questionnaire to profile their clinico-demographic characteristics and Pittsburgh Sleep Quality Index (PSQI) to measure quality and patterns of sleep. Data was analyzed using SPSS-20.

Results The mean age of participants was 47.33 (± 12.86) years, majority of them were female (86.1%) and had breast cancer (67.8%) with slightly above half presenting with advanced stages. The average duration of sleep of was 6.35 (± 1.85) hours. Eighty (69.6%) participants reported poor sleep quality. Nineteen (16.5%) reported having to use sleep medication three or more times a week. Participants who experienced pain in the month prior to the study ($X^2 = 13.117$, $p < 0.001$), used over the counter sleep medications ($X^2 = 25.191$, $p < 0.001$) and advanced stages of cancer ($X^2 = 8.864$, $p = 0.003$) were more likely to report poor sleep quality.

Conclusion Findings in this study suggest the experience of poor sleep quality in association with pain, use of sleep medication and advanced cancers. These should be considered in managing patients as means to improving overall care and outcome.

POSTER

WELCOME RECEPTION AND POSTER SESSION ONE

16:30–18:00

Tuesday

7 November

Faduyile, Francis

P155 | PERCEPTION AND UTILIZATION OF CYTOPATHOLOGY BY MEDICAL PRACTITIONERS IN LAGOS

Faduyile, Francis¹; Soyemi, Sunday¹; Osuolale, Fadesewa¹; Wright, Kikelomo¹
¹Lagos State University

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Background Cancer is an emerging public health problem in Africa especially with increasing exposure to risky life styles and environmental carcinogens. The use of cytopathology is still dismally poor and essentially restricted to a small number of health facilities. This paper examined the perception of medical practitioners on non gynaecologic cytology (NGC) and the utilization of this very important investigative tool amongst medical practitioners.

Methodology This is a cross-sectional study of knowledge, perception and use of NGC by medical practitioners in public and private health institutions in Lagos State. A total of 260 questionnaires were distributed with 130 each to the private and public institution practitioners. The data was analyzed using IBM SPSS version 20 and were presented in tables, frequencies and percentages. Level of statistical significance was set at $p < 0.05$.

Result The mean age of the respondents in both groups was 45 ± 12.05 years. Only 50% and 60% of private practitioners have requested for fluid cytology and fine needle aspiration cytology (FNAC) respectively for a maximum of 2 times in their medical career. The overall knowledge showed that 11.1% of private practitioners had poor knowledge of cytology as against 0.9% of their public institution counterparts.

Conclusions There is good knowledge of NGC amongst doctors but with no reciprocal use of the investigation. The request for fluid cytology and FNAC is very poor amongst the private practitioners. We recommend further training and continuous medical education to doctors especially the private practitioners to increase their awareness and to improve the utilisation of the test.

POSTER

WELCOME RECEPTION AND POSTER SESSION ONE

16:30–18:00

Tuesday

7 November

Faduyile, Francis

P156 | HISTOPATHOLOGICAL STUDY OF SURGICAL CERVICAL BIOPSIES IN LAGOS, NIGERIA

Faduyile, Francis¹; Soyemi, Sunday¹; Williams, Oluseun¹;
Osuolale, Fadesewa¹; Wright, Kikelomo¹
¹Lagos State University

Correspondence abaaye@yahoo.com

Introduction Benign lesions of the cervix comprising hyperplasia, endometriosis, cervicitis and endocervical polyps are common. Cervical cancer is the fourth most common cancer among women in the world. Cervical cancer global burden occurs mostly in the developing countries and most cervical cancer deaths occur there.

Aim This study is aimed to determine the prevalence of cervical biopsy, the histopathologic diagnosis and the prevalence of different sub-classification of the malignancies.

Materials and Method This is an 8-year retrospective study of all cervical biopsies received in the Department of Pathology and Forensic Medicine, Lagos State University Teaching Hospital, Ikeja. All the slides were retrieved and reviewed. Data regarding age and clinical history were obtained from request and clinical notes. The data were analysed using the Statistical Package for Social Science version 20.

Results A total of 901 cervical biopsies were received representing 4.8% of the total biopsy received. The age range is 19 years and 87 years with a mean age of 49 ± 13.0 years. The benign tumours accounted for 58.8% of cases with a benign to malignant ratio of 1.5:1. Squamous cell carcinoma, endocervical polyps, cervical intraepithelia neoplasia and cervicitis accounted for 36.1%, 30.9%, 15.1% and 10.4% of the total cervical biopsies respectively.

Conclusion SCC was the most common diagnosis of cervical biopsies and were mainly well differentiated type. Endocervical polyp was the most common benign tumour of cervical biopsies. There is need to improve the cervical screening programme to stem the tide of the high rate of SCC in our environment.

POSTER

WELCOME RECEPTION AND POSTER SESSION ONE

16:30–18:00

Tuesday

7 November

Faduyile, Francis

**P157 | CYTOPATHOLOGY PRACTICE IN LAGOS STATE UNIVERSITY
TEACHING HOSPITAL, IKEJA, LAGOS, NIGERIA**

Faduyile, Francis¹; Soyemi, Sunday¹; Oyewole, Olugbenga²
¹Lagos State University; ²General Hospital

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Background Fine Needle Aspiration (FNAC) is a simple cost effective and rapid diagnostic technique. It is used in addition with exfoliative/fluid cytology to help clinicians in the management of patients who present with abnormal masses in the body. This study is to present our experience of FNAC and non gynaecological cytology (NGC) in diagnostic cytopathology and highlight the varieties of samples for cytopathology analysis.

Materials and Methods This is a six year retrospective study of all FNAC and NGC specimen seen in Lagos State University Teaching Hospital, Ikeja and LagPath Consulting laboratory, Ikeja, Lagos State between January 2008 and December 2013. All cytopathology reports and records were retrieved and analyzed using the Statistical Package for the Social Sciences version 20. Test for statistical significance was set at $p < 0.05$.

Results A total of 1855 patients were seen during this period with a male female ratio of 1:3 and a mean age of 40.61 ± 17.49 years. Breast FNAC was the most common request seen (37.4%) which was followed by fluid cytology (28%) and then thyroid (12.7%), soft tissues (10.2%) and lymph nodes (9.2%). FNAC breast, lymph node and soft tissues showed 29.5%, 22.2% and 8.9% malignancy rate respectively. Fluid cytology requests were seen more in extreme of ages.

Conclusion FNAC of breast lumps, fluid/exfoliative cytology and thyroid enlargement are the most common specimens seen. Breast lump aspirates showed the highest malignant diagnosis. With continued use of this investigation, training and retraining of pathologists and clinicians in cytopathology is advocated for better result.

POSTER

WELCOME RECEPTION AND POSTER SESSION ONE

16:30–18:00

Tuesday
7 November

Faruk, Mohammed

P425 | COMPARING SALIVARY CORTISOL LEVELS, PERFORMANCE STATUS AS PROGNOSTIC INDICATORS FOR PROSTATE CANCER IN NIGERIAN BLACK MEN

Faruk, Mohammed¹; Mohammed Aminu, Surajo; Bello, Ahmad; Rotimi, Solomon O.; Prostate Cancer Transatlantic Consortium (CaPTC) Members, Global; Odedina, Folakemi T.

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Prostate cancer (CaP), the most significant and common male gender cancer has disproportionate prevalence in men of African ancestry. In African Americans, the incidence and mortality of CaP is 60% and three times higher compared to Caucasians. There is lack of adequate research that focuses on understanding and addressing the risk factors of CaP in Africa. Prostate cancer onset and progression involves the accumulation of multiple oncogenic hits which may be associated to androgen hormones and a consequence spilling of prostate specific antigen (PSA). However, abnormal mutations can contort the androgen receptor molecule in a way that cortisol and cortisone bind to this mutated receptor towards functioning as a ‘pseudo-androgens’ and making CaP cells more aggressive. Thus, it is important to assess whether high cortisol levels and reduced physical activity could be responsible for prostate cancer risk and severity in indigenous Nigerian men and Nigerian men in the Diaspora. In this pilot study, we evaluated the relationship between prostate cancer associated risk factors which include cortisol level and performance status using the Prostate Cancer Transatlantic Consortium (CaPTC) cohort of Nigerian Black Men (NBM) in Nigeria, Cameroon and the United State at clinics and in the community, including the male relatives of subjects recruited. Five hundred male subjects, who meet the selection criteria (Nigerian men regardless of history of CaP diagnosis and between the age of 35 and 70 years) and provide informed consent to participate in the research, were recruited for the pilot study. A baseline behavioral, clinical, epidemiological and environmental variable which explains the etiology of CaP risk was collected from the NBM Familial cohort using standardized C.A.M CaP measures. The subjects provided about 2 mL of saliva for cortisol quantification using the passive drool technique. Saliva was immediately placed on ice and transferred within 4 hours to a freezer at -80oC until analysis. The salivary cortisol was quantified using a commercially available salivary cortisol enzyme immunoassay (EIA) kit (Salimetric Inc, College Park, PA). The results obtained were analysed Pearson product moment correlation for determination of association between the outcome variables. Student t-test was used to determine the differences in cortisol levels and group differences were tested by one-way analysis of variance (ANOVA). Intervention which reduces prostate cancer risk factors in Blacks is one of the crucial means of addressing global cancer morbidity and mortality, the CaPTC presents rational on next line of action for in this regard.

POSTER

Fatiregun, Omolara

**P158 | CLINICAL TRIALS, A KEY TOOL IN IMPROVING BREAST
CANCER SURVIVAL IN NIGERIA**

**WELCOME
RECEPTION
AND POSTER
SESSION ONE**

16:30–18:00

Tuesday

7 November

Fatiregun, Omolara¹; Olopade, Olufunmilayo²; Popoola, Abiodun¹;
Sowunmi, Anthonia¹; Alabi, Adewumi¹; Ogunsanya, Ayodele¹
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Background Clinical trials in Cancer clinical research has continued to sharpen the treatment guidelines and protocols in managing breast cancer in the United States. Clinical research in breast cancer is in its infancy stage in Nigeria. There is an urgent need for more clinical trials in Nigeria geared towards developing treatment algorithms in a bid to improve quality of care, achieve cure or increase survival in Breast cancer patients.

Methodology This article is a qualitative systematic review of all research published on breast cancer since 1963 till 2017. We reviewed all articles found on PubMed and Google scholar search engines by searching “ Breast cancer in Nigeria”. we reviewed the eligible articles and classified them based on their study designs into different levels of evidence. The review included all studies related to breast cancer. Both observational and experimental study designs were reviewed in the study. Study selection: This was conducted in two phases: an initial screening of titles and abstracts against the inclusion criteria to identify publications on breast cancer. Only studies done using Nigerian subjects and published in English language were reviewed. Information extracted from studies include, year of publications, study designs and level of evidence. Data synthesis: Studies selected were grouped into seven levels of evidence .Meta-analysis was not considered in the review due to different study designs and difficulty in pooling them together. Tables and charts were used for data representation.

Results Out of 430 published articles cited relating to Breast cancer, only 282 articles were eligible for the systematic review. 56.4% (159) of studies done on breast were cross sectional studies, followed by case – control studies 11.7% (33), then case reports & series 10.4% (29) ,2.8% (8) & 5.4% (15) were related to expert opinion and basic research, only 1.1% (3) of studies cited were clinical trials registered on clinicaltrials.gov on breast cancer treatment. On Levels of Evidence, Level 6 accounted for 54.9% (155) followed by Level 7, 18.1% (51) then level 4, 11.7% (33), level 1, 2, 3 were 0%, 1.1%, 8.9% respectively.

Conclusion This review shows that a vast majority of research done on Breast Cancer done in the Country are still at the Levels 4, 6 and 7 of Evidence. Clinical trials in Breast cancer treatment are rare in Nigeria, they however provide Level 1, 2 or 3 evidence which helps to develop treatment protocols for Breast cancer Treatment in Nigeria.

PRESENTATION

Fedoriw, Yuri

BIOLOGICAL DIFFERENCES BETWEEN HIV+ AND HIV- DIFFUSE LARGE B-CELL LYMPHOMAS IN AFRICA

LYMPHOMAS

11:00–12:30

Thursday

9 November

Fedoriw, Yuri¹; Montgomery, Nathan¹; Tomoka, Tamiwe²;

Mukunda Dhungel, Bal²; Mulenga, Maurice²; Gopal, Satish^{1,2}

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Lymphoma incidence in sub-Saharan Africa (SSA) is increasing due to epidemic levels of HIV infection, population growth and aging. Yet, robust and comprehensive phenotypic and molecular classification of HIV-associated lymphomas is incomplete. Such characterization may provide unprecedented and generalizable insight into lymphoma biology, and inform prevention and treatment strategies regionally and worldwide. Here we describe the comprehensive profiling of HIV-associated diffuse large B-cell lymphoma (DLBCL) from the ongoing Kamuzu Central Hospital (KCH) Lymphoma Study prospective cohort.

After primary diagnosis at KCH, tissue blocks along are submitted to the UNC for additional immunohistochemical assessment (IHC) and genomic classification. To date, 116 adult cases have been fully characterized in this manner, with approximately half of all lymphomas arising in HIV-positive patients (n=59). DLBCL, the most common lymphoma worldwide, is similarly common in our cohort, representing 49 of the 116 cases. Of the DLBCL samples, 36 (22 HIV+/14 HIV-) have undergone whole transcriptome sequencing with comparison to published expression data and correlation to clinical outcome and pathologic features.

Unsupervised hierarchical clustering of whole transcriptome sequencing data revealed distinct expression profiles related to HIV status ($p < 0.00002$). The 4 HIV+ DLBCLs that clustered with HIV- cases were on antiretroviral therapy longer the HIV+ cases that clustered together ($p = 0.04$). Gene set enrichment analysis identified significant expression differences related to WNT, MTOR, and p53 signaling pathways, but overall survival was not different between HIV+ and HIV- cases or gene expression cluster. The whole exome sequencing of these cases is ongoing in hopes to correlate mutational profile with expression data.

Previous studies have identified at least two molecular subsets of DLBCL, one subgroup with an expression signature more similar to the germinal center B cell (GC), the other to the post-germinal center activated B cell (ABC). The cell-of-origin (COO) subtypes differ in their genetic alterations, affected signaling pathways, and outcomes. In keeping with published data, HIV-positive DLBCLs in our cohort have an expression COO signature shifted toward the GC subtype, relative to HIV-negative cases ($p = 0.02$). COO subtype is not associated with survival differences among HIV-positive cases, but proliferation signature and expression of Ki67 by IHC is associated with overall survival differences in HIV+ DLBCL ($p = 0.046$). As complete clinical outcome and laboratory information are available on cases in our cohort, the study represents a first-of-its-kind analysis of HIV-associated DLBCL from SSA. The findings provide preliminary data to inform future basic science and clinical investigations.

POSTER

WELCOME RECEPTION AND POSTER SESSION ONE

16:30–18:00

Tuesday

7 November

Fehr, Alexandra

P173 | FIVE YEARS OF CERVICAL CANCER TREATMENT IN RURAL RWANDA: OUTCOMES OF PATIENTS PRESENTING TO BUTARO CANCER CENTER OF EXCELLENCE FROM 2012–2017

Fehr, Alexandra¹; Shyirambere, Cyprien¹; Park, Paul¹; Buzoni, John²; Randall, Thomas³; Mpunga, Tharcisse²

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Background There are many challenges to successfully manage cervical cancer treatment in low-resource settings, including access to chemo-radiotherapy. To address the burden of cancer in Rwanda, the Ministry of Health (MOH), with support from Partners In Health, Dana-Farber Cancer Institute, and University of Pennsylvania, implemented the Butaro Cancer Center of Excellence (BCCOE) in rural Rwanda in July 2012. However, at present, Rwanda does not have access to domestic radiotherapy services. A selected number, among eligible patients, are sent every month out-of-country for radiation, depending on resources available. Cervical cancer patients, represent the most frequent patients sent for radiotherapy. Prior to April 2016, patients were sent to Kampala, Uganda, and since then, Nairobi, Kenya.

Methods We are conducting a retrospective study of five years of cervical cancer patients who presented at BCCOE between 1 July 2012–31 December 2016. Data are collected from the electronic medical record system and by manual chart review. Descriptive, bi- and multivariate statistics will be conducted to describe patient demographics, disease profiles, treatment, and clinical outcomes. Preliminary data and outcomes of those sent to Kenya for chemo-radiotherapy will be compared to those previously sent to Uganda.

Results From 1 July 2012–30 June 2015, 429 patients met the study inclusion criteria. The median age was 52 (IQR:45–60), and 98% were residents of Rwanda. 91% of patients had a documented disease stage, of which 3% were Stage I, 47% were Stage II, 39% were Stage III, and 11% were Stage IV at presentation. 51% of patients were treated with a curative intent, and 38% were referred to chemo-radiotherapy in Uganda. Among those who presented before 30 June 2015, 46% who received chemo-radiotherapy were in remission, and 27% of all were lost to follow up at time of data collection. Data will be updated to include patients diagnosed up until 31 December 2016, and multivariate analyses will be performed to better assess factors associated with receiving radiation, survival and lost-to-follow-up status.

Conclusion BCCOE illustrates the feasibility and challenges of implementing effective cervical cancer treatment services in a rural setting of a low-income country without domestic radiotherapy services. Future research will assess long-term outcomes of patients sent out-of-country for radiotherapy treatment, and, when available, outcomes of patients who receive treatment in-country.

POSTER

POSTER SESSION TWO

16:30–18:00
Thursday
9 November

Fitch, Margaret

P275 | PERSPECTIVES OF NURSES IN AFRICA AND CANADA REGARDING CONVERSATIONS WITH CANCER PATIENTS ABOUT SEXUALITY

Fitch, Margaret¹; Maree, Johanna²

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Introduction Cancer treatment can have a significant impact on an individual's quality of life. In particular, body image and sexuality can be compromised. There is increasing evidence that conversations about these specific consequences are not happening often between cancer patients and health care providers, especially in busy ambulatory settings.

Purpose This work will contrast the perspectives of nurses caring for cancer patients in Canada and in Africa regarding having conversations about the topic of sexuality with patients and family members after a cancer diagnosis.

Methods Data were collected through interviews with nurses (n=34) in Canada and through small group discussions with nurses (n=25) in Africa. Data were reviewed using a descriptive qualitative approach, identifying significant themes.

Findings Overall, participants acknowledged treatment can have an impact on a patient's sexuality. If conversations occurred, it was during consent processes before treatment began or when a patient raised a question about a specific side effect. These conversations rarely covered more than the physical changes and did not focus on the impact of changes on emotional and personal relationships or intimacy. Most providers waited for patients to raise any concerns or questions. Most participants expressed their own personal discomfort and lack of training for holding these types of conversations. They perceived the conversations as difficult for themselves as well as for patients. The topic of sexuality was often described as a taboo topic and one that was influenced strongly by cultural perspectives. Having time and privacy to hold the discussions were also seen as barriers.

Implications The findings support the need to clarify role expectations for cancer nurses, as well as other members of the cancer care team, about patient care regarding sexuality, and the provision of education to support the expected role.

POSTER

Fitch, Margaret

P276 | PERSPECTIVES ON PROVIDING SPIRITUAL CARE

Fitch, Margaret¹

¹University of Toronto

**POSTER
SESSION**

TWO

16:30–18:00

Thursday

9 November

Correspondence marg.i.fitch@gmail.com

Introduction Providing spiritual care is important in cancer care, especially for individuals living with advanced disease. The current health care environment creates challenges for practitioners to identify spiritual distress and engage in appropriate interventions.

Purpose This project was designed to deepen our understanding of spiritual care and identifying spiritual distress in busy clinical environments. We sought to identify a simple question that would be useful in screening for spiritual distress when used by frontline providers.

Methods Patients with advanced disease (N=16) and health care practitioners (N=21) were interviewed in-depth. Verbatim transcripts were analyzed separately for each group and themes identified. Subsequently, the perspectives from each group were compared with common and discordance perspectives identified.

Results Common views included spirituality as unique to the individual; spiritual distress as isolation, loneliness, and a sense of disconnection; spiritual care as listening, being with, and engendering a sense of connectedness; and identifying spiritual distress as needing a conversation rather than a single question. Contrasting views were seen in the difficulty health care practitioners had in describing spirituality and seeing a role for themselves in spiritual care while patients easily described these concepts and offered eloquent examples of their experiences related to spirituality.

Conclusions Patients considered spiritual care as important to their experience and expected it would be provided by practitioners; health care practitioners struggled with identifying roles for themselves in providing spiritual care. The varied perspectives could contribute to ‘missed opportunities’ to support individuals.

POSTER

POSTER SESSION

TWO

16:30–18:00

Thursday

9 November

Fokom Domgue, Joel

P218 | ASSESSMENT OF VISUAL INSPECTION OF THE CERVIX WITH LUGOL'S IODINE (VILI) AS AN ADJUNCT TO VISUAL INSPECTION WITH ACETIC ACID (VIA) FOR PRIMARY CERVICAL CANCER SCREENING IN A LIMITED RESOURCE SETTING

Fokom Domgue, Joel^{1,2}; Temogne, Liliane¹; Nkene, Yvette¹; Doh, Anderson²; Tebeu, Pierre-Marie^{1,2}

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Background Unlike Visual inspection of the cervix with acetic acid (VIA), visual inspection with Lugol's iodine (VILI) is not currently recommended for cervical cancer screening by the World Health Organization (WHO). We sought to assess the added value of VILI as an adjunct to VIA for primary cervical cancer screening in a limited resource setting.

Methods We consecutively enrolled women attending the University Hospital Centre (UHC) of Yaounde, Cameroon, for cervical cancer screening from July 2012 to June 2015. The screening algorithm used was VIA followed by VILI, and biopsy of any suspect cervical area. Endocervical curettage (ECC) was also performed when the squamo-columnar junction was not visible. We excluded pregnant women, those with gynecological symptoms, and those with history of hysterectomy. Sociodemographic and reproductive characteristics of the study population were recorded. VIA and VILI results were given following criteria of the IARC, and histological findings were classified according to WHO. Women with uninterpretable biopsy or inadequate VIA/VILI results were excluded from our analysis.

Results Overall, 1441 women met our inclusion criteria. Of those, 264 women (18,3%) screened positive by any visual method (VIA or VILI or both). Among them, 203 (76,9%) screened positive by VIA and VILI (VIA+/VILI+); and 61 (23,1%) screened positive by VILI while screening negative by VIA (VIA-/VILI+). No women screened positive by VIA while screening negative by VILI (VIA+/VILI-). Histological analysis of women in the VIA+/VILI+ group found 51 CIN2+ (25,1%) including 27 CIN2, 8 CIN3, 16 invasive cervical carcinomas (ICCs). In the VIA-/VILI+ group, 10 CIN2+ (16,4%) were found on histological examination, including 5 CIN2, 3 CIN3 and 2 ICCs. Among the 61 cases of histologically proven CIN2+ found in our study population, up to ten CIN2+ (16,4%) including two ICCs would have been missed at screening if we had performed VIA alone.

Conclusion In limited resource settings, using VILI as an adjunct to VIA might improve the detection of high grade cervical lesions in asymptomatic women, and thus the effectiveness of cervical cancer screening programs based on visual methods.

PRESENTATION

CANCER ADVOCACY AND OTHER ABSTRACTS

11:00–12:30

Thursday

9 November

Folasire, Oluyemisi

EFFECT OF NUTRITION EDUCATION INTERVENTION ON NUTRITION-RELATED CANCER PREVENTION KNOWLEDGE AMONG UNDERGRADUATES OF THE UNIVERSITY OF IBADAN

Folasire, Oluyemisi¹; Adejinmi, Oluwadamilola E.¹

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Background The incidence of cancer is increasing globally and also in Nigeria. According to previous studies, knowledge on cancer prevention is low. Generally, nutrition education has been found to improve nutrition knowledge, however it is not a well-researched aspect especially in resource-restricted countries like Nigeria. The objective of this study was to evaluate the effectiveness of nutrition education intervention on the nutrition-related cancer prevention knowledge among undergraduates of the University of Ibadan, Nigeria.

Method This study was a quasi-experimental study involving 95 respondents in the control group and 99 respondents in the intervention group. A nutrition education tool in the form of a brochure was designed based on the World Cancer Research Fund/American Institute on Cancer Research (WCRF/AICR) guidelines for cancer prevention. This study was conducted in 3 phases. Phase I: baseline nutrition knowledge of both the control and intervention group was obtained using a self-administered questionnaire with sections on socio-demography and nutrition-related cancer prevention knowledge. Phase II: nutrition education intervention brochure was designed based on WCRF/AICR guidelines for cancer prevention. The brochure was face validated by undergraduates and was content validated by experts in the field of nutrition. The brochure was given to the intervention group, the same message in the brochure were made into reinforcing text messages sent twice a day, twice weekly over a four-week period. Phase III: The knowledge was re-assessed in both control and intervention group. Descriptive (frequencies, percentages, mean, SD) and inferential statistics (paired and independent sample t-test) were performed to assess the effectiveness of the designed intervention in improving the knowledge score of the respondents, the level of significance were set at $p < 0.05$.

Results The mean age of the respondents was 20.78 ± 2.83 years. About half (49%) of the respondents are males while half of the respondents (51%) are females. The mean baseline knowledge of the respondents on nutrition-related cancer prevention was similar (cases= 11.70 ± 3.9 , vs. control= 11.10 ± 4.08 , $p=0.509$). The intervention group had significantly higher post-intervention mean knowledge scores compared to the control group (cases= 17.72 ± 1.49 , vs. control= 11.12 ± 3.57 , $p=0.000$). There was also a significantly higher knowledge score from baseline compared to the post-intervention knowledge score for the intervention group. ($p=0.000$).

Conclusion Nutrition education intervention improved knowledge about nutrition-related cancer prevention.

POSTER

WELCOME RECEPTION AND POSTER SESSION ONE

16:30–18:00

Tuesday
7 November

Folasire, Olujemisi

**P159 | NUTRITIONAL STATUS OF BREAST CANCER PATIENTS
ATTENDING THE RADIOTHERAPY CLINIC, UNIVERSITY COLLEGE
HOSPITAL, NIGERIA**

Folasire, Olujemisi¹; Folasire, Ayorinde Mobolanle¹; Ntekim, Atara Isaiah¹
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Introduction Nutrition plays a significant role in the development, treatment and survivorship of breast cancer. The general assumption is that cancer patients are often underweight and severely wasted.

Objective The study assessed the nutritional status of breast cancer patients presenting for treatment at the radiotherapy clinic, Ibadan, Nigeria.

Methods The cross-sectional study involved all consenting cancer patients presenting to the radiotherapy clinic between May and June 2015. Nutritional status was assessed with the malnutrition universal screening tool (MUST) and the subjective global assessment (SGA) tool. Anthropometry was assessed using standard techniques. Percentage body fat was analysed with the Omron body composition. Hospital records were reviewed for clinical and treatment details. Data were analysed with descriptive and inferential statistics at the level of significance of <0.05.

Results Thirty-six women out of 120 patient presented with breast cancer. The mean age was 52.9 ± 7.7 years. Age group 51–60 years were mostly represented at 42%. About 58% had advanced disease while 42% had early disease. Using BMI, about 39% were overweight, 25% were obese while 36% and about 3% respectively were normal or underweight. About 33% and 30% respectively had high and very high percentage body fat, 25% had normal, and 11% had low percentage body fat. Based on MUST 50% had no risk of malnutrition, 36% had a moderate risk, and 14% had a severe risk. About 58% were well nourished (SGA A), about 42% had moderate/severe malnutrition (SGA B/C). There were no significant differences in nutritional risk assessment based on early and advanced diseases.

Conclusion More than 40% of the breast cancer patients were either at moderate or severe risk of malnutrition using the MUST and SGA tools. A high percentage had excessive body fat presenting as overweight or obesity despite more than half having advanced disease.

POSTER

POSTER SESSION TWO

16:30–18:00
Thursday
9 November

Forconi, Catherine

P321 | MIP-1 SECRETING, BUT POORLY CYTOTOXIC TERMINALLY DIFFERENTIATED CD56NEGCD16POS NK CELLS ACCUMULATE IN CHILDREN WITH BURKITT'S LYMPHOMAS AND HIGH EBV LOADS

Forconi, Catherine¹; Cosgrove, Cormac²; Ong'echa, John Michael³; Otiemo, Juliana⁴; Alter, Galit²; Münz, Christian⁵; Moormann, Ann¹
¹University of Massachusetts; ²Ragon Institute of MGH, MIT and Harvard;
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Introduction Endemic Burkitt Lymphoma (eBL) is a pediatric, Epstein-Barr virus (EBV)-associated B cell malignancy which occurs in equatorial Africa. Malaria infection was described to diminish EBV-specific T cell immune surveillance in eBL etiology. However, characterization of Natural Killer (NK) cells, critical for fighting viral infections as well as eliminating tumor cells, has not been done for children diagnosed with eBL.

Methods NK cells were phenotyped by flow cytometry using multiple markers: KIRs, NKG2 receptor family, natural cytotoxic receptors, CD160, CD161, TRAIL and perforin. Their function was determined using K652 re-stimulation, assessment of cytotoxicity (CD107a), and cytokine (TNF α , IFN γ and MIP1 β) production. Five NK subsets were defined by CD56 and CD16 expression. Age-matched children from Kenya with divergent EBV and malaria exposures and those diagnosed with eBL were compared.

Results We found that CD56negCD16pos NK cells accumulate in eBL children, particularly in those with higher EBV loads. This subset represents terminally differentiated NK cells with KIR, perforin, CD107a and IFN γ expression similar to CD56dimCD16pos cytotoxic NK cells. While the CD56negCD16pos subset shows some characteristics of adaptive NK cells, such as lower NKp30, NKp46 and CD161 expression, they differ with respect to NKG2C and CD57 surface levels. Finally, these expanded NK cells retain MIP1 β production in response to NK cell susceptible targets, but have reduced cytotoxicity and so they are phenotypically unique from previously described NK cell subsets. Interestingly, we observed a recovery of the NK compartment to the composition of healthy age-matched children after eBL had been cured by chemotherapy.

Conclusion Lower activating NK cell receptor expression points towards diminished cytotoxicity despite high perforin expression by terminally differentiated CD56negCD16pos NK cells in eBL children with high EBV loads. This NK cell phenotype seems contrary to the early differentiated KIRneg NK cells that have been described to protect from lytic EBV replication in teenagers. Our study suggests a state of impaired EBV immuno-surveillance by NK cells in eBL patients but with the ability to restore a protective NK cell repertoire after successful treatment. Characterizing NK cell dysfunction during co-infections with malaria and EBV adds to our understanding of impaired immune surveillance in the eBL etiology and is crucial to designing immunotherapy to improve survival for these pediatric patients.

PRESENTATION

Fourie, Samuel

NON-ENDOMETRIOID ENDOMETRIAL CANCERS: DIFFERENCES IN BEHAVIOUR AND MANAGEMENT

**CERVIX AND
GYNAECO-
LOGICAL
CANCERS**

Fourie, Samuel¹
¹Wilgers Oncology Centre

14:40–16:30

Wednesday

8 November

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The incidence of endometrial cancer has increased over time and is the fifth most common cancer in women. Endometrial cancers can be divided into the two broad groups of low risk endometrioid (Type 1) and non-endometrioid and high grade (Type 2) histological subtypes. This division is based on differences in biologic behaviour by the two groups of malignancies as well as the impact on prognosis and management. The non-endometrioid group includes the following three histologic types: serous carcinoma, clear cell carcinoma and carcinosarcoma.

While these three histological subgroups contribute to a relatively small number of cases, they represent a disproportionate number of deaths. Around 40% of endometrial cancer deaths are due to these subgroups. One study showed that serous carcinoma accounts for about 10% of all endometrial cancers, but is responsible for more than 35% of all endometrial cancer related deaths while carcinosarcomas have an extremely poor prognosis with a 5 year survival rate of 33-39%. This is partly due to the more advanced stage at the time of diagnosis but also due to more aggressive biologic behaviour and lack of effective treatment.

Total abdominal hysterectomy and bilateral salpingo-oophorectomy with comprehensive surgical staging is the standard surgical management for these patients with high risk carcinomas of the endometrium, whereas pelvic irradiation, with or without brachytherapy and/or para-aortic irradiation, whole-abdomen irradiation, and chemotherapy have been employed as postoperative therapy. The value of extensive and systematic lymphnode dissection is debated as is the relative value of different adjuvant radiation techniques, brachytherapy and chemotherapy either as single modality or in combination. The optimal management for these subtypes of endometrial cancer has not been agreed on, as can be seen from the several intergroup studies that have been reported on and that are still ongoing.

Once considered an easily treatable cancer with good prognosis, endometrial cancer is now recognised to be a heterogeneous group of malignancies with different developmental pathways and differing clinical behaviors. The optimal combination of treatment modalities, sequencing and doses are still being debated and will be discussed in more detail.

POSTER

WELCOME RECEPTION AND POSTER SESSION ONE

16:30–18:00

Tuesday

7 November

Francis, Adeyinka

P174 | ORAL CONTRACEPTIVE USE AND RISK OF BREAST CANCER IN NIGERIAN WOMEN

Francis, Adeyinka¹; Shengfeng, Wang²; Ogundiran, Temidayo¹; Dezheng, Huo²; Olopade, Olufunmilayo²

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Introduction Oral contraceptives (OC) are known to influence the risk of cancers of the female reproductive system. There has been paucity of studies of OC use and breast cancer risks among African women due largely to less frequent use of OC across the continent. In this study we examined the relationship between OC use and breast cancer risk in patients who have been recruited into the Nigeria Breast Cancer Study.

Methods We analyzed data from participants recruited between 1998 and 2015 in the Nigerian Breast Cancer Study. We compared self-reported contraceptive use in patients with breast cancer with controls recruited in the community and hospital. Key OC exposure variables were; ever use, current or former use and duration of use. To examine the independent effect of OC on breast cancer risk, we fit multivariable logistic regression model and calculated odds ratio (OR) and 95% confidence intervals (CI).

Results Among breast cancer cases, 3.0% were current OC users and 26.2% were former users, compared to 7.6% current users and 27.5% former users among controls. In the multivariable analysis adjusting for age, age at menarche, family history of breast cancer, benign breast disease, parity, total duration of breast feeding, height, BMI, and alcohol consumption, previous use of OC was not statistically associated with risk of breast cancer compared with never use (OR = 0.63, 95% CI: 0.35–1.14), while current use of hormone contraceptives was associated with lower risk of breast cancer (OR = 0.34, 95% CI: 0.16–0.71). We did not find age of first use, duration of use, and time since last use of hormone contraceptives to be associated with breast cancer risk. Subgroup analysis showed that the apparent protective effect is limited to women aged younger than 45 years.

Conclusions These results add to the slow growing evidence on the relationship between OC use and breast cancer especially in indigenous African women. In this study, we found no evidence that OC use increases breast cancer risk in African women.

POSTER

WELCOME
RECEPTION
AND POSTER
SESSION ONE
16:30–18:00
Tuesday
7 November

Freeman, Esther

P100 | TIMING OF ANTIRETROVIRAL THERAPY AND CHEMOTHERAPY FOR KAPOSI'S SARCOMA IN A LARGE COMMUNITY-BASED HIV HEALTH CARE NETWORK IN KENYA

Freeman, Esther¹; Busakhala, Naftali²; Asirwa, Frederick Chite^{2,3}; Regan, Susan¹; Semeere, Aggrey^{4,5}; Martin, Jeff⁴
¹Massachusetts General Hospital / Harvard Medical School; ²Moi University; ³Indiana University; ⁴University of California, San Francisco; ⁵Makerere University

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Objective Kaposi's sarcoma (KS) is one of the most common malignancies in sub-Saharan Africa. ART roll-out has improved survival. In resource-rich settings, chemotherapy has also been beneficial; however, little is known about the epidemiology of chemotherapy for KS in sub-Saharan Africa, especially regarding timing of ART as compared to chemotherapy in real-world settings. We sought to determine the relative timing of ART and chemotherapy amongst patients with new HIV-associated KS in a large community-based care network in East Africa.

Methods We identified all patients newly diagnosed with HIV-related KS from 2009-2012 in the 50+ clinic AMPATH network in Kenya, a member of East Africa IeDEA. Through chart review, we ascertained disease severity at diagnosis, timing of ART initiation, and KS-specific treatment. Indications for chemotherapy were considered AIDS Clinical Trial Group (ACTG) T1 stage and/or "severe" disease defined by WHO KS treatment guidelines.

Results Of 674 patients diagnosed with KS, 599 had evaluable charts; 61% were men, median age was 35 years, and median CD4 at KS diagnosis was 184 cells/ μ l. By six months after diagnosis, of the 583 patients with documented diagnosis date, 45% were already on/had started ART alone, 46% started ART plus chemotherapy, 1% started chemotherapy only, 1% died prior to initiation of any therapy, 6% were lost to follow-up (LTFU), and 1% had unknown treatment status. Of the 261 treated with ART alone, 93 (36%) subsequently became LTFU over the 6 month period, and 22 (8%) died, effectively precluding subsequent chemotherapy. Of those with evaluable disease stage at diagnosis, 58% had chemotherapy indications (as per ACTG/WHO). Restricting to this subgroup with chemotherapy indications, who received both ART and chemotherapy during the course of treatment, 55% received ART prior to chemotherapy, and 42% received ART and chemotherapy around the same time (within 14 days). For those who started chemotherapy and ART, median time to chemotherapy was 21 days in those with a chemotherapy indication at diagnosis, and 57 days in those who did not have a chemotherapy indication.

Conclusion Around half of patients in this real-world setting received both ART and chemotherapy by 6 months after KS diagnosis. A substantial fraction of patients did not receive ART within one month; however, in patients with a chemotherapy indication at diagnosis who were treated with ART and chemotherapy, median time to chemotherapy was 3 weeks. Prospective research is needed to understand obstacles to timely therapy for all KS patients.

PRESENTATION

BIOMARKERS,
HAEMATOLOGY
& OTHER
ABSTRACTS

13:30–14:30

Thursday

9 November

Galvin, John

CHALLENGES AND OPPORTUNITIES FOR HEMATOPOIETIC STEM CELL TRANSPLANT FOR HEMATOLOGIC MALIGNANCIES IN SUB-SAHARAN AFRICA: A SYSTEMATIC REVIEW

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Of all cancers occurring in sub-Saharan Africa, hematologic malignancies have emerged as a major cause of morbidity and mortality. Non-Hodgkin lymphoma (NHL), leukemia, Hodgkin lymphoma (HL), and multiple myeloma (MM) together accounted for 10% of cancer deaths in 2008, with NHL being the sixth most common cancer in the region.

Hematopoietic stem-cell transplantation (HSCT) is an established treatment for selected patients with hematologic malignancies or disorders. Despite the success of HSCT, there are a very limited number of medical centers in sub-Saharan Africa supporting HSCT.

We sought to examine and summarize the data on current clinical studies and reports regarding the use of HSCT in sub-Saharan Africa. We performed a systematic review of electronic databases (Medline, EMBASE, PubMed) from the last 10 years. After a 4 stage Prisma based selection process, 32 published studies ultimately were selected for review.

Results from reported data indicate that HSCT outcomes in sub-Saharan Africa are comparable to developed countries, with 5-year survival rates of 52% for autologous HSCT and 50% for allogeneic HSCT. HSCT in developed countries is 6 times more available than to residents in South Africa, which has the greatest access to HSCT in sub-Saharan Africa. Supporting allogeneic HSCT may not be feasible in every country in sub-Saharan Africa, however, high-dose therapy with autologous HSCT could offer long-term remissions in MM or potential cures in relapsed HL and NHL. Developing strategies to extend autologous HSCT to selected patients at regional referral centers serving multinational regions is a reasonable strategy for increasing the availability of HSCT to sub-Saharan Africa.

PRESENTATION

Gany, Francesca

THE IMPORTANCE OF LANGUAGE ABOUT CANCER AMONG PEOPLE WITH LOW HEALTH LITERACY

HOW WE USE LANGUAGE IN DISCUSSING CANCER

07:15–08:20

Friday

10 November

Gany, Francesca¹; Diamond, Lisa¹; Gonzalez, Javier¹

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Language is the cornerstone of informed patient and family decision-making and of the therapeutic alliance in the cancer clinical encounter. Language and literacy barriers between the provider and the patient and family can significantly impede a) the discussion, understanding, and addressing of complex medical information and the associated psychosocial content, b) informed patient and family decision-making, and c) access to both palliative and curative cancer treatment. This has profound implications for the patient, the family, and the community. Readily implemented strategies to bridge differences across literacy levels and across primary languages can be employed to ameliorate these barriers. These strategies include: a) screens for literacy and numeracy and for provider and patient secondary language proficiency that are short and practical to administer, b) the utilization of interpreters to bridge the language gap, with guidelines for working with interpreters, c) the administration of a short set of questions to elicit the patient's explanatory model of the disease, and d) the employment of the teach-back method. The application of such bridging strategies brings promise for enhancing patient and family engagement and decision-making and the improvement of patient, family and community outcomes.

PRESENTATION

Gebremedhin, Amha

CHRONIC MYELOID LEUKAEMIA IN ETHIOPIANS

Gebremedhin, Amha¹

¹Addis Ababa University

HAEMATOLOGY

14:40–16:30

Thursday

9 November

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Chronic Myeloid Leukemia (CML) was the most common form of leukemia in adult Ethiopians. It accounted for more than 50% of the major leukemias in studies done in the 1960s-1990s. However, in an ongoing study of more than 800 patients enrolled in the Glivec International Patient Assistance Program (GIPAP) since 2004, CML accounted for 38% of the leukemias. This change in hospital-based prevalence is because the number of patients with Acute Leukemia and Chronic Lymphocytic Leukemia (CLL) has significantly increased.

Our patients with CML usually come late in the course of their illness after they become symptomatic (median duration of symptoms 8 months). Only about 5% are diagnosed incidentally. The diagnosis of CML was based on morphological examination of the peripheral blood and the bone marrow before 2004 and the treatment was only palliative with Busulfan, Radiotherapy and later, Hydroxyurea. The mean survival time was less than 3 years.

The introduction of Imatinib mesylate (Glivec®) in 2004 has been associated with a tremendous change in the diagnosis, treatment and prognosis of our patients. Today, more than 75% of our patients can expect to live a near normal life with tyrosine kinase inhibitor (TKI) therapy that also includes the second generation TKIs such as Nilotinib (Tasigna®).

However, we still have difficulties in the early diagnosis, treatment, regular follow-up and evaluation of treatment-response of our patients. Cytogenetic and molecular studies for the diagnosis of CML are not available on a regular basis in our hospital. Samples have still to be sent abroad for the diagnosis of the disease. Many of our patients come from very far regions in the country to the treatment center. These have undesirable effects in the regular follow-up and treatment adherence and outcomes of treatment. We cannot also monitor treatment response in our patients and we have no facilities for resistance testing. There are also no facilities/resources for stem cell transplantation service for patients failing to respond to TKIs.

In conclusion, although the prospects for the diagnosis and treatment outcome of our patients has significantly improved, we have still many hurdles to overcome in order to improve the diagnosis, timely treatment, treatment response, and resistance testing of CML patients in our center.

POSTER

POSTER SESSION TWO

16:30–18:00
Thursday
9 November

George, Johnston

P219 | CANCER AWARENESS AND CARE SEEKING AMONG ADULTS IN RURAL DISTRICTS OF KILIMANJARO REGION, NORTHERN TANZANIA

George, Johnston¹; Henke, Antje²; Mamseri, Redemtha¹; Henke, Oliver²; Serventi, Furaha²; Mboya, Innocent¹

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Background Kilimanjaro Christian Medical Centre (KCMC), is a referral hospital for over 15 million people in Northern Tanzania. It has been receiving patients with various malignancies and referring majority of them to Ocean Road Cancer Institute (ORCI) in Dar-Es-Salaam for management and care. In recent years diagnosed cancer cases have been increasing rapidly in Sub-Saharan Africa, leading to large numbers of patients presenting with an advanced stage or getting lost before treatment as traveling to ORCI becomes a financial burden. Realizing the need for cancer care, KCMC has recently established its own Cancer Care Centre (CCC). In December 2016, CCC and Institute of Public Health, KCMUCo conducted a community-based study to determine cancer awareness and care seeking patterns in the rural areas of 3 districts of Kilimanjaro Region.

Methods A household survey was conducted by medical students in 35 villages in the 3 districts. Households were randomly selected and one adult member from a household was interviewed by using questionnaires. Data were analyzed using SPSS.

Results A total of 1189 people were interviewed; mean age 44.6 (SD 17.5), 72.8% were females, and 90.9% had primary education or higher. Of the 1189 participants, 85% reported to have heard of cancer, 11.2% reported to ever had a household member suffering from cancer and 4.3% reported to have someone in the household currently diagnosed with cancer. About 44% of participants were able to mention at least one type of cancer. Cervical & breast cancer was common mentioned malignancy (58%), followed by oesophageal and other GIT malignancies (26.8%) and blood cancers (4.8%). First point of care seeking by communities for cancer was health facilities followed by traditional practitioners. 32.4% stated that Cancer is a problem for their community.

Conclusion There is a high level of awareness of cancer among the respondents with 85%, corresponding with a survey in Dar-es-Salaam about breast cancer awareness among women. However, this survey displays only 32.4% recognize cancer as a major health problem for their community and six out of ten people interviewed were not able to mention any type of cancer. People had more insight on various gynecological malignancies as compared to other malignancies such as those commonly affecting children or hematology malignancies. These results show areas to put more efforts in educating people as this is an important step to assure patients arrive at the CCC in an early stage of their disease.

POSTER

WELCOME
RECEPTION
AND POSTER
SESSION ONE

16:30–18:00

Tuesday

7 November

Giattas, Mary Rose Kahwa

P122 | ENGAGING PRIVATE INDUSTRY TO STRENGTHEN SYSTEM FOR MAINTENANCE OF CRYOTHERAPY MACHINES: LESSONS FROM TANZANIA

Giattas, Mary Rose Kahwa¹

¹Jhpiego

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Background Despite the fact that cervical cancer (CC) is potentially preventable, an estimated 266,000 women died of the disease in 2012. CC is the commonest cancer affecting women in Tanzania. In response, the Ministry of Health supports implementation of cervical cancer prevention (CECAP) program using visual inspection with acetic acid and treatment of precancerous lesions with cryotherapy. The program is working with donors and partners to support service delivery in almost 340 sites. Jhpiego with Pink Ribbon and Red Ribbon through USAID funding is supporting the Ministry of Health to strengthen key health system for delivery of quality cervical cancer prevention services. Strengthening system for maintenance of cryotherapy machines is one of the building blocks to ensure provision of timely and effective treatment for precancer. Frequent breakdown of cryotherapy machines has been one of the critical challenges. This paper describes lessons from Tanzania in strengthening the maintenance system for cryotherapy machines.

Methods Cryotherapy is an appropriate outpatient procedure for the treatment of precancer and currently being used in CECAP sites in Tanzania. Jhpiego with PRRR/USAID funding supported the Ministry of Health to strengthen the system for maintenance of cryotherapy machines with technical support from Anudha Limited which is a private industry and a recognized distributor of Medgyn Cryotherapy Machines in Tanzania. Anudha was engaged to support after sales service through hands on training which was facilitated by their qualified resident engineer and technicians.

Results Two days training was conducted to build capacity of 19 technicians from 9 Regions. MOH technicians were selected based on their level of commitment to support maintenance tasks. Demonstration was done to facilitate skill acquisition and participants practiced under supervision of qualified technicians. Checklist to guide technicians on how to conduct on site supervision was developed and two rounds of maintenance and troubleshooting visits to 50 CECAP facilities was done and gaps identified addressed on site. Providers were oriented on preventive maintenance during supervision visit. Breakdown of cryotherapy machines was minimized and awareness created on the importance of preventive maintenance after supervision. However, availability of repair toolkit was a challenge.

Conclusions Engaging private industry with expertise in repair and servicing component compliments Govt and partner's efforts to strengthen system for maintenance and repair of cryotherapy machines. Training technicians contributed to reduce frequent breakdown of cryotherapy machines. Program that focus on secondary prevention of CC should ensure that budget line is included in the comprehensive plans for preventive maintenance and sustainability.

POSTER

Ginindza, Themba G

P220 | CHALLENGES FOR CERVICAL CANCER SCREENING IN HIGH HIV SETTINGS: EMPIRICAL EVIDENCE FROM SWAZILAND

**POSTER
SESSION
TWO**

**16:30–18:00
Thursday
9 November**

Ginindza, Themba G¹; Dlamini, Xolisile²; Almonte, Maribel³; Herrero, Rolando³; Jolly, Pauline E.⁴; Weiderpass, Elisabete⁵; Broutet, Nathalie⁶
¹University of Kwazulu-Natal; ²Swaziland Ministry of Health; ³International Agency for Research on Cancer; ⁴University of Alabama; ⁵Karolinska Institutet; ⁶World Health Organization

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Background Cervical cancer is the most common cancer among Swaziland women, where HIV infection remains a major public health challenge. HR-HPV/HIV coinfection increases the burden of cervical abnormalities. Single-visit cervical screening using visual inspection of the cervix (VIA) with cryotherapy treatment of VIA-positives (VIA-and-cryo) started in 2009 in Swaziland aiming to increase screening coverage and reduce screened positives left untreated. However, the benefits and harms of VIA-and-cryo or other screen-and-treat needs to be assessed. Therefore, the study aimed to establish the prevalence of HR-HPV, including HIV infection and HPV-related conditions among sexually active women in Swaziland.

Methods A total of 655 women aged 15–49 were enrolled at 5 health centers. Blood sample was tested for HIV testing using Alere Determine HIV-1/2 Ag/Ab Combo test. Cervical cells were tested for HR-HPV using GeneXpert HPV Assay and for ThinPrep liquid-based cytology (LBC). All VIA-positive and high squamous intraepithelial lesions (HSIL) LBCN were treated with cryotherapy. VIA-negative/HR-HPV positive and already treated women were invited for follow-up with VIA at 12 months after initial screening. Estimates (with 95% CI) of HR-HPV prevalence, HIV prevalence, positivity rates of VIA, HR-HPV and LBC at first screen, overall and by age were obtained and compared.

Results The overall prevalence of HIV was 42.7% (95% CI: 35.7–46.2%), while HR-HPV prevalence was 46.2% (42.8%–49.5%). The prevalence of HR-HPV was 57.1% (51.0%–63.0%) among HIV-positives and 31.7% (27.0%–36.7%) in HIV-negative women (OR: 2.7, 2.1–4.0). Only 26% of women reported having had a previous Pap and 21% a previous VIA exam, while 95% were aware of their HIV status. Sixty-six women (10.2%) were VIA-positive, of them 74% were HR-HPV-positive and 46% had abnormal cytology. Follow-up visit: Only 26 (41.3%) of 63 VIA positive-treated women and 78 (34.7%) of 224 VIA-negative/HR-HPV positives attended the follow-up visit. VIA was positive in:

- 1) 13 of 26 (50%) already treated women who were referred to colposcopy and biopsy,
- 2) 15 of 78 (19%) VIA-negative/HR-HPV-positive women who were then treated with cryotherapy.

Conclusion The high treatment rate after a VIA-positive exam contrasted by the low attendance (36%) to the follow-up visit suggest that single visit cervical screening schemes are essential for Swaziland given the high rates of HR-HPV infection among sexually active women, particularly in HIV-positive. However, 50% of women treated at first screen required additional evaluation, highlighting the need for adequate training on ablative treatment. The results from histology will help to roughly estimate how much disease was missed by VIA and the further consideration to use a more sensitive screening test such as HR-HPV.

PRESENTATION

STATE OF PATHOLOGY IN AFRICA

08:25–09:25

Friday

10 November

Giovenali, Paolo

NON-GOVERNMENTAL ORGANISATIONS AND CAPACITY DEVELOPMENT IN SUB-SAHARAN AFRICA: ASSOCIAZIONE PATOLOGI OLTRE FRONTIERA (APOF)

Giovenali, Paolo^{1,2}

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The mission of APOF NGO is to improve cancer diagnosis in developing and emerging countries. According to WHO, in developing countries, Infectious disease, maternal and perinatal condition and nutritional deficiencies are decreasing while cancer related deaths will increase 2–3 times. Health cooperation is needed in the low-resources countries, but pathology services cannot be helpful in all of them. We should evaluate, not only the gross income of the country, but also the Human Development Index (HDI); this index, implemented by UNDP, combines three parameters: Life expectancy at birth, Knowledge and education (adult literacy rate, and school enrollment rate), Standard of living (gross domestic product balanced to purchasing power).

This formula is able to define at least three categories:

- countries with high or very high human development
- countries with medium human development
- countries with low or very low human development

Countries with low and very low development, where infectious diseases and malnutrition are still more important than cancer, need to improve basic health systems. Pathology is useful in countries with medium HDI, where higher life expectancy is associated with increased incidence of cancer. We must address at least three important issues: 1) Infrastructure and equipment challenge; 2) Challenges related to the provision of laboratory services; and 3) Human resource challenges.

Regarding human resources, three different settings have to be faced:

- 1) Senior pathologist(s) present; lab not working or working with serious lack of resources
- 2) No senior pathologist present; only junior or on-training pathologist(s) available
- 3) No pathologist present; only lab technicians available

Setting 1 actions should include a program of technical assistance for training (on job) of pathologist(s) and technicians, standardization, implementation of procedures/protocols and diagnostic check lists; quality controls (also by telepathology) and supporting: New techniques (FNA, Immunohistochemistry), Participation to national programs (i.e. screening).

In setting 2 we have to add a program of technical assistance for continuous on-site diagnostic activity associated with training on job for pathologist(s) and technicians.

Setting 3 is the most problematic: there is the need to provide a program of technical assistance for training (on job) of technicians for procedures in histo-cytology lab and examination. Diagnoses would be rendered by a telepathology system: scanner + via-satellite internet. This raises critical issues: high cost of internet connection and difficulties in sustaining continuous assistance on telediagnosis.

POSTER

POSTER SESSION TWO

16:30–18:00
Thursday
9 November

Githaiga, Jennifer

P221 | SYMPTOM AWARENESS MEASURES FOR BREAST AND CERVICAL CANCER DIAGNOSIS IN SUB-SAHARAN AFRICA: A LITERATURE REVIEW

Githaiga, Jennifer¹; Moodley, Jennifer¹; Walter, Fiona²; Scott, Suzanne³;
Mwaka, Amos⁴

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⁴Makerere University

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Background A scoping study of breast and cervical cancer reviews in developing countries highlighted the need for research from low and middle-income countries to adequately address cancer prevention and control. A comprehensive, multi-pronged approach is required to address the cancer burden in Africa. One pertinent issue in Sub-Saharan Africa is late cancer diagnosis. This raises questions regarding symptom awareness and interpretation as a precursor to timely help-seeking behaviour, and effectively, timely cancer diagnosis. Against this background, we engaged in a literature review to establish which tools have been utilized to measure breast and cancer symptom awareness in low and middle-income countries.

Methods We focused on (1) tools/questionnaires that have been used to measure symptom awareness in Africa (2) if tools used have been validated (3) how such tools compare with the Cancer Awareness Measure (CAM) and Awareness and Beliefs about Cancer (ABC) measure developed in the UK, and (4) where CAM/ABC questionnaires have been utilized other than in the UK. We searched PubMed, Web of Science, Ebscohost Scopus, and Cochrane Library databases. The PRISMA checklist served as a useful guide in documenting our search strategy.

Results Our search generated 510 records after eliminating duplicates. A further 23 records were excluded as only abstracts were available. Of the 486 full text records assessed for eligibility, 44 met the selection criteria. Of these, 26 articles were from Africa, 13 from Asia and 5 from the Middle East. There were more breast cancer studies (26) compared to those on cervical cancer (16), generic cancer awareness (1) or combined breast and cervical cancer (1). Of the 44 studies, 23 did not utilize validated measures while 13 studies alluded to some measure of validity, for example, test-retest reliability or adaptation of items following expert reviews. Only 8 studies employed validated protocols, 6 of which were drawn from Breast CAM (UK), one from Cervical CAM (UK), and one from the generic CAM (UK) 2008 protocol. All the 8 studies noted the need to adapt some of the CAM (UK) items to accommodate cultural nuances.

Conclusion Our results point to the dearth of contextually relevant validated tools to measure breast and cervical cancer awareness in Africa, and the need for systematic efforts to develop and validate such tools. These findings informed the development and validation of our African Breast and Cervical Cancer Symptom Awareness Tool, which we hope will be relevant in the Sub-Saharan African context.

POSTER

WELCOME RECEPTION AND POSTER SESSION ONE

16:30–18:00

Tuesday

7 November

Gizaw, Muluken

P047 | KNOWLEDGE AND ATTITUDE OF CERVICAL CANCER AND SCREENING AMONG PRIMARY HEALTH CARE WORKERS IN WEST WOLLEGA ZONE, ETHIOPIA

Gizaw, Muluken¹; Bekela, Eba²; Addissie, Adamu^{1,2}; Hirpa, Selamawit²; Kantelhardt, Eva¹; Jemal, Ahmedin³

¹Martin-Luther-University; ²Addis Ababa University; ³American Cancer Society

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Background There is limited data on knowledge of cervical cancer prevention, early detection, and treatment among healthcare workers in Ethiopia, especially in those practicing primary care in rural communities where cervical cancer is the leading cause of cancer death. This study aimed to assess knowledge and attitudes towards cervical cancer and screening among primary health care providers in west Wollega, a predominantly rural community in Ethiopia.

Methods Face-to-face interview of all primary health care providers (404) working in two purposely selected hospitals and 30 randomly selected health centers in west Wollega, Ethiopia, March–April 2016. We used Chi-square test to describe quantitative data. Open-source software was used to code and categorize qualitative data, and thematic analysis was employed.

Results About 57% of respondents identified HPV infection as a risk factor for cervical cancer, and half mentioned foul vaginal discharge as a symptom of the disease. About 24% and 61% of the health care workers knew of the HPV vaccine and screening for cervical cancer, respectively. Of those who knew of screening for cervical cancer, only 16% of them could name visual inspection with acetic acid. Notably, less than a third (28.5%) of the respondents strongly agreed that cervical cancer is preventable.

Conclusion Knowledge of cervical cancer prevention and early detection is poor among health care providers in west Wollega, Ethiopia. These findings could inform the development of educational materials on cervical cancer prevention and control targeting healthcare providers in the region, and could serve as baseline for evaluating future interventions.

PRESENTATION

Glasbey, James

INTERNATIONAL VARIATION IN OUTCOMES AFTER CANCER SURGERY

EPIDEMIOLOGY

Glasbey, James¹

¹GlobalSurg Collaborative

ABSTRACTS

14:40–16:30

Wednesday

8 November

Correspondence jamesglasbey@gmail.com

Background The burden of cancer is increasing in low and middle income countries (LMICs). Surgery is an integral part of treatment for cancer across the world, although little data exist about patients requiring cancer surgery or their outcomes across LMICs.

Methods This study is a cancer specific analysis from a multicentre, prospective, observational cohort study including consecutive adult and paediatric patients undergoing elective or emergency gastrointestinal resection for a primary malignant indication, during at least one 2-week period from January to July 2016. Patients were grouped into high, middle and low income countries according to United Nation's Human Development Index (HDI). Factors associated with the 30-day postoperative mortality rate (POMR) were explored using a multilevel, mixed-effects regression model.

Results 2297 patients undergoing cancer surgery from 259 hospitals in 59 countries were included, with 6.5% (149) from low-HDI, 16.4% (378) from middle-HDI and 77.1% (1770) from high-HDI countries. In low-HDI countries there was a higher proportion of patients presenting as an emergency than in middle- or high-HDI countries (24.2% vs. 15.6% vs. 14.5%). The 30-day POMR was 3-fold higher in low- (16.8%) than middle- (6.1%) or high-HDI countries (3.2%). The factors associated with 30-day POMR included low-HDI (OR=1.75, 95% C.I.=2.66-12.47), an emergency operation (OR=4.31, 95% C.I.=2.64-7.04) perforation (OR=3.97, 95% C.I.=1.79-8.82), and ASA III or above (OR=4.05, 95% C.I.=2.21-7.40).

Conclusion There is wide variation in provision and outcome of surgery for gastrointestinal cancer around the world. More cases needed emergency surgery in LMICs, which may highlight differences in access to care.

POSTER

WELCOME
RECEPTION
AND POSTER
SESSION ONE
16:30–18:00
Tuesday
7 November

Glasbey, James

**P160 | AN INTERNATIONAL COLLABORATIVE RESEARCH NETWORK
TO DESCRIBE VARIATION IN GLOBAL CANCER BURDEN**

Glasbey, James¹

¹GlobalSurg Collaborative

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Background Efforts to collect data on cancer in low and middle income countries (LMICs) to date have been registry based and not detailed enough to allow risk-adjustment for outcome. This study aimed to describe a novel platform's ability to address knowledge gap in surgical care of cancer in LMICs.

Methods This study is a cancer-specific analysis of the GlobalSurg-2 study, which aimed to map international variation in operated cancer burden using a protocol-driven, collaborative methodology. Patients were grouped into high, middle and low income groups according to United Nation's Human Development Index (HDI).

Results 259 hospitals across 59 countries uploaded patient-level data on patients undergoing surgery for intra-abdominal cancer, with 77.1% (1770) from high, 16.4% (378) from middle, and 6.5% (149) from low HDI countries. The proportion of patients undergoing surgery for a primary malignant indication cancer was smaller in low-HDI (7.7%) and middle-HDI countries (8.2%), than high-HDI countries (20.9%). The most common types of operations performed were colonic resection/stoma formation (44.8%), rectal resections (16.9%), and gastrectomies (13.0%). There was significant regional variation in operated cancer burden. Data on variation in morbidity and mortality were captured. Validation of case ascertainment and data accuracy showed a high-level of concordance.

Conclusion The GlobalSurg platform has captured data on the burden of cancer surgery in LMICs. Detailed, frontline data has allowed risk-adjustment to be performed at global scale for the first time and has identified areas to target future research.

POSTER

WELCOME
RECEPTION
AND POSTER
SESSION ONE

16:30–18:00

Tuesday

7 November

Glasbey, James

**P175 | GLOBAL VARIATION IN END STOMA FORMATION
FOLLOWING LEFT SIDED COLORECTAL RESECTION**

Glasbey, James¹

¹GlobalSurg Collaborative

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Background Little is known about the burden of colorectal cancer in low-middle income countries (LMICs). This study aimed to assess variation in stoma rates after left-sided colonic resection.

Methods This study describes an analysis from an international, prospective, observational cohort study including consecutive patients undergoing elective or emergency left sided colorectal resection. Patients were grouped into high, middle and low income tertiles according to United Nation's Human Development Index (HDI). Factors associated with the primary colostomy rate were explored using a multilevel, mixed-effects regression model.

Results 1219 patients from 242 hospitals in 57 countries undergoing left-sided colorectal resection were included, with 8.4% (103) from low-HDI, 16.7% (204) from middle-HDI, and 74.8% (912) from high-HDI countries. The proportion of patients receiving an end colostomy in low-HDI countries (63.1%) was twice that than in middle-HDI (25.4%) and four-fold that in high-HDI countries (13.9%). This persisted despite risk adjustment (low HDI, OR=4.02), as did being ASA III or above (OR=2.40), and having emergency surgery (OR=4.48).

Conclusion There are global differences in proportion of patients receiving end stoma after left sided colorectal cancer surgery. Whether these are related to patient, disease, or technique factors needs further research.

PRESENTATION

Gopal, Satish

REDESIGNING LYMPHOMA CLINICAL TRIALS FOR AFRICA

LYMPHOMAS

11:00–12:30

Thursday

9 November

Gopal, Satish¹

¹UNC Project

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This presentation elucidates unique challenges and opportunities in developing lymphoma treatment studies in sub-Saharan Africa (SSA), given the extreme scarcity of evidence to guide lymphoma treatment throughout the region, substantial recent interest from the National Cancer Institute and other funders, and major differences between SSA environments and resource-rich settings with respect to lymphoma treatment infrastructure. Key issues related to equipoise, innovation, and efficiency are addressed within the SSA context, and a possible framework for conceptualizing lymphoma clinical trials in SSA is proposed. A case is made for strongly aligned cancer care and research agendas, similar to international pediatric oncology groups, to generate meaningful forward scientific progress for nascent lymphoma treatment efforts in the region, as well as globally impactful clinical science that could change lymphoma treatment paradigms even in resource-rich settings.

PRESENTATION

**BURKITT
LYMPHOMA**
11:00–12:30
Wednesday
8 November

Gouveia, Mateus

THE GENOMIC ARCHITECTURE OF NILOTIC AND GHANAIAN POPULATIONS: INSIGHTS IN GERMLINE RISK FACTORS OF BURKITT LYMPHOMA

Gouveia, Mateus¹; Bergen, Andrew²; Borda, Victor²; Leal, Thiago²; Nunes, Kelly³; Yeager, Meredith²; Mbulaiteye, Sam²

¹Fundação Oswaldo Cruz; ²National Cancer Institute, National Institutes of Health; ³University of São Paulo

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Africa is underrepresented in global biomedical research despite of being source of all modern humans and harboring the highest human genetic diversity. Recent efforts are providing important insights into African genomic diversity allowing mapping genetic variants related to adaptations to regional living conditions. In this context, the Epidemiology of Burkitt Lymphoma (BL) in East-African Children and Minors project (EMBLEM) was designed to investigate BL genetic factors and the role of malaria in BL epidemiology. Endemic BL is known to be closely related to malaria infection, but the genetic etiology of BL and the genomic architecture of the affected populations are incompletely understood. Here we describe the population structure, admixture dynamics and biomedical insights at a genomic level in African populations in the Burkitt Lymphoma-Malaria belt (Uganda and Ghana) in the Pan-African context. Our combined genome-wide dataset is comprised of 3,120 individuals related to 28 populations, four regions, 11 countries, and 12 ethno-linguistic groups from Sub-Saharan Africa. We used this large dataset to perform genotype-based and haplotype-based analyses. We revealed six genomic ancestries delineating African admixture, correlated with geography and migration history. Specifically, Nilotic Northern Ugandan populations (North West and North Central) are highly differentiated East African groups showing complex pattern of interactions between them and also with East and West African groups. Admixture dynamics inferences of Ghanaian and Ugandan populations identified old and recent admixture events between West and East African populations in time periods consistent with admixture in the homeland around the time dispersal and recent admixture, probably related to civil disturbance due to colonization and the slave trade. In addition, we obtained important biomedical findings: i) GWAS SNPs are related to specific African ancestries, suggesting differential heritability among the these ancestries; ii) highly differentiated SNPs are found in protein pathways involved in malaria pathophysiology; and iii) variants related to genes previously associated to malaria infection as FCGR2A, CD36 and SEMA3C are found to be under recent positive selection in Ugandans and Ghanaians.

PRESENTATION

Grande, Bruno

BURKITT LYMPHOMA GENOME SEQUENCING PROJECT (BLGSP): INTRODUCTION

BURKITT LYMPHOMA

11:00–12:30

Wednesday

8 November

Grande, Bruno¹; Gerhard, Daniela S.²; BLGSP Consortium³; Marra, Marco A.⁴; Morin, Ryan D.^{1,4}; Staudt, Louis M.²

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Burkitt lymphoma (BL) is an aggressive B-cell non-Hodgkin lymphoma with a hallmark translocation involving MYC and an immunoglobulin enhancer. It is most common in children and has three clinical variants: endemic, sporadic, and HIV-associated. The Epstein–Barr virus–associated endemic subtype is highly prevalent in equatorial Africa, where it is the most common pediatric cancer. Previous genomic studies of smaller BL cohorts revealed that endemic BL harbors mutation patterns similar but not identical to sporadic cases from high-resource countries. The BLGSP aims at conducting an integrative molecular characterization of a large comprehensive BL cohort including an unprecedented representation of endemic cases. The objective is to define molecular features that drive lymphomagenesis, which can be translated to new therapeutic strategies deployable worldwide. The goal is to collect 160 BL cases, of which 50% will be endemic, 38% sporadic and 12% from HIV+ patients. For the discovery phase, each tumor requires case-matching constitutional DNA as well as treatment, outcome and other clinical information. The optimal source of tumor DNA and RNA is from frozen tissue with at least 50% tumor nuclei, but FFPE immobilization is also accepted. Accrual locations include Africa, Brazil, Europe and the United States. The BLGSP has developed extensive standard operating procedures for tissue collection, pathology review and tissue processing. Molecular characterization includes whole genome sequencing of tumor and constitutional DNA (80X and 40X coverage, respectively), RNA sequencing (RNA-seq) and microRNA sequencing. These data will enable the BLGSP to identify somatic mutations, human and viral expression signatures, and miRNA-mediated transcript regulation. We have accrued 167 cases of BL of which 75% passed diagnostic pathology review with a 25% attrition at the tissue processing stage. We have completed sequencing for 94 cases. We have identified recurrent mutations in ID3, DDX3X, ARID1A, FOXO1, TP53, SMARCA4 and multiple novel genes that appear to be associated with BL. Most mutations are supported by the RNA-seq data. Some genes accumulated somatic mutations in a BL subtype-specific fashion, warranting further investigation. BLGSP is an ongoing international collaborative project aimed at providing a comprehensive molecular portrait of BL across all subtypes. In summary, this effort has the potential to reveal molecular targets for therapy that can lead to more effective treatments that are less toxic than the current regimens.

BMG and DSG contributed equally. RDM and LMS contributed equally.

POSTER

WELCOME RECEPTION AND POSTER SESSION ONE

16:30–18:00

Tuesday
7 November

Guermazi, Fatma

P418 | L'OSTÉOSARCOME PRIMITIF DE L'OS MÉTASTATIQUE: EXPÉRIENCE DE L'INSTITUT SALAH AZAIEZ: À PROPOS DE 49 CAS

Guermazi, Fatma¹; Ayadi, Mouna¹; Letaief, Feriel¹; Meddeb, Khadija¹; Mokrani, Amina¹; Yahyaoui, Yosra¹; Chraiet, Nesrine¹; Raies, Henda¹; Mezlini, Amel¹

¹Medecin en Oncologie Médicale

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Introduction L'ostéosarcome est la tumeur osseuse maligne rare mais est la plus fréquente des tumeurs osseuses primitives. Au diagnostic environ 15 à 20% des patients présentent des métastases synchrones et 30 % des patients ayant un ostéosarcome initialement localisé présenteront des métastases au cours de leur évolution.

L'objectif de notre travail était de décrire les aspects épidémiologiques, thérapeutiques et pronostiques des ostéosarcomes métastatiques traités à l'institut Salah Azaiez (ISA).

Patients et Méthodes Nous avons mené une étude monocentrique rétrospective au sein du service d'oncologie médicale de l'ISA entre 1980 à 2016 ayant colligé 42 patients métastatiques parmi 200 patients atteints d'ostéosarcome primitif de l'os.

Résultats L'ostéosarcome métastatique représentait 21% de tous les ostéosarcomes primitifs de l'os. L'âge médian était de 19 ans avec des extrêmes de 7 et 65 ans et une prédominance masculine (52,4%). Les motifs de consultation étaient essentiellement la douleur (90,5%) et/ ou la tuméfaction (71,4%). Les sièges du primitif les plus fréquents étaient: le fémur (59,5%), le tibia (21,4%) et l'humérus (4,8). Le côté droit du squelette périphérique était prépondérant (59,5 %) avec une prédilection au niveau de l'extrémité inférieure du fémur (52,4 %). Les métastases pulmonaires étaient présentes dans 97,6 % des cas, les métastases osseuses dans 23,8 % des cas et une métastase mammaire était présente chez un patient. Une chimiothérapie première a été reçue dans 92,9 % des cas. Les protocoles les plus utilisés étaient: [Méthotrexate – Adriamycine – Cisplatine: ROSEN T10 modifié] (49,9%), [Adriamycine, Platine, Ifosfamide] (19%) et [Méthotrexate, Etoposide, Ifosfamide] (14,3%). Les toxicités grade III/IV observées étaient: hématologique (28,6%), digestive (16,7%) et rénale (4,8%). Une réponse objective clinique et radiologique a été observée dans 47,1 % des cas et une progression dans 42,8 % des cas. Un traitement local du primitif a été reçu dans 50% des cas et un traitement local des métastases dans 19% des cas. La forme commune ostéoblastique était la plus fréquente (40,5%). Le recul médian était de 17,6 ans. La Survie sans progression était de 58 % à 1 an et 22,9 % à 3 ans. La Survie globale était de 54 % à 1 an.

Discussion et Conclusion Le pronostic des ostéosarcomes métastatiques reste péjoratif malgré le développement de la chimiothérapie. Cette survie n'a que peu progressé au cours des 20 dernières années. Par conséquent, la prise en charge thérapeutique constitue toujours un véritable challenge.

POSTER

Guermazi, Fatma

P442 | PROFIL ÉPIDÉMIOLOGIQUE DE L'OSTÉOSARCOME EN TUNISIE: A PROPOS DE 200 CAS

**POSTER
SESSION
TWO**

16:30–18:00

Thursday

9 November

Guermazi, Fatma¹; Ayadi, Mouna¹; Guermazi, Fatma¹; Meddeb, Khadija¹; Mokrani, Amina¹; Yahyaoui, Yosra¹; Chraiet, Nesrine¹; Raies, Henda¹; Mezlini, Amel¹

¹Medecin en Oncologie Médicale

Correspondence fatmaguermazi21@yahoo.com

Introduction L'ostéosarcome est une tumeur rare représentant 5% des tumeurs malignes de l'enfant et de l'adolescent. Elle atteint souvent le garçon après l'âge de 10 ans et se localise préférentiellement au niveau de l'extrémité inférieure du fémur. Le but de notre étude était de décrire le profil épidémiologiques clinique, radiologiques et anatomo-pathologiques des ostéosarcomes traités l'institut Salah Azaiez (ISA).

Patients et Méthodes Il s'agit d'une étude monocentrique rétrospective menée au sein du service d'oncologie médicale de l'ISA, colligeant 200 cas d'ostéosarcome primitif de l'os de haut grade de malignité traités entre 1980 et 2016.

Résultats L'incidence moyenne était de 6 cas / an avec un seul pic dans la tranche d'âge ans. L'âge médian était de 18 ans avec des extrêmes de [1–83] ans. Une prédominance masculine a été retrouvée (55%), avec un sex-ratio de 1,2. Le délai moyen de consultation était de 3,4 mois. Les motifs de consultation les plus fréquents étaient la douleur (82%) suivie par la tuméfaction (74%) puis le traumatisme (10%), la fracture (6,5%) et l'impotence fonctionnelle(5,5%). La taille tumorale moyenne est passée de 14 cm vers les années 1990 à 11 cm à partir de l'an 2000, avec des extrêmes de 6 et 18 cm. La tumeur siégeait au niveau du squelette appendiculaire dans 86,5 % des cas (le fémur (50,5%), le tibia (25%), l'humérus (16%), le cubitus (6,5 %) et le péroné (2%)) et au niveau du squelette axial dans 13,5 % des cas. Le siège de prédilection était les os long pour les sujets jeunes (97%) et les os plats chez les sujets âgés (71%). L'aspect radiologique Lytique était prépondérant (41,6%) puis l'aspect condensant (20,1%) ou mixte (20,1%). A l'histologie, La forme commune était le type histologique prépondérant (85,5%), suivie par l'ostéosarcome télangiectasique (3,5%) puis par l'ostéosarcome à petites cellules rondes (0,5%). Le sous-type ostéoblastique (47%) était la forme commune la plus fréquente. L'ostéosarcome localisé était plus fréquent que la forme métastatique (79 % vs 21%). Les métastases étaient essentiellement pulmonaires (85%) et osseuses (20 %).

Discussion et Conclusion Malgré sa rareté L'ostéosarcome est le cancer primitif des os le plus fréquent. Le profil épidémiologique de notre série était comparable à celui de la littérature en terme de fréquence, sexe ratio, présentation clinique, radiologique et histologique cependant nous n'avons pas observé un 2ième pic d'incidence chez le sujet âgé, et la proportion de tumeurs métastatiques était moins marquée dans notre série.

POSTER

Guermazi, Fatma

P443 | L'OSTEOSARCOME EN TUNISIE

**POSTER
SESSION
TWO**

16:30–18:00

Thursday

9 November

Guermazi, Fatma¹; Guermazi, Fatma¹; Ayadi, Mouna¹; Meddeb, Khadija¹; Mokrani, Amina¹; Yahyaoui, Yosra¹; Chraiet, Nesrine¹; Raies, Henda¹; Mezlini, Amel¹

¹Résidente en Oncologie Médicale

Correspondence fatmaguermazi21@yahoo.com

Introduction L'ostéosarcome est une tumeur rare représentant 5% des tumeurs malignes de l'enfant et de l'adolescent. Elle atteint souvent le garçon après l'âge de 10 ans et se localise préférentiellement au niveau de l'extrémité inférieure du fémur. Le but de notre étude était de décrire le profil épidémiologiques clinique, radiologiques et anatomo-pathologiques des ostéosarcomes traités l'institut Salah Azaiez (ISA).

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Discussion et Conclusion Malgré sa rareté L'ostéosarcome est le cancer primitif des os le plus fréquent. Le profil épidémiologique de notre série était comparable à celui de la littérature en terme de fréquence, sexe ratio, présentation clinique, radiologique et histologique cependant nous n'avons pas observé un 2ième pic d'incidence chez le sujet âgé, et la proportion de tumeurs métastatiques était moins marquée dans notre série.

PRESENTATION

Guisseve, Assucena

HORMONE RECEPTORS AND HUMAN EPIDERMAL GROWTH FACTOR RECEPTOR 2 IN BREAST CANCER IN MOZAMBIQUE: PATTERNS OF EXPRESSION AND RELATION WITH AETIOLOGY, MANAGEMENT AND PROGNOSIS

**BIG CAT
AWARDEES**
11:00–12:30
Wednesday
8 November

Guisseve, Assucena^{1,2}; Brandao, Mariana^{3,4}; Bata, Geneveva²; Tulsidás, Satish^{2,4}; Lunet, Nuno⁴; Carrilho, Carla^{1,2}

¹Eduardo Mondlane University; ²Maputo Central Hospital; ³Portuguese Institute of Oncology; ⁴University of Porto

Correspondence assucenaluis@hotmail.com

Introduction Breast cancer (BC) is the most frequent cause of cancer death in women in less developed regions. However, there are still scarce data regarding BC epidemiology, clinical management and survival in Africa. Therefore, we aim to assess the distribution of BC subtypes among patients from Mozambique (Study I) and the impact of this heterogeneity on clinical management and prognosis (Study II).

Methods In Study I, a consecutive series of BC cases, with pathological diagnosis performed at the three Pathology Units of Mozambique, is being assessed for up to 32 months. The expression of estrogen receptors, progesterone receptors, overexpression/amplification of HER2 and Ki67 index will be assessed on the tumors and they will be classified in surrogate subtypes. The prevalence of each subtype will be described globally, and according to stage at diagnosis, patients' age and place of residence. In Study II, a consecutive series of BC patients, who are treated and followed at the Oncology Unit of the Maputo Central Hospital, have been included during 27 months. Data on clinical management and on survival is being systematically introduced in each clinical file.

Preliminary Results So far, we have 251 patients in Study I and enrollment is going to be completed by the end of August/2017. However, immunocytochemistry has only been performed in samples from 19 patients: 63% have positive estrogen receptors, 58% positive HER2 (score 3+) and 58% have a Ki67 positivity > 10%.

In Study II, enrollment has been completed and we have 188 patients with a median age of 48.5 years; median schooling: 6 years; median number of gestations: 4; positive family history of breast cancer: 3%; menopausal status: 53% pre-menopausal and 9% unknown; HIV status: 22% positive and 22% unknown; 14% stage IV. So far, 39% were submitted to surgery, 69% to chemotherapy, 10% to hormone therapy and 1% to radiotherapy. These patients are still in follow-up.

Conclusions We are describing the continuum of BC detection and management in Mozambique, on a national level, contributing to the evaluation of the incidence of the disease, by molecular subtype and by stage, to the description of the available treatment and to the quantification of BC survival. With this information we aim to improve the organization of cancer care services in Mozambique, helping in the reduction of cancer burden in the country. Besides, this knowledge can also be used in East Africa, potentially leading to improved BC patient outcomes.

PRESENTATION

MIXED
ABSTRACTS
13:30–14:30
Wednesday
8 November

Gupta, Sumit

CHILDHOOD CANCER TREATMENT IN SUB-SAHARAN AFRICA IS VERY COST-EFFECTIVE: EVIDENCE FROM GHANA

Gupta, Sumit²; Shah, Shivani¹; Bhakta, Nickhill³; Denburg, Avram¹; Horton, Susan⁴; Gupta, Sumit¹

¹Hospital for Sick Children; ²University of Ghana; ³St. Jude Children's Research Hospital; ⁴University of Waterloo

Correspondence sumit.gupta@sickkids.ca

Background Although previous studies have examined the cost of treating individual childhood cancers in low- and middle-income countries, none have examined the overall cost and cost-effectiveness of operating a childhood cancer treatment centre. We examine the cost of a pediatric cancer unit in Korle Bu Hospital, Accra, Ghana, and make estimates of cost-effectiveness.

Methods Administrative data on costs and volumes of inputs were determined for the pediatric cancer unit by retrospectively determining the services used (e.g. laboratory, pathology, chemotherapy, supportive medications), their unit costs, and extrapolating annual cost figures. Salaries of medical and non-medical personnel were determined, and multiplied by the percentage of time devoted to the care of children with cancer. Costs associated with inpatient bed use, central administration, and utilities were also estimated. Cost-effectiveness was estimated based on number of new patients diagnosed annually and survival rates.

Results The pediatric cancer services cost \$1.7 million to deliver annually, involving 170 new diagnoses/year and 660 inpatient stays/year. The two costliest line items were personnel salaries (45% of total cost) and operating room costs (21%). Medications accounted for 7% of the total cost, while imaging, radiation, pathology, laboratory and blood bank costs together accounted for only 5%. Based on an estimated five-year survival of 35% in this setting, preliminary analyses indicate that the cost per Disability Adjusted Life Year averted was \$1,114, under the threshold considered very cost-effective by WHO-CHOICE standards (i.e. less than Ghanaian GDP/capita of \$1,513).

Discussion This is the first estimate of the cost and cost-effectiveness of a childhood cancer unit in Sub-Saharan Africa. Treating childhood cancer in a specialized unit in Sub-Saharan Africa can be done very cost-effectively. These results can inform health policy and advocacy efforts targeting increased childhood cancer services across the region.

PRESENTATION

Gupta, Sumit PRESENTATION OF PAEDIATRIC STAGING

TERMINOLOGY AND ESSENTIAL TNM

14:40–16:30
Wednesday
8 November

Gupta, Sumit¹
¹Hospital for Sick Children

Correspondence sumit.gupta@sickkids.ca

Information on cancer stage at diagnosis is crucial for population surveillance and meaningful comparisons of cancer outcomes between jurisdictions and time periods. Collecting childhood cancer stage presents additional challenges, given multiple staging systems in clinical use. In this presentation, we will review the Toronto Pediatric Cancer Stage Guidelines, reached through a consensus process of international experts in pediatric oncology, epidemiology, and cancer registration, and recently endorsed by the UICC TNM Committee. Similar to Essential TNM, the Toronto Guidelines include basic staging systems for the major childhood cancers more appropriate for lower resource settings. Finally, recently developed implementation tools, including online staging resources based on the Toronto Guidelines, will be demonstrated.

PRESENTATION

Gupta, Sumit

**THE LANCET ONCOLOGY COMMISSION ON SUSTAINABLE
PAEDIATRIC CANCER CARE**

**PAEDIATRIC
ONCOLOGY**

14:40–16:00

Friday

10 November

Gupta, Sumit¹

¹Hospital for Sick Children

Correspondence sumit.gupta@sickkids.ca

The majority of childhood cancer deaths occur in low-to-middle-income countries where children have poor access to health services. It is crucial that as countries transition to universal health care, childhood cancers are recognised as a priority for inclusion in benefits packages. Yet no reliable data are available in low-to-middle-income countries on current and future burden of childhood cancer; on cost of effective interventions; on current coverage levels for diagnostic, treatment, and care services; or on the cost, feasibility, or health and economic benefits of scaling-up effective coverage. There is an imperative for a comprehensive study to develop an investment framework to establish an evidence-based case for investing in effective interventions to address childhood cancer. The Lancet Oncology Commission on Sustainable Paediatric Cancer Care, due to be launched in the fall of 2018, will undertake a comprehensive analysis to develop an investment case for funding management and control of childhood cancer. In this session, we will discuss the structure of the analyses, preliminary results, and implications for African childhood cancer programs.

PRESENTATION

Guthua, Symon

EXPERIENCE WITH MANDIBULO-MAXILLOFACIAL OSTEOSARCOMAS IN KENYA

**SARCOMAS
IN AFRICA:
DIAGNOSIS &
TREATMENT**

07:15–08:20

Friday

10 November

Guthua, Symon¹; Kamau, Martin¹

¹University of Nairobi

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Background Osteosarcomas, are the most common primary malignancies of bone, and account for the greatest surgical burden amongst the maxillofacial sarcomas. Sarcomas are mesenchymal malignancies comprised of a biologic varied group of neoplasms. In general, whole body sarcomas are relatively rare accounting for about 1% of all malignancies. In the Maxillofacial region, sarcomas account for about 19% of all malignant tumours occurring in this region. The management of maxillofacial sarcomas remains a challenge due to a multitude of factors namely, the aggressive nature of these tumours and the anatomic complexity of the region. The primary treatment option is surgical to negative margins. There is evidence pointing to the utility of neoadjuvant/adjuvant chemotherapy for maxillofacial osteosarcoma.

Objective To determine the pattern of occurrence and the treatment protocol of maxillofacial/gnathic osteosarcomas based on archival material accumulated over 24 years (1991- 2014).

Design A retrospective cross-sectional study.

Study population All histopathological confirmed cases of gnathic osteosarcomas registered between 1991–2014 were studied.

Setting The University of Nairobi Dental Hospital

Results A total of 25 gnathic osteosarcomas were recorded over the 24 year period. They peaked in the third decade with over 76% occurring below the age of 40 years. The mandible was the most common site of occurrence in the maxillofacial region accounting for 60%. The primary management protocol in the treatment of gnathic osteosarcomas was multi-modal therapy combining chemotherapy agents (neoadjuvant and adjuvant) and ablative surgery. Treatment protocol was as follows: 3 cycles of neoadjuvant chemotherapy (Cisplatin/Doxorubicin) followed by surgical excision of mass and then 3 cycles of adjuvant chemotherapy (Cisplatin/Doxorubicin). Adjuvant radiotherapy was instituted in cases of unfavourable prognostic factors such as high grade, large size and positive margins following excision.

Conclusions Despite the apparent improvement in the management of gnathic osteosarcomas in Kenya there still remains significant gaps such as limited human resource capacity and infrastructural capacity.

Recommendations These include establish dedicated oncology tumour boards/ Multi-disciplinary teams. Investment in human resource training and healthcare infrastructure all with the aim of establishing and updating strict protocols to be followed by the healthcare providers to improve sarcoma outcomes. Finally, institutional based multi-centre research into these malignancies.

POSTER

WELCOME RECEPTION AND POSTER SESSION ONE

16:30–18:00

Tuesday

7 November

Gutnik, Lily

P176 | QUALITATIVE EVALUATION OF BREAST CANCER SCREENING PROGRAM UTILIZING TRAINED LAYWOMEN IN MALAWI

Gutnik, Lily^{1,5}; Kohler, Raquel²; Miller, Anna³; Lee, Clara⁴; Gopal, Satish⁵

¹University of Utah; ²Harvard School of Public Health; ³UNC School of Public Health; ⁴Ohio State University; ⁵UNC Project

Correspondence lily.gutnik@gmail.com

Purpose Despite increasing burden, breast cancer control in sub-Saharan Africa is insufficient. Late diagnosis and lack of early detection and screening services contribute to high mortality. Clinical breast exam (CBE) screening can be valuable in low-income countries, including use of community health workers and non-health professionals to conduct exams. We assessed experiences of women who underwent CBE screening by trained laywomen in Lilongwe, Malawi, as part of a pilot program.

Methods The pilot study invited women attending urban health clinics to a breast cancer educational talk followed by CBE screening by trained laywomen. We purposively sampled 25 women from the pilot study and interviewed them about the screening experience. Atlas.ti was used to organize and analyze the transcripts.

Results Participants had overall positive experiences and were willing to undergo CBE screening by trained laywomen. Participants were motivated by the educational talk, shared newly acquired cancer knowledge with their social networks, and encouraged others to seek screening. Screened women suggested strategies for future interventions including combining breast and cervical cancer screening, using female providers, partnering with community leaders to increase uptake, and expanding services into the community.

Conclusions Asymptomatic Malawian women accepted CBE screening by trained laywomen and considered breast cancer an important health issue. Women appreciated combined education and screening services and proposed further linkage of breast and cervical cancer screening. Based on our results, training laywomen to educate the public on breast cancer and conduct CBE is a feasible breast cancer control strategy in sub-Saharan Africa.

PRESENTATION

Guzzetti, Stefano

QUALITY ASSURANCE IN BREAST PATHOLOGY

Guzzetti, Stefano¹; Pietribiasi, Francesca²; Castellano, Isabella³; Sapino, Anna^{3,4}

¹ASL Città di Torino; ²"Santa Croce" Hospital; ³University of Turin; ⁴FPO-IRCCS Cancer Institute

QUALITY ASSURANCE BUILDING FOR PATHOLOGY IN AFRICA

11:00–12:30

Wednesday

8 November

Correspondence stefano.guzzetti@libero.it

Breast cancer accounts for one of the leading tumours in women not only in high-income countries; in recent times, there are a rise of evidences of an increased incidence even in female populations of emergent nations.

The standardization both for diagnostic and therapeutic procedures, so that patients could receive an appropriate treatment irrespective of the healthcare facility to which they are addressed can be obtained through specific programs of quality control.

As pathologists, we are called to regularly evaluate and compare our procedures in all the phases of the management of breast tumour specimens, independently whether the final purpose is for diagnosis or for the assessment of prognostic factors.

Quality control programs in Italy, as in many countries, are at present well established in analytical phase, especially for the immunohistochemical evaluation of prognostic factors. In a program running for several years in Turin, Italy, the interobserver agreement in quantitative evaluation of hormone receptors expression and of proliferation index, as well as the scoring of the HER-2 status, is regularly checked through meetings where different pathologists compare their results on the same cases.

The blank slides of the cases are sent to the participants 15 days before each meeting; this allows not only an evaluation of the diagnostic concordance, but also a standardization of the staining procedures, being the slides processed in the different laboratories where each participant perform his daily work. This has lead over time to an increase of the overall agreement and, more important, to an its preservation.

Encouraging attempts have been recently developed in order to standardize the preanalytical phase; a particular attention has been paid to the elapsed time between the surgical removal and the fixation of the breast specimen, with the aim to establish the ischemic time, which must not exceed a specific value, and the correct methods of fixation, that depend on several factors each of which must be considered.

In conclusion, multi-institutional quality programs are a prerequisite of everyday diagnosis, but the type of program that may be selected is by definition strongly influenced by the resources available in a context. Poor resources should not mean poor quality and a continuous adaptation and improvement of the procedures is required in order to get the best out of what is applicable.

POSTER

WELCOME RECEPTION AND POSTER SESSION ONE

16:30–18:00

Tuesday

7 November

Gwede, Clement

P177 | PROMOTING ANNUAL REPEAT FECAL IMMUNOCHEMICAL TESTING AMONG ADULTS OF AFRICAN ANCESTRY IN THE UNITED STATES

Gwede, Clement^{1,2}; Christy, Shannon^{1,2}; Suppiah, Vivekka¹; Johnson, Jahvon¹; Abdulla, Rania¹; Meade, Cathy D.^{1,2}

¹H. Lee Moffitt Cancer Center & Research Institute; ²University of South Florida

Correspondence clement.gwede@moffitt.org

Objective Disparities in colorectal cancer (CRC) mortality and screening are greatest among United States (US) Blacks, including immigrants from the Caribbean, Africa, and South America. This paper reports annual repeat screening with a simple, non-invasive, less expensive, high-sensitivity and high-specificity fecal immunochemical test (FIT) among adults of African ancestry in underserved communities in the US.

Methods The Increasing Access to Colorectal Cancer Testing (I-ACT) study is a randomized controlled trial conducted among average risk US Blacks aged 50–75 years recruited in community settings in Florida and featuring a culturally-targeted educational intervention and FIT access. FIT screening was measured at 3 months and 12–15 post-intervention and analyzed by gender and foreign born status.

Results Of 560 subjects evaluated for eligibility, 394 were eligible and 330 enrolled. Roughly half (52%) of enrolled participants were male and 6% foreign born (of which 68% were male). Initial FIT uptake at 3 months post-intervention was 87%, including 13 abnormal Results At 12–15 months post-intervention, FIT uptake was 52% among all participants eligible for FIT screening (n=317). FIT uptake at 12–15 months among those who completed an initial FIT was 60% (164 out of 273 with normal initial FIT). A total of 44 (13%) did not complete initial FIT and only 3 of these individuals completed FIT screening at 12–15 months follow up. FIT uptake among foreign born was comparable to US-foreign born and differences in FIT uptake by gender were found.

Conclusions Feasibility and acceptability of FIT was demonstrated, however, repeat screening rates were not optimal. More intensive or stepped interventions are needed to increase repeat screening adherence to more than 80%. These findings have direct implications for adoption and sustainability of FIT screening interventions in underserved communities in the US and Africa.

POSTER

WELCOME
RECEPTION
AND POSTER
SESSION ONE

16:30–18:00

Tuesday

7 November

Gyan, Kofi

P021 | COMPARATIVE ANALYSIS OF BREAST CANCER PHENOTYPES IN AFRICAN AMERICAN, WHITE AMERICAN, AND WEST VERSUS EAST AFRICAN PATIENTS: CORRELATION BETWEEN AFRICAN ANCESTRY AND TRIPLE NEGATIVE BREAST CANCER

Gyan, Kofi¹

¹Komfo Anokye Teaching Hospital

Correspondence kkgyan58@gmail.com

Statement of Problem African American (AA) women bear a disproportionately high share of the breast cancer (BC) mortality burden in the United States. Socioeconomic disadvantages undeniably contribute to barriers in accessing the health care system. However, there are features characterizing the epidemiology of BC in AA that cannot be easily ascribed to socioeconomic inequities. Triple negative breast cancer (TNBC) is more common among AA and western sub-Saharan African BC patients compared to White Americans (WA) and Europeans. Little is known about TNBC in East Africa.

Background Invasive BC diagnosed 1998–2014 were evaluated: WA and AA patients from the HFHS; Ghanaian/West Africans from KATH; and Ethiopian/East Africans from SPHMMC. Histopathology and immunohistochemistry (IHC) for ER, PR and HER2/neu expression was performed on formalin-fixed, paraffin-embedded samples from all cases.

Research Hypothesis Does African ancestry has heritable marker of risk for particular patterns of BC pathogenesis by studying breast tumor phenotypes in four different population subsets: WA; AA; Ghanaians; and Ethiopians.

Methodology Histopathology to confirm the diagnosis of BC and IHC for molecular marker studies were performed on tumor specimens from AA, WA, Ghanaian and Ethiopian. Nuclear expression of hormone receptor (ER and PR) proteins was detected with specific monoclonal antibodies using a labeled streptavidin-biotin immunoperoxidase method. Tumors were scored as ER/PR-negative if they had less than 1% nuclear staining. Confirmed ER and PR positive tumors served as positive controls, and normal adjacent mammary gland ductless present in the sections of tumor served as internal positive controls for the hormone receptors. Grading was based on a scale from 0–3+. A specimen scored as 0 or 1+ was classified as HER2/neu negative, and specimens scored as 3+ were considered positive.

Results 234 Ghanaian; 94 Ethiopian; 271 AA; and 321 WA patients were compared. ER-negative and TNBC were more common among Ghanaian and AA compared to WA and Ethiopian cases (frequency ER-negativity 67.5% and 37.1% versus 19.8% and 28.7% respectively; frequency TNBC 53.2% and 29.8% versus 15.5% and 15%, respectively). Among patients younger than 50, prevalence of TNBC remained highest among Ghanaians (50.8%) and AA (34.3%) compared to WA and Ethiopians (15.9% in each).

Conclusions This study confirms an association between TNBC and West African ancestry; TNBC frequency among AA patients is intermediate between WA and Ghanaian consistent with genetic admixture following the West Africa-based trans-Atlantic slave trade. TNBC frequency was low among Ethiopians; this may reflect less shared ancestry between AA and Ethiopians.

POSTER

Hadoussa, Myriam

P178 | MANAGEMENT OF PANCREATIC CANCER IN THE MILITARY HOSPITAL OF TUNIS

**WELCOME
RECEPTION
AND POSTER
SESSION ONE**

16:30–18:00

Tuesday

7 November

Hadoussa, Myriam¹; Ayari, Jihene¹; Balti, Mehdi¹; Hadoussa, Nadia¹; Ben Nasr, Sonia¹; Haddaoui, Abderrazek¹

¹Military Hospital of Tunis

Correspondence myriam.hadoussa@gmail.com

Introduction Pancreatic cancer (PC) is the seventh most frequent tumor and the fifth leading cause of cancer related mortality worldwide. It is a heterogeneous disease at the molecular, pathological and clinical level. Patient's response to treatment depends on many factors, including the biology of their cancer, their performance status and their pattern of disease progression. We report here our experience about PC.

Materials and methods This retrospective study involved 25 patients treated for PC over a period of 4 years between January 2013 and December 2016.

Results The mean age was 60.2 years [36–73]. Sex ratio was 2.57. Fourteen (56%) patients were diabetic. Only one patient had a history of chronic pancreatitis. Seven patients (28%) had a history of vesicular lithiasis. A family history of PC was found in 2 patients (8%). The average consultation period was 4 months. The most common reason for consultation was abdominal pain (60%). Jaundice was initially present in 44% of cases.

The tumor was located mainly in the cephalic pancreas (62.51%) and in the tail (16.67%). The histological diagnosis was obtained in 20 patients (80%), 12 of whom had a pancreatic biopsy, 7 had an hepatic biopsy and one patient had a biopsy of peritoneal nodule. Histologically, well or moderately differentiated adenocarcinoma was predominant (95%). The CA19-9 was assayed in 23 patients and was raised in 17 among them. Carcinoembryonic antigen was measured in 18 patients and was elevated in 12 of them. The mean tumor size in CT scan was 46 mm [15-100]. Six (35.3%) patients had vascular tumor extension. Distant metastases were found in 15 patients (60%) and were mainly hepatic.

Ten patients underwent surgery (40%). Cephalic duodenopancreatectomy was performed in 6 patients, 5 of whom had non-tumoral surgical limits. Palliative surgery was attempted in 4 patients mainly for biliary drainage. Twenty patients (80%) received chemotherapy that was palliative in 15 of them (75%), adjuvant in 4 patients (20%). Only one patient (5%) received neoadjuvant chemotherapy. Ten patients received a single line of chemotherapy, eight received 2 lines and only two had 3 lines. The most commonly used protocol was GEMOX. Only 4 patients had relapsed with a mean delay of 3.75 months. Relapses were locoregional in half of cases with distant metastases in all cases.

Conclusion Despite therapeutic advances, particularly in surgical techniques, pancreatic cancer remains an extremely aggressive malignancy with a dismal prognosis.

POSTER

WELCOME RECEPTION AND POSTER SESSION ONE

16:30–18:00

Tuesday

7 November

Hadoussa, Myriam

P179 | METASTATIC COLORECTAL CANCER AT INITIAL DIAGNOSIS: EXPERIENCE OF THE MILITARY HOSPITAL OF TUNIS

Hadoussa, Myriam¹; Ayari, Jihene¹; Balti, Mehdi¹; Hadoussa, Nadia¹;
Ben Nasr, Sonia¹; Haddaoui, Abderrazek¹

¹Military Hospital of Tunis

Correspondence myriam.hadoussa@gmail.com

Introduction Colorectal cancer is the third leading cause of cancer-related mortality worldwide. It is metastatic at diagnosis in about 25% of cases. The aim of this study was to describe the characteristics of metastatic colorectal cancer (mCRC) at diagnosis in Tunisia and to determine their prognostic factors.

Materials and Methods This retrospective study involved 30 patients treated for mCRC at diagnosis over a period of 4 years between January 2011 and December 2014.

Results The mean age was 60 years [36–74]. Sex ratio was 1.37. A personal history of colorectal polyposis was found in 6.66% of patients. Only 6.66% had a family history of CRC. Acute intestinal occlusion was inaugural in 36.66% of cases. The tumor was localized in the sigmoid in 36.66% and in the recto-sigmoid hinge in 16.66%. All tumors were luberkhonian adenocarcinoma with a colloidal component in 13.33% of cases. The RAS study was performed in 33.33% of patients of whom 16.66% were “wild RAS” and 16.66% were “mutated RAS”.

Metastases were hepatic and pulmonary in 63.33% and 43.33%, respectively. They were resectable in 16.66%, potentially resectable in 10% and never resectable in 73.3% of cases.

All patients had first-line chemotherapy with FOLFOX in 63.33% and FOLFIRI in 3.33% of cases. Targeted therapy was used in the first line in 33.33% of patients. Second-line chemotherapy was used in 40% of cases. Third-line chemotherapy was used in 13.33% of patients.

The median follow-up was 33 months. The median overall survival was 34 months. It was significantly decreased by the right colon tumor localization and by the presence of colloid component, vascular emboli and peri-nervous involvement. Survival was better in the wild-type RAS group.

Conclusion Within the limits of our study and despite difficulties in accessing targeted therapies, we found survival rates and prognostic factors comparable to those found in the literature.

POSTER

Hadoussa, Myriam

P434 | PLASMA HOMOCYSTEINE, FOLATE, VITAMIN B12 AND RISK OF BREAST CANCER IN WOMEN

**WELCOME
RECEPTION
AND POSTER
SESSION ONE**

16:30–18:00

Tuesday

7 November

Hadoussa, Myriam¹; Ayari, Jihene¹; Balti, Mehdi¹; Hadoussa, Selma¹; Ben Nasr, Sonia¹; Haddaoui, Abderrazek¹
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Background Homocysteine is associated with oxidative damage and metabolic disorders, which may lead to carcinogenesis. Folate and B12 vitamin are required in homocysteine metabolism and are essential for nucleotide biosynthesis, DNA replication, synthesis and repair. Thus, several studies have demonstrated a relationship between these three parameters and the risk of developing breast cancer.

Materials and Methods A case-control study was conducted with 45 patients diagnosed with breast cancer and 35 healthy women. The serum levels of vitamin B12, folate and homocysteine were compared between the two groups in order to find a correlation between these levels and the risk and the evolution of breast cancer. The two populations considered had the same age range.

Results The mean age at diagnosis was 47 years [28–71]. Half of patients were menopausal. Twenty one patients (44%) had a family history of cancer including 10 cases of breast cancer. The tumor was localized in 73% of cases. Invasive ductal carcinoma was found in 89.60%. The mean homocysteine level in patients with breast cancer was 9.88 $\mu\text{mol/l}$ [2.73–22.79] whereas it was 7.36 $\mu\text{mol/l}$ in the control group [2.47–17] and the difference was statistically significant ($p = 0.007$). B12 vitamin levels were also significantly higher in breast cancer than controls with mean of 358.35 pg/ml [119–1500] versus 243.57 pg/ml [11–680] ($p = 0.018$). Folate levels were significantly higher too in breast cancer patients with a mean of 10.22 ng/ml [4.79–24] versus 6.48 ng/ml [2–15] ($p = 0.001$). Furthermore, a significant relationship was observed between vitamin B12 and the histological tumor type with $p = 0.042$, and between obesity and this vitamin ($p = 0.037$). Also, we found a significant association between folate and SBR grade ($p = 0.013$) whereas there was no significant correlation with other factors.

Conclusion In our study, hyperhomocysteinemia was associated with an increased risk of breast cancer. However, higher levels of folate and vitamin B12 found in cancerous women were due to the therapeutic effects of cytotoxics. The increased risk of breast cancer associated with these parameters warrants further investigation.

POSTER

Hamdi Cherif, Mokhtar

P415 | A PROPOS DE 200 CAS

Hamdi Cherif, Mokhtar¹; Kara, Lamia¹; Hammouda, Doudja²; Fouatih, Zoubir³
¹Universite Setif; ²INSP; ³SEMEP Universite

**WELCOME
RECEPTION
AND POSTER
SESSION ONE**

16:30–18:00

Tuesday

7 November

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The National Registry Network (RNRC) was created in 2014 as part of the 2015–2019 Cancer Plan and the institutionalization of cancer registries.

Objective To provide, for the first time, cancer incidence data for Algeria based on data from a network covering 52% of the population.

Material and Method These are the new cases recorded from 18 registers covering a population of 20 224 844, from a general population of 38 700 000 inhabitants for the year 2014. The data are entered and analyzed by the Canreg software 5, provided by IARC

Results The coverage of national registration rate is 82% with a 52% coverage rate of 52% at 31/12/2014.

The number of new cases during the year 2014 is 41,870 cases (16,748 men and 25,122 women). The overall crude rate is 106 / 100,000 (h), the standardized rate is 114.5 / 100,000. Crude and standardized rates in men are respectively 100.2 and 109.2 / 100,000. In women are respectively 111.8 and 119.8 / 100,000.

In men, frequent cancers are lung, colon-rectum, bladder, prostate, stomach, pharynx naso, NHL, larynx and leukemia cancers.

In women, breast cancers followed by colorectal, cervical, thyroid, NHL, stomach, biliary and leukemia cancers.

The RNRC covers half of the Algerian population with the common incidence data for research and cancer control.

POSTER

POSTER SESSION TWO

16:30–18:00
Thursday
9 November

Hayes, Vanessa

P250 | IDENTIFICATION OF GENETIC RISK FOR PROSTATE CANCER PRESENTATION AND ADVANCED DISEASE OUTCOMES IN SOUTH AFRICAN MEN

Hayes, Vanessa^{1,2,3}; Petersen, Desiree¹; Bornman, Riana³

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Increased prostate cancer incidence and associated mortality, decreased age at diagnosis and aggressive pathological presentation, has been significantly associated with an African-ancestry in the context of the United States. Along with a significant link to heritability, genetics has been proposed as the underlying factor contributing to the associated African-ancestry. Limited genetic studies have, however, been performed within the context of Africa. Lack of appropriate prostate cancer case-control studies is the major limiting factor. The Southern African Prostate Cancer Study (SAPCS) is an ongoing collection of South African men with or without prostate cancer, providing a bioresource for population-specific genetic analyses. Reporting aggressive disease presentation within the SAPCS, we investigated the power for largely European-derived published prostate cancer risk alleles ($n = 46$ DNA variants) to predict prostate cancer risk in South African men. Identifying an association with three out of 40 population informative risk alleles, two within the 8q24 region 2 (rs6983561 and rs13254738) and one in 17q24 (rs1859962), none remained independently predictive after adjusting for multiple testing, with no improvement on the predictive capability of current serum prostate specific antigen (PSA) testing. Utilising an exomic array approach (239,129 autosomal markers) showed no additional novel biologically relevant risk loci. Lack of association could be explained by (i) restriction of the exomic array content to the coding regions, (ii) predominance of European-derived variants and rarer gene variants captured in the arrays, and/or (iii) reduced study power. Our data therefore calls for a genome-wide approach to identifying the inherited genetic link to prostate cancer within Africa. Using a genome-wide autosomal approach and African-ancestral admixture modeling, we identify three potentially novel prostate cancer loci associated with aggressive disease presentation within the SAPCS, at 3q26, 9q34 and 9p24. Not confined to the constraints of the nuclear genome, whole mitochondrial genome sequencing suggests an association between the earliest derived African-specific human maternal lineages and aggressive prostate cancer presentation.

PRESENTATION

GENETICS/
EPIGENETICS
& OTHER
ABSTRACTS

13:30–14:30

Friday

10 November

Hayes, Vanessa

REDEFINING THE MUTATIONAL LANDSCAPE OF AGGRESSIVE PROSTATE CANCER IN MEN OF AFRICAN ANCESTRY

Hayes, Vanessa^{1,2,3}; Jaratlerdsiri, Weerachai¹; Bornman, Riana³

¹Garvan Institute of Medical Research; ²University of Sydney;

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Prostate cancer is a genetic disease, driven by acquired changes in the prostate genome. These somatic events provide opportunities for much needed prostate cancer sub-classification, aiding diagnosis and prognosis, and ultimately therapeutic response. Genomic studies have, however, been biased towards non-African populations, leaving a gap in our understanding of the genomic events driving aggressive disease presentation.

It is well established that African ancestry is a significant risk factor for advanced prostate cancer. Specifically, African-American men have the highest risk of prostate cancer globally, while mortality rates are 2.4- and 5-fold greater for African-Americans than Americans of European and Asian ancestry, respectively. Using the Southern African Prostate Cancer Study (SAPCS), we have reported aggressive prostate cancer presentation within South African men of African ancestry.

The sequencing of 333 European ancestral prostate cancer exomes as part of The Cancer Genome Atlas (TCGA) project, has identified seven major prostate cancer sub-classifications, four involving the generation of oncogenic fusion gene events. Using the SAPCS as our study resource, we show these fusion events to be largely absent in men of African ancestry, calling for whole genome sequencing efforts to characterize the somatic mutational profile of aggressive prostate cancer in men from Africa.

In this study we have generated whole genome mutational profiles of South African men with aggressive localized prostate cancer at presentation. We compare the between patient and between cohort, including African American and European, mutational landscapes. While reporting a high degree of between patient genomic heterogeneity, overall we observe an increased number of small somatic oncogenic variants and an inverse number of large genomic rearrangements compared with Gleason-matched European-derived cohorts. While no known European-predominant oncogenic fusion events were identified, there appears to be a unique subset of larger structural variations of relevance in men of African ancestry, as comparable to the single study of African-Americans.

To the best of our knowledge, this is a first-of-its-kind whole genome sequencing of advanced prostate cancer within Africa. Additionally, we performed the first genome profiling for larger complex structural variations within the prostate cancer genome using a novel method known as next generation mapping. Using this method we were able to detect a new set of potentially oncogenic drivers of prostate cancer.

PRESENTATION

Henderson, Marianne

CURRENT STATUS OF BIOMARKER TESTING IN CANCER AND BIOBANKING

STATUS OF BIOMARKER TESTING IN CANCER AND BIOBANKING

07:15–08:20

Wednesday

8 November

Henderson, Marianne¹

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A rise is expected in non-communicable disease burden, particularly cancer, in Africa over the next 20 years. Stratified medicine treatment and target therapies promise to ensure better selection and response to drugs and exclude adverse effects, but in Africa the genetic background is rarely addressed as a biomarker.

Current biomarker testing on cancer can address both patient and tumor diversity that increases the ability to provide better diagnosis, prognosis and therapy selection. But lack of foundational healthcare services, insufficient number and training of medical personnel experts, and technology platforms hamper the ability to apply latest biomarker tests in Africa. While simpler methods may be available, the lack of validation of these tests on genetically diverse groups that inhabit the African continent leave questions regarding the clinical relevance of variations and biomarkers from polymorphisms that are normal part of a particular population.

Biobanks are the currency for representation of LMICs' populations in scientific research. They can provide populations in these regions with the equitable opportunity for research to include their particular genetic and environmental make-up and provide solutions that are also applicable to them and facilitate research collaborations that in turn increase economic investment, training, collaboration, publications, technology transfer, and health care improvements.

The round table discussion will focus on the current status of biomarker testing globally and in Africa and how biobanking can contribute towards their development and validation and their utility in clinical settings.

POSTER

Henke, Oliver

**P345 | BOOSTING PALLIATIVE CARE THROUGH CANCER CARE.
AN EXPERIENCE FROM KILIMANJARO REGION IN TANZANIA**

**POSTER
SESSION**

TWO

16:30–18:00

Thursday

9 November

Henke, Oliver¹; Massawe, Anna¹; Serventi, Furaha¹

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Background Kilimanjaro Christian Medical Centre (KCMC), a referral and University Teaching Hospital in Northern Tanzania, serving a population of approximately 12 million. According to WHO, the rate for the need of Palliative Care (PC) is 200/100,000 in the African Region (1). Understanding this, KCMC established an interdisciplinary PC Team in 2007. However, this team could not work sustainably due to lack of funding, allocation of staff and too low number of trained professionals, hence its services vanished. With establishing a Cancer Care Centre (CCC) at KCMC, the urgent need of PC services was apparent, as 80% of the Cancer patients are diagnosed at advanced stages in Tanzania (2).

Planning The former PC team was reactivated and under the guidance of the PC programme from the Evangelical Lutheran Church in Tanzania (3), priorities were set as: 1. Providing oral morphine and other essential drugs, 2. regular PC ward rounds (WR) at KCMC, 3. offering Home care, 4. Conducting PC training for staff from KCMC and other hospitals of Kilimanjaro Region.

Achievements PC WR and home care services were installed immediately as first implementation. Starting randomly in the beginning, WR became a constant after 6 months to most of the KCMC wards. Funding through Foundation for Cancer Care in Tanzania (USA) and Mission Eine Welt (Germany) made it possible to buy essential drugs for complementary service to the patients and to dispense oral morphine to 6 Hospitals in Kilimanjaro Region. A PC training week was conducted to 21 KCMC and District Hospitals staff to provide knowledge in handling morphine, pain management and other essential basics.

Conclusion Fixed appointments for PC WR will motivate non-PC staff to identify patients in need prior to the ward round. Our experience shows, staff appreciates help in caring for those patients as they feel sometimes helplessness themselves. Secondly, the WR functioning as recruitment for PC interested staff and many non-PC trained nurses and doctors attend the WR. Thirdly, this approach assures early integration of PC to the patients with newly diagnosed Cancer diseases. Having funding is an essential prerequisite for PC services, but even a low scale funding is shown to be sufficient to start services. Offering of PC training does not only transfer knowledge, it is also essential to build networks throughout staff in the region and provide a team spirit. Hence, new ideas and inventions came from the trained class itself to tackle future tasks.

PRESENTATION

SITE SPECIFIC CANCERS & OTHER ABSTRACTS

13:30–14:30

Thursday

9 November

Henry, Melissa

DEVELOPMENT OF A SCREENING ALGORITHM FOR EARLY DETECTION OF MAJOR DEPRESSIVE DISORDER IN HEAD AND NECK CANCER PATIENTS POST-TREATMENT: A LONGITUDINAL STUDY

Henry, Melissa¹; Rosberger, Zeev¹; Hier, Michael¹; Zeitouni, Anthony¹;
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Ilanovski, Lola¹; Fuhrmann, Fabienne¹

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Objective The purpose of this study was to identify predictors of Major Depressive Disorder in Head and Neck Cancer patients at 3 months post-diagnosis, with a particular focus on previously unexamined historical and contextual factors. The intention was to develop a risk stratification tool enabling the identification of patients at the time of head and neck cancer diagnosis most at risk of developing major depressive disorder at 3 months post-diagnosis (post-treatment).

Methods Prospective longitudinal study of a representative sample of 223 consecutive adults (72% participation) newly diagnosed (<2 weeks) with a first occurrence of primary head and neck cancer, including validated self-administered measures, SCID-I Interviews, and medical chart reviews.

Results The 3-month period prevalence of major depressive disorder, anxiety disorder, and substance use disorder was 20.4%, 26.5%, and 4.8%; with point prevalences of 6.8%, 25.5% and 4.2% upon head and neck cancer diagnosis; 14.2%, 16.6% and 3.6% at 3 months, and 22.6%, 24.7% and 23.7% lifetime. major depressive disorder, anxiety disorder, and substance use disorder showed stability over time ($p < 0.05$ - 0.01). Patients most susceptible to develop major depressive disorder in the immediate post-treatment period were those faced with advanced-stage cancer ($p = 0.04$), surgical treatment ($p = 0.04$), past SCID-I anxiety disorder ($p = 0.01$), and higher level of anxiety upon diagnosis (HADS) ($p = 0.05$). 3-month point prevalence of anxiety disorder was solely predicted by concomitant life stressors ($p = 0.001$). Substance use disorder was not further investigated due to small caseness.

Conclusions This study underscores the importance of attending early-on to mental health in head and neck cancer clinics starting with pre-treatment anxiety, as well as of elucidating mechanisms whereby the latter predisposes towards post-treatment major depressive disorder. It underlines the importance of screening for distress as well as development of a mental wellness program in this population. We will propose avenues for such a program.

POSTER

WELCOME RECEPTION AND POSTER SESSION ONE

16:30–18:00

Tuesday
7 November

Henry, Melissa

P180 | PREVALENCE AND RISK FACTORS OF SUICIDAL IDEATION IN PATIENTS NEWLY DIAGNOSED WITH HEAD AND NECK CANCER: PROSPECTIVE LONGITUDINAL STUDY INDICATING THE NEED FOR SUICIDE PREVENTION GUIDELINES

Henry, Melissa¹; Rosberger, Zeev¹; Bertrand, Lia¹; Klassen, Christina¹;
Hier, Michael¹; Zeitouni, Anthony¹; Kost, Karen¹; Mlynarek, Alex¹;
Richardson, Keith¹; Black, Martin
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Importance Head and neck cancer (HNC) patients have been identified as at increased risk for suicide. No longitudinal study has investigated suicidal ideation, attempts, and completion in HNC patients using a longitudinal design.

Objectives 1) Determine one-year period prevalence of suicidal ideation, suicide attempt, and completed suicide in patients newly diagnosed with a first occurrence of HNC; 2) Characterize stability and trajectory of suicidal ideation over the year following cancer diagnosis; and 3) Identify at-risk profiles.

Design Prospective longitudinal study with a one-year follow-up (2012–2016), including validated self-administered measures, Structured Clinical Interviews for DSM diagnoses, the 9-point Observer-Rated Disfigurement Scale for Head and Neck Cancer Patients, and medical chart reviews.

Setting and Participants Recruitment took place at three university-affiliated outpatient departments of otolaryngology–head and neck surgery. A representative sample of 223 consecutive patients (71.9% participation rate) newly diagnosed (<2 weeks) with a first occurrence of primary HNC, 18 years or older, able to consent, and with a Karnofsky Performance Scale score ≥ 60 . Completion rates for follow-up questionnaires were 71%, 67.1%, and 66.3% for 3, 6, and 12 months, respectively.

Main Outcome(s) and Measure(s) The Beck Scale for Suicidal Ideation (BSI) was used to measure suicidal ideation.

Results Sixteen percent (15.7%) of HNC patients were suicidal during the first year following their cancer diagnosis, with a point prevalence of 8.1% <2 weeks of diagnosis, 14.8% at 3 months, 9.4% at 6 months, and 10.4% at 12 months; 0.4% (n=1) committed suicide within 3 months and 0.9% (n=2) attempted suicide, one within 3 months and another within 6 months. An a-priori comprehensive conceptual model revealed two predictors of one-year period prevalence of suicidal ideation in HNC: past psychiatric history, with a two-fold risk of suicidality ($p=0.017$; $\beta=2.1$; 95% C.I.= 0.4–3.8), and coping with the cancer diagnosis using substances (alcohol and/or drugs) ($p=0.008$; $\beta=0.61$; 95% C.I.=0.16–1.06). All other predictors including medical were non-significant. A clinical suicide risk assessment revealed low risk in 71.4% and medium to high risk in 28.6%.

Conclusions and Relevance Suicide prevention strategies are clearly needed in head and neck oncology, as well as their integration into clinical practice guidelines for HNC. This study supports routine screening for suicidality during diagnosis and early rehabilitation, as well as in long-term follow-up. The inclusion of past psychiatric history and substance-based coping as part of routine clinical intake is indicated.

POSTER

WELCOME RECEPTION AND POSTER SESSION ONE

16:30–18:00

Tuesday
7 November

Henry, Melissa

P181 | ANXIETY DISORDERS CONTRIBUTE TO EXTENT OF OPIOID PRESCRIPTION IN PATIENTS WITH HEAD AND NECK CANCER: A LONGITUDINAL STUDY

Henry, Melissa¹; Alias, Ali¹; Richardson, Keith¹; Rosberger, Zeev¹;
Hier, Michael¹; Zeitouni, Anthony¹; Kost, Karen¹; Mlynarek, Alex¹;
Black, Martin¹; MacDonald, Christina¹

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Objective The purpose of this study was to determine, one year post-head and neck cancer (HNC) diagnosis, the contribution of past and current DSM psychiatric diagnoses (i.e., Major Depressive Disorder (MDD), Anxiety Disorder (AD) and Substance Use Disorder (SUD)) as well as other psychosocial variables of interest on extent of opioid prescription.

Methods Prospective longitudinal study of 225 consecutive adults (72% participation) newly diagnosed with a first occurrence of primary HNC, including validated psychometric measures, Structured Clinical Interviews for DSM Disorders, and medical chart reviews. Opioid doses were translated into standardized morphine milligram equivalent (MME) using the Centers for Disease Control and Prevention guidelines.

Results 54.7% (123/225) received opioids at some point during the first 12 months post-HNC diagnosis: 37.3% (84/225) upon HNC diagnosis before starting treatments, 40.4% (91/225) during treatments, and 31.1% (70/225) following treatments. Patients having received opioids over the year presented a cumulative average of 4042.0 MME (s.d.=15,319.3; range=0.6-168101.1), with a post-treatment average of 3417.6 MME (s.d. 10,411.0; range 0.63-76,114). A Box-Cox transformation of the primary outcome MME was performed due to presence of a non-normal distribution. When adjusting for TNM stage ($\beta=0.28$, $p=0.000$) and level of pain on FACT ($\beta=0.18$, $p=0.01$), there was an effect of MDD ($\beta=-1.99$; $p=0.005$) and SUD ($\beta=2.08$; $p=0.002$) on extent of opioid prescriptions ($R=0.56$, Adj. R2 Change=0.24, $p=0.000$). When adjusting for additional time-course variables (i.e., treatment, disease progression/recurrence, and death), there was an effect of AD (lifetime and upon diagnosis)($\beta=2.46$; $p=0.03$ and $\beta=-2.16$; $p=0.03$)($R=0.56$, Adj. R2 Change=0.24, $p=0.000$).

Conclusions This study underlines the importance of paying careful attention to psychiatric diagnoses and especially to Anxiety Disorders in opioid management. While this may be specific to HNC, attention to mental health may be warranted in other oncological populations as well.

POSTER

WELCOME RECEPTION AND POSTER SESSION ONE

16:30–18:00

Tuesday

7 November

Henry, Melissa

P182 | BETTER OUTCOMES FOR THYROID CANCER PATIENTS RECEIVING AN INTERDISCIPLINARY TEAM-BASED CARE APPROACH (ITCA-THYCA): PROGRAM EVALUATION RESULTS INDICATING A NEED FOR FURTHER INTEGRATED CARE AND SUPPORT

Henry, Melissa¹; Frenkiel, Saul¹; Chartier, Gabrielle¹; Payne, Richard¹;
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Background Thyroid cancer is generally associated with a favorable prognosis and excellent surgical outcomes. Consequently, its treatment is medically focused and current guidelines recommend interdisciplinary care including access to a nurse for complex cases alone. Our study evaluated for the first time the broader need for and impact of an Interdisciplinary Team Based Care Approach (ITCA-ThyCa) for general Thyroid Cancer patients, including a dedicated nurse as well as patient-reported outcomes, as is recommended worldwide in cancer care.

Methods ITCA-ThyCa was evaluated within a quasi-experimental design using the Centers for Disease Control Framework, including process and outcome measures. Patients eligible were adults with a biopsy indicating confirmed or highly suspicious thyroid cancer (TNM classification + Bethesda V or VI). The Experimental Group (EG) received ITCA-ThyCa and the Comparison Group (CG), usual care alone.

Results In our sample comprised of 200 participants (122 EG; 78 CG), ITCA-ThyCa patients showed significantly better outcomes than CG patients, namely: higher levels of overall wellbeing ($p=0.001$), and fewer physical ($p=0.003$) and practical ($p=0.003$) issues and concerns. More satisfied with their overall care ($p=0.028$), including care coordination ($p=0.049$) they reported their doctor as more approachable ($p=0.007$), respectful ($p=0.005$), and trustworthy ($p=0.077$; trend), and were more likely to recommend their hospital ($p=0.02$). Ninety-eight percent of EG patients recommended ITCA-ThyCa.

Conclusion Data from our program illustrates that hospital resources should not be allocated based on medical trajectory alone and challenges the idea that thyroid cancer is straightforward. Thyroid cancer patients seem to experience symptom distress at a level comparable to – or exceeding – that of general oncological patients, indicating that better integrated care and support are in order and that guidelines may need to be revised accordingly.

PRESENTATION

Horner, Marie-Josephe

HIGH CANCER BURDEN AMONG ANTIRETROVIRAL THERAPY USERS IN THE MALAWI HIV-CANCER MATCH STUDY

EPIDEMI- OLOGY

ABSTRACTS

14:40–16:30

Wednesday

8 November

Horner, Marie-Josephe^{1,2}; Chasimpha, Steady³; Phiri, Sam⁴; Malisita, Kennedy⁵; Dzamalala, Charles^{3,6}; Gopal, Satish^{1,2,6,7}

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⁶Malawi Cancer Consortium and Regional Center of Research Excellence for NCDs; ⁷University of North Carolina Institute for Global Health & Infectious Diseases

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Background With improved antiretroviral therapy (ART) access in Sub-Saharan Africa, epidemiologic data are needed to characterize evolving cancer burden in contemporary HIV-infected populations. In the Malawi HIV-Cancer Match Study, we estimate the burden of cancer among ART initiators.

Methods In this observational, retrospective cohort study, we used probabilistic algorithms to link cancer cases from the population-based national cancer registry with electronic medical records supporting ART delivery in the country's two largest HIV cohorts, Lighthouse Trust (LT) in Lilongwe (2007–2010) and Queen Elizabeth Central Hospital (QECH) in Blantyre (2000–2010). Analysis was restricted to naïve ART initiators. Incidence rates and 95% confidence intervals were calculated separately for each cohort, sex, individual cancer sites, early versus late incidence periods, and WHO stage at ART clinic enrollment. Rates were calculated non-parametrically as the number of events divided by person-time at risk. We applied direct standardization for age (0–15, 16–25, 25–35, 36–45, 46–55, 56+ years) and sex (male, female) using population weights from the combined cohorts. Otherwise, we used sex-specific age-adjustment for male and female populations, respectively.

Results Our study included 28,576 patients receiving ART, median age was 33. We identified 4,346 cancers. New patients tended to initiate ART at advanced WHO stage (LT stage III or IV: 55%; QECH stage III or IV: 66%). Between 5%–18% of patients presented to care with prevalent malignancies, which were predominantly AIDS-defining cancers. Kaposi sarcoma (KS) incidence was highest (347 to 1204 per 100,000 person-years), followed by cervical cancer (39 to 108). KS incidence was greatest during the early period of 4–24 months after ART initiation. Non-AIDS defining cancers represent an emerging burden, accounting for 2% to 15% of the total cancer case load.

Conclusions For the first time, we provide comprehensive baseline data measuring cancer burden for HIV/AIDS populations in Malawi. Integrated KS and cervical cancer management within ART programs remains a critical component of HIV care in Malawi in the current era. Observed cancer incidence rates in our study vary in magnitude across cohorts and demonstrate heterogeneity of record linkage outputs that may be obtained from real-world, routine clinical databases used for HIV care in Africa. Our results represent a range of the measurable cancer burden, rather than a single point estimate. Longer-term studies are needed to monitor potential shifts in the distribution of the cancer burden towards non-AIDS defining cancers as ART scale-up continues.

POSTER

Horner, Marie-Josephe

P444 | EVER-RISK OF DEVELOPING CANCER AMONG NEW ART USERS IN THE MALAWI HIV-CANCER MATCH STUDY

**POSTER
SESSION
TWO**

**16:30–18:00
Thursday
9 November**

Horner, Marie-Josephe^{1,2}; Chasimpha, Steady³; Edwards, Jess¹; Phiri, Sam⁴; Dzamalala, Charles^{3,5}; Gopal, Satish^{1,2,5,6}

¹University of North Carolina; ²UNC Project; ³Malawi Cancer Registry;

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Background In the Malawi HIV-Cancer Match Study, we estimate the burden of cancer among ART initiators. We address the challenge of cumulative incidence estimation in the presence of 1) competing risks and 2), a large proportion of individuals who already have the disease at the start of follow-up. Ignoring high baseline prevalence of AIDS-defining cancers Kaposi sarcoma and cervical cancer, which are clinical indications to initiate ART, may lead to underestimation of the true risk of developing cancer in the HIV+ population.

Methods Our study includes prospectively followed ART initiators linked to cancer cases from the national cancer registry. The overall age-sex-adjusted cancer incidence was calculated using direct standardization. We used a modified Kaplan-Meier approach to estimate adjusted cumulative incidence (ACI) without conditioning on event-free status at baseline enrolment and accounting for competing risk of death. The ACI was estimated at index ages 20–29, 30–39, and 40–49 years assuming a scenario of the youngest age of cancer diagnosis at 20 years and age-sex-specific cancer prevalence derived from the cohort. Age in discrete years was used as the time scale, and number of years at risk were a function of the width of the age group. Survival time was censored at the last date of contact or administratively on 31/12/2010.

Results Overall, 14,927 naïve ART initiators contributed at least 1 year between the ages of 20 and 86 years, 18,930 person-years at risk, and 3328 incident and prevalent events within the Lighthouse Trust cohort. Baseline prevalence of cancer among men and women by age group was: 19.2% and 14.1% (20–29 years); 21.6% and 16.2% (30–39 years); 22.7% and 18.8% (40–49 years), respectively. The age-sex-adjusted incidence of cancer was 1254 per 100,000 person-years among men and 1257 among women. For a 20-year old man, the risk of already having or developing cancer by age 29 was 25% and 21% for a 20-year old woman. By age 30, the ACI increases to 28% for men and 23% for women.

Conclusions Our estimates of ACI use the most current age-specific cancer incidence rates in a population of young ART users, are less susceptible to historic calendar trends in cancer incidence, and may be more reflective of risk experienced by those alive today. Estimates of cancer risk are important public health measures of the overall cancer burden that may prove useful for planning and evaluating cancer control programs focused on HIV+ individuals in Africa.

POSTER

WELCOME RECEPTION AND POSTER SESSION ONE

16:30–18:00

Tuesday

7 November

Horo, Apollinaire

P162 | PROFIL EPIDEMIOLOGIQUE ET MOLECULAIRE DES CANCERS DU SEIN DES FEMMES DE MOINS DE 40 ANS EN COTE D'IVOIRE

Horo, Apollinaire¹; Aka, Kacou Edele¹; Didi-Kouko Coulibaly, Judith²; Diabaté, Aboubacar²; Effi, Benjamin³; Koné, Mamourou¹

¹Universite Felix Houphouet Boigny / Chu De Yopougon; ²Universite Felix Houphouet Boigny / Chu De Treichville; ³Universite Allassane Ouattara/ Chu De Bouaké

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Contexte L'amélioration du pronostic du cancer du sein des femmes jeunes en Afrique passe par une meilleure caractérisation des tumeurs.

Objectifs Déterminer le profil moléculaire des cancers du sein chez les femmes de moins de 40 ans en Côte d'Ivoire.

Méthode Etude rétrospective multicentrique de 20 mois, qui a colligé 76 cas de cancers chez des femmes de moins de 40 ans sur 355 femmes enregistrées dans le registre des cancers de Côte d'Ivoire. Les caractéristiques épidémio-cliniques et histologiques ont été étudiées. L'immunohistochimie permettait d'apprécier les récepteurs hormonaux, la surexpression de l'oncoprotéine HER2 et la valeur pronostique du Ki-67.

Résultats Les adolescentes et les adultes jeunes représentaient 20,3% des cancers de sein du registre. L'âge moyen des femmes était de 35 ans ($\sigma = 3.4$ ans, IC 95% = [2,6415–4,1785]). Les circonstances de découvertes les plus fréquentes étaient un nodule mammaire (73%) suivi des complications locorégionales (21%). Le délai de consultation était de moins de 3 mois dans 34,2% des cas. 78% des cancers étaient diagnostiqués au stade II et III. Le type moléculaire le plus fréquent était le luminal A (41%), suivi des triples négatifs (30%), puis des RH-/HER2 + (10,5%) et enfin luminal B (HER2-10,5%) (HER2+ -8%).

Conclusion Un tiers des cancers du sein était triple dans un contexte de ressources limitées expliquant le pronostic péjoratif chez les moins de 40 ans. Une prise en charge adaptée au profil moléculaire devrait être d'un apport essentiel.

PRESENTATION

BRINGING CYTO- GENETICS TO AFRICA

13:30–14:30

Wednesday

8 November

Hu, Peter

BRINGING CYTOGENETICS TO AFRICA

Hu, Peter¹; Frimpong, Lawrence¹

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Cytogenetics plays an important role in the diagnosis and prognosis of cancer. Many non-random chromosomal abnormalities are associated with specific types of solid tumors and leukemia of which often renders the definitive diagnosis as well as prognosis and monitoring. Thus, the ability to identify chromosomes from G-banded metaphase spreads is crucial in a cytogenetic laboratory. This workshop will provide a comprehensive look at how to set up a cancer cytogenetics laboratory to perform G-banded karyotyping analysis. Participants will learn how to set up a laboratory which enables technologists to perform pre-analytical, analytical, and post-analytical aspects of cytogenetics. Audience will also spend part of the session learning how to identify chromosomes.

POSTER

WELCOME RECEPTION AND POSTER SESSION ONE

16:30–18:00

Tuesday
7 November

Ibraheem, Abiola

P161 | FORMAL ASSESSMENT OF TEAMWORK AMONG CANCER HEALTH CARE PROFESSIONALS IN 3 LARGE TERTIARY CENTERS IN NIGERIA

Ibraheem, Abiola¹; Awolude, Tosin²; Sowunmi, Anthonia³; Habeebu, Muhammad³; Poopola, Abiodun⁴; Polite, Blase¹; Olopade, Olufunmilayo¹

¹University of Chicago; ²University of Ibadan; ³University of Lagos;

⁴Lagos State University

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Context Cancer is fast becoming a common cause of death in developing countries. In the last decade, there have been strategies to bring quality cancer care to underserved patients around the world but these efforts shows varying degrees of success due to different challenges. In less developed world limited human resources and poor utilization of the principle of team work are major contributors to achieving quality cancer service.

Nigeria as expected has exponential cancer incidence and challenges in providing cancer care.

In the country's health system, health care professionals are affiliated with two main professional societies (i) The Nigerian Medical Association (NMA) formed by physicians only and (ii) Joint Health Sector Union (JOHESU) formed by other health care professionals in the health system. Between these two societies there has been ongoing battles for supremacy leading to lawsuits, altercations, endless cycles of strike and outright hostility in some work environment. These, without doubt, have implications in providing quality health care especially to cancer patients who need long time uninterrupted services.

Purpose The intent of this study was to assess interprofessional health teamwork as perceived by health care workers caring for cancer patients in Nigeria and the implication on the quality services to the patients.

Method We conducted a survey among health care professionals involved in cancer care in 3 centers in the southwestern part of Nigeria from July to November 2016. Respondents rated teamwork using the previously validated "Safety Attitudes Questionnaire". For this analysis we focused on the teamwork climate subscale. This subscale is scored on a scale of 0–100 with mean (SD) values; we compared ratings by professionals using analysis of variance.

Results Overall 373 professionals completed the survey: Physicians (47%), nurses (14%), pharmacists (6%) and others (33%). Physicians rated teamwork poorly both intra and inter professionally. Pharmacists rated inter professional teamwork with nurses particularly poorly. Further data on additional subscales of the instrument and by individual centers will be presented.

Conclusion Cancer care is complex and depends on teamwork amongst health care professionals to achieve optimal outcomes. Our study shows important variations in subgroup analysis which can provide target for further intervention. Efforts to transform cancer care need to focus on building trust among the key stakeholders. This is especially true in the developing world where there is a need to maximize the use of limited resources to improve patient outcomes.

POSTER

WELCOME RECEPTION AND POSTER SESSION ONE

16:30–18:00

Tuesday

7 November

Idowu, Oluwaseyi Kayode

P123 | PROFILE OF SOFT TISSUE SARCOMA IN NIGERIA: A SYSTEMATIC REVIEW

Idowu, Oluwaseyi Kayode¹; Mbah, E.O.¹; Nnodu, Obiogeli E.²; Eyesan, Samuel U.³; Giwa, Suleiman O.⁴

¹National Orthopaedic Hospital; ²University of Abuka; ³Bowen University;

⁴University of Lagos

Correspondence ashikoashiko@yahoo.com

Background Soft tissue sarcomas are a complex heterogeneous group of tumours with wide variations in histologic types and sites of occurrence. Delay in presentation, inappropriate referral and treatment continue to hinder treatment in Nigeria.

Purpose This study is a systematic review of epidemiologic characteristics and treatment outcome of soft tissue sarcomas in Nigeria over a 40-year period. The objectives were to identify the incidence in tertiary hospitals in the different regions of the country and identify factors associated with the outcome of treatment for soft tissue sarcoma.

Methods A computerized literature search of original studies on soft tissue sarcoma conducted in Nigerian centres was performed using the electronic database of Medline and google scholar. The key words were SOFT TISSUE SARCOMA NIGERIA. Criteria for exclusion were; studies restricted to only one histologic type of soft tissue sarcoma or to only one anatomical region. Patients' data were retrieved from nine studies with full datasets.

Results The electronic database searches revealed 236 related articles from 1940 till date. There were 1062 patients from nine studies with complete data. The mean age of patients was 34.4 years with a slight male preponderance. The common histiotypes were; Rhabdomyosarcoma, Liposarcoma, Fibrosarcoma. The commonest anatomical site was the thigh. Many patients presented with advanced diseases for various reasons in the studies. Poor infrastructure and interdisciplinary support were identified as significant challenges from the studies.

Conclusion Soft tissue sarcoma is a challenging problem with poor outcome in various Nigerian centres. There is a need to improve awareness to reverse the problem of late presentation. Many centres require multidisciplinary institutional support in order to improve outcome of the management.

POSTER

WELCOME RECEPTION AND POSTER SESSION ONE

16:30–18:00

Tuesday

7 November

Idowu, Oluwaseyi Kayode

P183 | OUT-OF-POCKET PAYMENT FOR ENDOPROSTHESIS RECONSTRUCTION IN THE MANAGEMENT OF BONE TUMOURS AND TUMOUR LIKE CONDITIONS: CHALLENGES AND OUTCOME

Idowu, Oluwaseyi Kayode¹; Akinmade, Akin²; Eyesan, Samuel U.³;
Giwa, Suleiman O.⁴; Abudu, Adesegun T.⁵

¹National Orthopaedic Hospital; ²Obafemi Awolowo University Teaching
Hospital; ³Bowen University; ⁴University of Lagos; ⁵Royal Orthopaedic Hospital

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Purpose There are numerous challenges in healthcare funding in low to middle income countries. In the absence of adequate health insurance coverage, most of the healthcare cost is borne by patients at the point of care through 'out of pocket payment' at the point of care. Hence, reconstruction for extensive bony and soft tissue defects in a resource poor environment is delayed by the cost of the endoprosthesis and requisite equipment. This case series elucidates the peculiarities and outcome in eleven patients treated with endoprosthetic replacement for limb salvage in a resource constrained environment.

Methods Twelve patients underwent segmental endoprosthetic replacement for bone tumours and defects of various aetiology. Patients demographics, duration of symptoms before surgery, resection length, complications, cost of endoprosthesis and hospital stay were recorded. Functional outcomes were also determined using the MusculoSkeletal Tumour Society (MSTS) score. All the included patients have minimum of 6 months follow up.

Results Seven patients had primary and metastatic bone tumours, diagnoses included plasmacytoma, osteosarcoma, giant cell tumour and metastatic adenocarcinoma. Five patients had bone defects secondary to tumour-like disease conditions. The cost of hospital stay and endoprosthesis was between 2500–9250 US dollars. The cost was significantly higher in patients with private insurance. The average symptoms interval was 20.7 months (3–60 months). Ten patients had proximal and distal femoral replacement, while two patients had proximal tibial replacement. The resection length varied between 12 and 27 cm (average 18 cm). Mechanical complication rate was 10%. Non mechanical complication rate was 40% and this was in form of two surgical site infections, one deep vein thrombosis and one posterior tibial artery thrombosis. The average MSTS score was 81% (24–96%).

Conclusion With the high cost of endoprosthesis, there was significant delay between symptoms interval and definitive surgery. In this case series, ten of the eleven patients had good to excellent functional outcomes by the MSTS scoring system. The poorest outcome was reported in a patient who was managed for recurrent plasmacytoma with prolonged interval before reconstruction. Despite the cost of the endoprosthesis occasioned by out of pocket payment, all the patients were emotionally satisfied with the option of the endoprosthetic reconstruction compared to amputation.

POSTER

POSTER SESSION TWO

16:30–18:00

Thursday

9 November

Igbende, Dorothy Aumbur

P287 | PERCEIVED STRESS, HOPELESSNESS, COPING-STRATEGY AND QUALITY OF LIFE AMONG CANCER PATIENTS IN FEDERAL MEDICAL CENTER MAKURDI

Igbende, Dorothy Aumbur¹; Terwase, Joyce Mcivir¹

¹Benue State University

Correspondence abelladorothy@gmail.com

The study investigated perceived stress, hopelessness, coping strategy and quality of life among cancer patients in Federal Medical Center Makurdi. A total number of 190 participants were sampled using a simple random technique (73 = 38.4% male and 117 = 100.0% female) were randomly selected among opinion group in Federal Medical Center Makurdi. Their age range was 16-60 years with the mean age of 16.53 (SD = 5.551). The reliability coefficient of stress in the study was .67 cronbach's alpha. Hopelessness was .63 cronbach's alpha. The reliability coefficient for coping strategy was .83 cronbach's alpha. The reliability coefficient of quality of life was .604 cronbach's alpha. The statistical analysis involved simple linear and multiple regressions. The findings from the study indicated that perceived stress, hopelessness and coping strategy jointly predict quality of life of cancer patients. $R = .528$, $R^2 = .279$, $F(3,186) = 24.003$; $P < .001$ stress independently predicted quality of life of cancer patients $R^2 = .118$; $F(1,118) = 25.187$; $P < .001$. Findings also indicated that hopelessness significantly predicted quality of life among cancer patients in Federal Medical Center, Makurdi, $R = .465$, $R^2 = .217$ $F(1,188) = 51.969$; $P < .001$. coping strategy also independently predicted quality of life $R = .326$, $R^2 = .106$; $F(1,188) = 22.382$; $P < .001$. The results were discussed and implications highlighted. Therefore, the study recommends that medical personnel, clinical psychologists, psychiatrists and other mental health professionals should help manage/reduce stress, hopelessness and to develop coping strategies to improve quality of life of cancer patients.

POSTER

POSTER SESSION

TWO

16:30–18:00

Thursday

9 November

Iiyambo, Laina

**P384 | T3 LARYNGEAL CANCER: SURGERY VS CRT. OUTCOMES
REPORT FOR TBH FOR A PERIOD OF 5 YEARS**

Iiyambo, Laina¹

¹Stellenbosch University

Correspondence tangi2003@yahoo.co.uk

Objectives

- Compare DFS between the surgery and CRT groups at 2 and 5 years time from treatment completion to first recurrence or last follow up.
- Assess functional outcomes in terms of ability to vocalize, swallowing and breathing
- Assess overall survival at 2 and 5 years – time from completion of treatment to date of death or last follow up.

Designs and Methods A retrospective, analytical-observational study evaluating and comparing outcomes in all patients, 18 years and older with histologically proven SCC, and treated for T3 locally advanced laryngeal cancer with either total laryngectomy or chemo-radiotherapy between 01/01/2010 and 31/12/2011 over the period of 5 years.

Results Data collection in progress. Analysis will be done soon and results will be presented.

Conclusion Evidence in published literature has shown that T3 laryngeal cancer can be treated with either surgery or CRT with similar outcomes in terms of DFS and OS rates however functional outcome differs

POSTER

POSTER SESSION TWO

16:30–18:00
Thursday
9 November

Ilesanmi, Rose

P277 | KNOWLEDGE AND SELF-REPORT OF SCREENING BEHAVIOUR FOR PROSTATE CANCER AMONG FEDERAL CIVIL SERVANTS IN IBADAN, OYO STATE, NIGERIA

Ilesanmi, Rose¹; Akinsipe, Arinola¹; Oluwatosin, Abimbola¹
¹University of Ibadan

Correspondence ekamailesanmi@yahoo.com

Objective Higher incidence of Prostate cancer (PC) are documented among men in developing countries such as Nigeria with high mortality rates, due partly to inadequate knowledge, poor uptake of screening services and late stage diagnosis. Studies confirm that knowledge, health beliefs, and socio-demographics significantly influence men's participation in prostate cancer screening (PCS). The aim of this study was to examine the knowledge and self-report behaviours for PCS among Federal civil servants in Ibadan municipality.

Methods This descriptive study was conducted among randomly selected 145 out of 197 men in eight ministries in the Federal Secretariat, Ibadan. A validated questionnaire was used to collect data on knowledge of PC and PCS, preventive measures, perceived susceptibility and screening behaviours. Factors which influence screening behaviour were also elicited. Maximum obtainable knowledge score was 25.0. With the aid of SPSS version 20.0, frequency and percentages were calculated. Chi-square test for association between variables at $\alpha=0.05$ level of significance was done.

Results A total of 135 out of 145 questionnaires were retrieved. Mean age (42.9 ± 9.5), and 121 (83%) were married. Thirty percent (30%) were graduates of various disciplines. Common source of information about PC was the mass media (81.5%) and 51.1% from family and friends. Only 9.7% were from physicians and nurses.

On knowledge of PC (maximum 25.0), the mean score was 14.6 ± 2.1 . Only 6 (4.4%) scored above the average (12.5). Majority 129(95.5%) scored below 12.5 suggesting poor knowledge of PC. About PCS, 69 (51.1%) have never heard about it. Most men (90%) did not perceive they were susceptible to PC and 133 (98.5%) have never had a PCS, suggesting poor PCS behaviour. Only 2 (1.5%) have had PCS.

The most common self-report factors which influence PCS behaviour among the study cohort included lack of awareness (32.5%), non-availability of services (44%), fear of positive result (10.3%) and cost (5.9%). The chi-square showed no statistical association between knowledge and screening behaviour.

Conclusion Knowledge of Prostate Cancer and Prostate cancer screening behaviour was poor. Health workers who are knowledgeable are in the best position to promote knowledge and screening behaviour. Use of health literature may be an additional benefit among literate groups like the study population. Interventional study using literature is also recommended. Every hospital visit by men should be utilized to provide in-depth information on PC.

PRESENTATION

Iliyasu, Yawale

CHALLENGES OF PATHOLOGY IN AFRICA – WHAT CAN BE DONE AS AT NOW

**STATE OF
PATHOLOGY
IN AFRICA**

Iliyasu, Yawale¹

¹Ahmadu Bello University

08:25–09:25

Friday

10 November

Correspondence yawaleiliyasu@yahoo.com

The challenges of pathology in Africa are enormous. They include challenges of manpower / human resources, infrastructure, training, service and research.

The challenges occurred over the years as a result of poor funding and poor planning and have led to the deterioration of pathology services throughout sub-Saharan Africa.

The provision of new laboratory infrastructure and the upgrading of existing ones, the establishment of more pathology / histo-technology training centers and the introduction of more ancillary investigative techniques and quality control / quality assurance programs can go a long way to ameliorate the situation

PRESENTATION

Incrocci, Luca

IS SEXUAL HEALTH AFTER CANCER TREATMENT RELEVANT ALSO IN AFRICAN COUNTRIES?

SEXUAL HEALTH AFTER CANCER TREATMENT IN AFRICAN COUNTRIES?

Incrocci, Luca¹

¹Erasmus MC Cancer Institute

07:15–08:20

Wednesday

8 November

Correspondence l.incrocci@erasmusmc.nl

The WHO projects that the number of cancer patients will double by 2030 in Africa, causing more deaths than HIV/AIDS, tuberculosis, and malaria combined. Sexual well-being may be altered by both the diagnosis and treatment of cancer. Sexual dysfunction is often unrecognized, underestimated and untreated. Sexual dysfunction in cancer patients may result from biological, psychological and social factors. Biological factors such as anatomic alterations (rectum amputation, penile amputation), physiological changes (hormonal status) and secondary effect of medical intervention may preclude normal sexual functioning even when sex desire is intact. Side effects of the treatment such as nausea, vomiting, fatigue, hair loss can result in adverse effects on sexuality together with disfiguring surgery. Negative emotional states such as anxiety, depression, anger may disrupt sexual activity.

Erectile dysfunction (ED) is reported in about 50% of the patients undergoing radiotherapy for prostate cancer, and 40–100% after surgery. ED, loss of libido, decreased orgasm have been reported in about 20% of the patients treated for testicular cancer. Surgery and radiation therapy for gynaecological cancer can alter vaginal sensation and may cause stenosis leading to painful penetration. In women cytotoxic and hormonal therapy lead to ovarian suppression, with vaginal discharge, dryness, dyspareunia and a loss of sexual interest.

There are several publications from African countries reporting on ED after treatment of prostate cancer, and its treatment options. Also sexual functioning as a consequence of gynecological cancer treatment has received attention in several African centers.

Patients and their partners need to be adequately counselled on the effect of cancer treatment on their sexual life and relationship, and about the different treatment possibilities. This needs to be done taking into account culture, religion and customs of the patient and the partner. Physicians should always be respectful of their patients and take the time to discuss this subject. Sexual counselling has not become yet routine in oncology care in most hospitals, but this should be provided, also in African countries.

POSTER

POSTER SESSION TWO

16:30–18:00
Thursday
9 November

Incrocci, Luca

P385 | HYPO-FRACTIONATED VERSUS CONVENTIONALLY FRACTIONATED RADIOTHERAPY FOR PROSTATE CANCER: 5-YEAR ONCOLOGIC OUTCOMES OF THE DUTCH HYPRO TRIAL

Incrocci, Luca¹

¹Erasmus MC Cancer Institute

Correspondence l.incrocci@erasmusmc.nl

Purpose Hypofractionated radiotherapy might increase the radiobiological tumor dose without increasing toxicity due to the reported high radiation-fraction sensitivity of prostate cancer. We present the results on the oncologic outcome from the Dutch randomized hypofractionation trial (HYPRO).

Methods Between March 2007–December 2010, we conducted a multicenter, randomized phase 3 superiority trial, including intermediate-to high risk patients with localized T1b-4NX-0MX-0 prostate cancer. Inclusion criteria were a PSA concentration ≤ 60 ng/ml, and a WHO performance status < 3 . Patients were randomly assigned (1:1) to receive conventional treatment with 39 fractions of 2 Gy in 8 weeks (5 fractions per week), or hypofractionated treatment with 19 fractions of 3.4 Gy in 6.5 weeks (3 fractions per week). The primary endpoint is relapse-free survival (RFS) after treatment. Relapse is defined as biochemical relapse (Phoenix definition), clinical relapse, loco-regional or distant relapse, or start of hormonal therapy, whichever occurs first. The aim of this trial was to detect an absolute reduction of 10% of the relapse rate at 5 years in the hypofractionation arm. Analyses were based on intention-to-treat. An α of 0.05 was considered the level of statistical significance.

Results Of the enrolled 820 patients, 804 men could be included in this analysis. Median follow-up was 60 months. Androgen deprivation therapy (ADT) was prescribed to 534 patients (66%). The 5-year RFS rates were 77% for conventional treatment and 80% for hypofractionated treatment ($p=0.36$). Factors associated with RFS in multivariate analysis were Gleason score ≤ 7 (HR=0.46, 95% CI 0.32–0.66, $p<0.001$), long-term ADT (≥ 12 months) versus none (HR=0.50, 95% CI 0.31–0.80, $p=0.004$), and high risk ($>25\%$) of seminal vesicle involvement according to the updated Partin tables (HR=2.59, 95% CI 1.36–4.93, $p=0.004$).

Conclusions Hypofractionated radiotherapy (19 fractions of 3.4 Gy) resulted in higher RFS rates, but the difference was not statistically significant. These results show no evidence of superiority of hypofractionation over conventional treatment. The hypofractionation schedule is patient-friendly and gives the opportunity to treat higher numbers of patients especially when the availability of linear accelerators is limited, such as in most developing countries.

POSTER

WELCOME RECEPTION AND POSTER SESSION ONE

16:30–18:00

Tuesday
7 November

Isanga, Anthony

P049 | THE DILEMMA OF CANCER PATIENTS AND TRADITIONAL HEALERS: AN APPROACH TO WOMEN'S KNOWLEDGE AND ATTITUDES TOWARDS CERVICAL CANCER PREVENTION IN LUWEERO, UGANDA

Isanga, Anthony¹

¹Uganda Cancer Research Foundation

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Background Uganda, like the majority of countries in Africa, has a great burden of cancer, with less than 35% of persons diagnosed with this disease surviving more than five years. For many of these patients particularly rural women, their first line of treatment is provided by traditional or other alternative healers than our scientific medical services, which often delays access to evidence-based medical treatments.

Objectives Our objective is to assess the, knowledge, attitudes, practices, use and impact of traditional and alternative medical treatment by cancer patients in the Luweero district in Uganda, East Africa, its implications and to explore possibilities for greater and better understanding and cooperation between these practitioners and their health systems with scientific medicine.

Method This is a descriptive cross-sectional study of referred averse cervical cancer patients who presented themselves to the sampled nearby health facilities in Luweero where we conducted this study, as well as the traditional and alternative health care providers that they may have patronized before coming to the health facilities for health support, including focus group discussions with the latter. Data collection was planned from a sample of 200 newly diagnosed cervical cancer patients sampled in three nearby health centres to include Bishop Ceaser Asili Hospital, St. Mary's Kasaala Reach out Health Centre III, and Bamunanika Health Centre IV, Luweero District who presented themselves for screening against cervical cancer within a 1 year period; 109 patients have been interviewed to date towards the end of the first 6 months of the study.

Result Fifty (50 or 24%) of the 109 participants have visited traditional or alternative healers before coming to the health facilities. Twelve (15 or 30.0%) of the 50 would be willing to take the researchers to traditional healers, 14 (28.0%) are unsure while 21 (42.0%) said that they will not assist or take the researchers to their traditional healers. Other details will be provided.

Conclusion This study is on course and promises to open up some avenues for the improvement of our understanding and better cooperation with alternative healers and our patients for earlier presentation and management outcomes of these clients. The results of this study will also guide the design of future screening programs for cervical cancer among rural women in Uganda.

POSTER

WELCOME RECEPTION AND POSTER SESSION ONE

16:30–18:00

Tuesday

7 November

Isanga, Anthony

P050 | CANCER PATIENTS AND TRADITIONAL HEALERS: AN APPROACH TO WOMEN'S KNOWLEDGE AND ATTITUDES TOWARDS CERVICAL CANCER PREVENTION IN LUWEERO, UGANDA

Isanga, Anthony¹

¹Uganda Cancer Research Foundation

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Background Uganda, like the majority of countries in Africa, has a great burden of cancer, with less than 35% of persons diagnosed with this disease surviving more than five years. For many of these patients particularly rural women, their first line of treatment is provided by traditional or other alternative healers than our scientific medical services, which often delays access to evidence-based medical treatments.

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POSTER

WELCOME RECEPTION AND POSTER SESSION ONE

16:30–18:00

Tuesday

7 November

Izuegbuna, Ogochukwu

P051 | NOLLYWOOD AND CANCER: A WORKABLE PARTNERSHIP

Izuegbuna, Ogochukwu¹

¹Federal Medical Centre

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Background The Nigerian film industry also known as Nollywood is the biggest in Africa and the second largest in the world in terms of annual production. Nollywood produces hundreds of films every year, most of them low budget straight to DVD tapes. As at 2014 Nollywood had an estimated gross worth of about 5 billion US dollars. It also employs about a million people in the country. Nollywood has since inception been able to blend historical facts with good imagination to create and sustain our society. It has done this across most genres, but a few. Health issues such as cancer is not well represented in Nollywood and about 80,000 Nigerians die from cancer annually.

Objectives

- To encourage cancer themes in Nollywood movies.
- To help form an alliance between Health professionals and Nollywood

MethodsA formal workshop with Nollywood stakeholders.

Conclusion Though Nollywood lags behind in putting health themes in her movies, it is not too late to start off. The journey of a thousand miles starts with a step. Changing people's perspective can be daunting, but impossible is nothing. Nollywood has to its advantage millions of followers and an established industry. Nollywood is an established industry. What it requires is a collaboration with health professionals to make movies with cancer themes and highly factual in the science.

POSTER

**WELCOME
RECEPTION
AND POSTER
SESSION ONE**
16:30–18:00
Tuesday
7 November

Jacobson, Mark

**P404 | CREATING A ZONAL CANCER CARE CENTER IN NORTHERN
TANZANIA**

Jacobson, Mark¹; Masenga, Gileard²

¹Foundation for Cancer Care in Tanzania; Kilimanjaro Christian Medical Centre

Correspondence [mjacobson@gmail.com](mailto:mjacobsontz@gmail.com)

The Kilimanjaro Christian Medical Center (KCMC) is the zonal referral hospital for the northern zone of Tanzania with a catchment population of 15 million. In 2014, the hospital was designated to become a center for cancer care for the northern zone. This effort was undertaken in partnership with the Foundation for Cancer Care in Tanzania.

The components required to start cancer care in a new site were identified and a strategy to fulfill this new role adopted.

This presentation shares the process of developing such a program, the challenges, and the successes of establishing from scratch, a new cancer care service.

Special emphasis is placed on personnel, physical infrastructure, procurement, and developing a comprehensive program of prevention, care, and palliation. Strategies used for financing this effort are shared.

POSTER

Jansen van Rensburg, Kotie

P278 | DEVELOPMENT AND VALIDATION OF A QUALITY OF LIFE ASSESSMENT INSTRUMENT FOR CANCER PATIENTS IN SOUTH AFRICA

Jansen van Rensburg, Kotie¹; Maree, Lize¹; Casteleijn, Daleen¹
¹University of the Witwatersrand

**POSTER
SESSION
TWO**

16:30–18:00

Thursday

9 November

Correspondence kotievr@vodamail.co.za

Objectives The objectives of the study were to explore quality of life from the perspective of the cancer patient who accesses public health services in South Africa for treatment and to develop and validate a patient-directed quality of life assessment instrument.

Methods The study was conducted in two phases. In Phase 1 quality of life was explored from the perspective of the cancer patient in South Africa. A qualitative exploratory design was used and 22 (n=22) in-depth interviews were conducted to gather the data. Purposive sampling was used to select the participants and open coding and template analysis grouped the data into categories and themes. The themes which emerged identified applicable quality of life domains. In Phase 2 a new appropriate quality of life assessment instrument for cancer patients in South Africa was developed, validated and pilot tested. The Rasch measurement model was used for validation of the instrument.

Results The domains of quality of life identified by cancer patients in South Africa who accessed public health care for treatment were: physical, psychosocial, financial, spiritual, existential and emotional. These domains are not fully addressed by the most commonly used quality of life assessment instruments such as the EORTC QLQ-C30, the FACT-G and the WHOQOL-BREF, especially the spiritual-, financial- and existential domains. The importance of the development of an instrument which addresses all the appropriate domains of quality of life was highlighted by the study. Three questionnaires were developed and validated and the questionnaire which fit the Rasch model, the South African Quality of Life Instrument for Cancer Patients, the SAQOLI-Ca was accepted for use in the clinical field.

Conclusion The need for a new patient-directed quality of life assessment instrument for cancer patients in South Africa was highlighted by the study and a new instrument was developed to address all the applicable domains of quality of life.

POSTER

POSTER SESSION TWO

16:30–18:00
Thursday
9 November

Jhingran, Anuja

**P386 | FULLY-AUTOMATED TREATMENT PLANNING FOR CERVICAL
CANCER RADIOTHERAPY**

Jhingran, Anuja¹; Kisling, Kelly¹; Court, Laurence¹; Schmeler, Kathleen¹;
Balter, Peter¹; Bogler, Oliver¹
¹MD Anderson Cancer Center

Correspondence ajhingra@mdanderson.org

Purpose To develop and clinically deploy automated planning for four-field box cervical cancer treatments.

Methods We developed fully-automated planning for cervical cancer treatment in low-resource settings. This system creates a patient-specific treatment plan ready for physician review with only a CT and no human input. In-house algorithms were developed that automate every step, including isocenter localization, treatment field creation and beam weight optimization, and were integrated into Eclipse using the Application Programming Interface. The algorithms that create treatment fields use multi-atlas auto-segmentation of bony anatomy and then set the beam apertures based on landmarks identified on the structure projections in each beam's-eye-view. Automatic beam weight optimization uses least-square fitting to minimize dose heterogeneity. All algorithms were developed with input from radiation oncologist from the US and South Africa.

We tested the fully-automated planner retrospectively on 228 patients. A radiation oncologist evaluated the fields for clinical acceptability, and the dose distribution was compared for optimized and equal beam weights.

Additionally, we deployed automated four-field box treatment planning into our clinic. To adhere to our normal workflow, physicians review and edit the automatically-generated fields prior to treatment. The extent of these edits was qualified.

Results Fully-automated planning took 10.2 minutes (range=7.9–14.2 minutes). Of the 228 auto-plans, 89.7% of the resulting fields were rated acceptable for treatment without edits. Beam-weight optimization decreased the frequency of high maximum doses (>107%) from 28% to 4% of auto plans. To date, the automated planning tool has been used prospectively for 14 patients in our clinic. Compared to automatically-generated fields, the edited fields had a mean-distance-of-agreement of 3.7 mm and 95%-Hausdorff-distance of 14.0 mm.

Conclusion Our findings suggest that automated treatment planning for cervical cancer radiotherapy is effective and may provide a reliable alternative for low and high resource setting. Prospective studies are ongoing in the US and planned with partner clinics in South Africa.

PRESENTATION

BASIC SCIENCES AND CHEMOTHERAPY ABSTRACTS

13:30–14:30

Friday

10 November

Joffe, Maureen

NEOADJUVANT CHEMOTHERAPY IN HIV POSITIVE AND HIV NEGATIVE PATIENTS TREATED FOR NON-METASTATIC BREAST CANCER IN JOHANNESBURG, SOUTH AFRICA

Joffe, Maureen^{1,2}; Cubasch, Herbert^{1,2}; Murugan, Nivashni¹; Tsai, Ming¹; Ayeni, Oluwatosin^{1,2}; Jacobson, Judith³; Neugut, Alfred I.³

¹University of the Witwatersrand; ²Wits Health Consortium;

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Background Neoadjuvant chemotherapy (NACT) has become the standard of care for locally advanced breast cancer to attempt to shrink tumors, make surgery easier and facilitate breast conservation. NACT allows for short-term assessment of chemotherapy response, since a pathologic complete response corresponds with improved long-term breast cancer outcomes. In sub-Saharan Africa many patients are diagnosed with large irresectable tumors. We examined the use of NACT in breast cancer patients seen at public hospitals in Johannesburg, South Africa.

Methods We assessed demographic characteristics, tumor stage and grade, ER, PR and HER2 receptor status, and HIV status of female patients diagnosed with non-metastatic invasive carcinoma of the breast at Chris Hani Baragwanath Academic Hospital and treated at the Charlotte Maxeke Johannesburg Academic Hospital between January 1, 2009, and December 31, 2011, who received either neoadjuvant, adjuvant or no chemotherapy. Trastuzumab was not available to any patients. We developed logistic regression models to analyze factors associated with NACT receipt in these patients.

Results Of 554 women with non-metastatic breast cancer, the median age at diagnosis was 52 years (range: 28–88 years). Six percent were diagnosed with stage I disease while 49.3% and 44.9% were diagnosed with stages II and III, respectively. A further 47 patients presenting with metastatic breast cancer were excluded from this analysis. Among the breast cancer subtypes, 211 (38.1%) had luminal A, 133 (24.0%) luminal B of which 71 (12.8%) were HER2+, 64 (11.6%), HER2-enriched and 114 (20.6%) triple negative (TNBC). Thirty two (5.8%) had missing subtype information. Eighty (14.4%) patients tested positive for HIV. In all, 195 patients (35.2%) received NACT, 264 (47.7%) received adjuvant chemotherapy and 95 (17.1%) received no chemotherapy including 62 (11.2%) who received only hormonal therapy. None of the stage I patients received NACT, whereas 17 of stage II and 178 of stage III patients received NACT. Of the 195 patients who received NACT, 125 (64.1%) were evaluable for clinical response. Of these 80 (64.0%) had a clinically significant response, with 19 (15.2%) having stable disease and 26 (20.8%) progressive disease. Multivariate analysis showed only age younger than 40 years and disease stage to be independently associated with receipt of NACT.

Conclusions Most women who received NACT and were assessed for response showed a significant clinical benefit, although they did not receive trastuzumab with their chemotherapy treatment. Stage at diagnosis and age younger than 40 years were the only significant determinants of neoadjuvant vs adjuvant chemotherapy treatment.

POSTER

Joffe, Maureen

P222 | BREAST CANCER OUTCOMES IN SOWETO, JOHANNESBURG, SOUTH AFRICA: A COHORT OF WOMEN DIAGNOSED FROM 2009-11

**POSTER
SESSION
TWO**

**16:30–18:00
Thursday
9 November**

Joffe, Maureen^{1,2,3}; Dickens, Caroline¹; Murugan, Nivashni^{1,2}; Tsai, Ming^{1,2}; Ruff, Paul^{1,3}; Jacobson, Judith^{4,5}; McCormack, Valerie⁶

¹University of the Witwatersrand; ²Chris Hani Baragwanath Academic Hospital; ³Wits Health Consortium; ⁴Herbert Irving Comprehensive Cancer Center, College of Physicians and Surgeons, Columbia University; ⁵Columbia University; International Agency for Research on Cancer⁶

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Background In sub-Saharan Africa (SSA), breast cancer incidence rates are lower than in High Income Countries (HICs) but mortality rates are as high. In South Africa, a low-middle income country (LMIC) however, the public healthcare system is better equipped to manage breast cancer than most other SSA countries, which should lead to improved outcomes. This study estimated breast cancer survival in a breast cancer cohort in Soweto.

Method A historical cohort of 602 women, diagnosed with invasive breast carcinoma from 2009–2011 at Chris Hani Baragwanath Academic Hospital (CHBAH), was studied. Overall Survival (OS) from time of diagnosis to time of death ('ideal' outcome) or terminal disease up to the end of 2014 was performed and Cox models were used to estimate hazard ratios (HR) by risk factors. Losses to follow-up were also examined.

Results 3-year survival was higher for women with stage I/II (84%) tumors than those with stage III/IV (56%) tumors. Losses to follow-up over the same period were 34% in early stage and 51% in late stage patients. Women remaining in contact with the healthcare system for at least 6 months after diagnosis showed better survival (84% early stage and 62% late stage) and had fewer losses to follow-up (21% early stage and 34% late stage). Late stage at diagnosis, tumor grade and triple negative (estrogen, progesterone and HER2 receptor negative) tumours were all significant risk factors for poor survival. HIV-positive women did not appear to have a significantly different risk for overall survival.

Conclusion Survival from breast cancer in our retrospective cohort of patients was dependent on stage at diagnosis with losses to follow-up being extensive. Breast cancer awareness and facilitated treatment access could improve tumor stage at diagnosis and thus overall survival from breast cancer in our patients.

POSTER

Joffe, Maureen

P223 | BARRIERS TO EARLY PRESENTATION OF BREAST CANCER AMONG WOMEN IN SOUTH AFRICA

**POSTER
SESSION
TWO**

**16:30–18:00
Thursday
9 November**

Joffe, Maureen^{1,3}; Ayeni, Oluwatosin¹; Norris, Shane A^{2,3}; Ruff, Paul^{1,3}; Jacobson, Judith⁴; Cubasch, Herbert^{1,3}

¹Wits Health Consortium; ²Wits/MRC Developmental Pathways to Health Research Unit; ³University of Witwatersrand; ⁴Columbia University

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Background Breast cancer is the most common female cancer in South Africa(SA). Factors associated with late stage presentation were studied in women with newly diagnosed breast cancer at Chris Hani Baragwanath Academic Hospital (CHBAH) in Soweto, Johannesburg.

Methods 491 women, 235 with early stage and 256 with late stage breast cancer, completed a face-to-face quantitative questionnaire to assess knowledge of breast cancer, health seeking behavior and personal and health system barriers to accessing care. Clinical information and socio-demographic, risk factor and comorbidity data were collected. Self-reported time and reasons for delay from first awareness of breast symptom to presentation at CHBAH and health system (HS) journeys were assessed. Residential straight-line distance from CHBAH was measured using GIS and the Haversine formula. We analyzed early and late breast cancer presentation associated with the above variables with descriptive, univariate and multivariate analysis using binary logistic regression. Pearson Chi square test and Fisher exact test were used for categorical variables. Student's T-test and Wilcoxon rank-sum test were applied to differences in means and medians respectively. Following univariate analyses, variables with $P < 0.1$ were evaluated in a multivariate analysis for which a $P < 0.05$ was considered significant. Analysis was performed using Stata version 14 (StataCorp Ltd, Texas, USA).

Results On univariate analysis, factors associated with late stage were:- patient age < 40 ($P=0.018$); lack of high school education ($P=0.0019$); low socioeconomic status ($P=0.0514$); higher parity ($P=0.083$); normal/underweight BMI ($P=0.048$); positive HIV status ($P=0.022$); 'no' hypertension ($P=0.006$); less self-reported knowledge of breast cancer ($P=0.0001$); greater self-reported time to presentation to the health system ($P < 0.001$) and > 2 health system visits prior to presentation to CHBAH ($P= 0.003$).

On multivariate analysis, knowledge of breast cancer increased odds of presenting early (OR=0.86, 95% CI 0.76 - 0.97). Patients with > 2 primary Health system visits pre- CHBAH (OR=2.46, 95%CI 1.33-4.55) and ≥ 3 via primary/secondary system, OR 1.68, 95% CI 1.04-2.70) had significantly increased odds of late diagnosis. As expected, patients who delayed > 3 months following symptom awareness were at significantly increased odds for late presentation (OR=2.57, 95% 1.52-4.32). Patient reported reasons for delay were lack of symptom awareness and fear of diagnosis. Health system delays were attributed to misdiagnosis and delays for appointments and test results.

Conclusions Our results confirm a mixed association of late breast cancer presentation with lack of patient symptom awareness and delays within the health system.

PRESENTATION

Joko W. Fru, Yvonne A

TRENDS OF BREAST CANCER IN EAST AFRICA: A FOCUS ON KAMPALA AND HARARE

**CANCER
REGISTRIES
(continued)**

14:40–16:30

Tuesday

7 November

Joko W. Fru, Yvonne A¹; Laversanne, Mathieu²; Wabinga, Henry³; Chokunonga, Eric⁴; Bray, Freddie²; Parkin, Donald Maxwell¹

¹African Cancer Registry Network / University of Oxford; ²International Agency for Research on Cancer; ³Kampala Cancer Registry; ⁴Zimbabwe National Cancer Registry

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Background Breast Cancer incidence rates are rising rapidly in Africa. Unfortunately, there are few population-based cancer registries (PBCR) with long-term data and thus, reporting on cancer trends in Africa is difficult. The cancer registries of Kampala, Uganda and Harare, Zimbabwe are one of the few sub-Saharan African registries, with more than 20 years of consecutive cancer incidence data. These registries provide a unique opportunity to study the trends in breast cancer incidence by period and cohort, and thus provide a unique insight into the role of changing risk factors.

Aim To describe the effects of the birth cohort and of the period of diagnosis on breast cancer incidence trends from 1990–2014 in Kampala and Harare.

Methods We included all the available data on breast cancer incidence spanning 25 years of cancer registration. We examined and compared the Age-Standardized incidence rates (ASIR) and the Estimated Annual Percentage Change (EAPC) by 5-year age-groups and in relation to age at menopause (age 50 as cut-off). We then examined the effects of period of diagnosis and birth cohort and fitted age-period-cohort models.

Results There were 2109 cases diagnosed in Harare, with a mean age at diagnosis of 50.2 years (SD 13.8 years), median of 49 years. In Kampala, there were 2032 cases, with a mean age at diagnosis of 46.6 years (SD 14.1 years) and a median of 45 years. The ASIR doubled over these 25 years in Harare, with an EAPC of 3.8% (95% CI 3.2–4.5). However, in Kampala, although there was an overall increase in rates, with an EAPC of 1.9% (95% CI 1.2–2.6), the ASIR decreased in the last period. Among pre-menopausal women, the EAPC was 2.7% (95% CI 1.8–3.6) in Harare and 0.9% (95% CI 0.03–1.8) in Kampala. While for post-menopausal women the EAPC was 4.4% (95%CI 3.9–4.9) in Harare and 2.6% (95% CI 2.1–3.1) in Kampala. The greatest EAPC was seen in the 65–74 years age-group, 5.4% (95% CI 4.9–5.4) in Harare and 2.8% (95% CI 2.2–3.3) in Kampala. The age-period-cohort modelling indicated that the rising incidence rates were predominantly driven by cohort effects among successive generations, although some of the observed period effects may have been influenced by the completeness of case ascertainment.

Conclusion The rising incidence rates, particularly in post-menopausal women may point to the effect of changing lifestyles across successive generations of East-African women. However, sustaining the activities of PBCR in Africa will be vital to help understand and control this rising epidemic.

POSTER

POSTER SESSION TWO

16:30–18:00

Thursday

9 November

Joy, Kusiima

P454 | UTILIZATION OF EARLY CANCER DETECTION SERVICES AT THE UGANDA CANCER INSTITUTE, 2017

Joy, Kusiima^{1,2}; Leocardia, Kwagonza^{1,2}; Annet, Nakaganda¹; Daniel, Kadobera²; Ario Riolexus, Alex²; James, Kafero¹; Noleb, Mugisha¹

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Background The Comprehensive Community Cancer Programme (CCCP) of Uganda Cancer Institute (UCI) offers both cancer screening and early detection services in the country. However, coverage of these services is not well documented.

Objectives We described characteristics of people who attended the CCCP to access services to facilitate early detection of cancer of the prostate, cervix and breast in order to inform cancer control activities.

Methods We reviewed electronic medical records from the CCCP data base from 2010–2016 and compared these with the population at risk using 2014 national census data. We computed CCCP utilization rates across age and region. We included males aged ≥ 40 yrs for prostate cancer and females aged ≥ 20 yrs for breast and cervical cancer because these are the age groups at risk.

Results Of the 4350 records, 96% (3942/4350) were women. 91% (3562/3942) of the women and 83% (337/408) of the men came from the central region. 64% (2663/3942) of the women compared to 57% (225/408) of the men presented with cancer related symptoms. At the facility, more women accessed screening services for breast cancer (72%, 2825/3942) compared to those who accessed screening services for cervical cancer, (44%, 1739/3942). Compared to the eligible population, breast cancer screening services were more utilized (128 /100000 populations) compared to cervical cancer screening services (77/100,000 population). 66% (268/408) of the men were screened for prostate cancer. Overall, CCCP utilization rate for prostate cancer was 12/100,000, with marked regional differences; 35/100,000 in Central, 4.8/100,000 in Western, 1.7/100,000 in Eastern and 1.5/100,000 in Northern region.

Conclusions CCCP services for breast, cervical and prostate cancers were underutilized. Utilization of CCCP services differed markedly by geographical location and age.

Recommendations We recommend measures of improving geographical coverage of CCCP services to increase service uptake.

POSTER

POSTER SESSION TWO

16:30–18:00
Thursday
9 November

Ka, Sidy

P447 | IMPLICATION DES MUTATIONS GENETIQUES DANS LA DIVERSITE ET L'EVOLUTION GENETIQUE DES TUMEURS BENIGNES DU SEIN CHEZ LA FEMME SENEGALAISE

Ka, Sidy¹

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Introduction L'un des facteurs des risques soupçonnés dans les pathologies mammaires bénignes est une prédisposition génétique.

Objectifs Mieux cerner et évaluer l'implication des mutations somatiques et l'expression génique des différentes protéines présentes dans un tissu sain et/ou pathologique dans les tumeurs bénignes du sein chez la femme Sénégalaise.

Methodes Caractérisation des mutations génétiques dans la diversité et l'évolution des tumeurs bénignes du sein au Sénégal. Evaluation d'une part l'implication des altérations génétiques du Cyt b dans l'évolution des tumeurs bénignes du sein et d'autre part comprendre l'impact de la diversité et l'évolution génétique de la D-Loop dans les lésions bénignes du sein chez les femmes sénégalaises.

Résultats Avec le Cyt b, l'analyse des profils de mutations des tissus bénins a permis de voir que 50% de celles-ci ont conduit à un changement d'acides aminés et 12,5% à un décalage dans le cadre de lecture. Par ailleurs, l'analyse de signature de sélection indique que ces mutations étaient soumises à une sélection positive. Les résultats ont également révélé que la population de cellules bénignes était en croissance rapide à partir d'une population ancestrale à faible effectif. Donc on conclue que les mutations du Cyt b seraient impliquées dans l'évolution des tumeurs bénignes du sein chez les femmes sénégalaises. Pour la D-Loop, les résultats ont révélé une présence significative de variants spécifiques aux tissus bénins du sein et tissus témoins. La mutation C150T a été associée à une protection à la présence de tumeurs bénignes du sein et la mutation G247A impliquée à une augmentation du risque. Les patientes d'haplogroupe mitochondrial L seraient significativement les plus susceptibles de contracter ces lésions bénignes du sein. Malgré la grande diversité haplotypique notée pour l'ensemble des individus étudiés, un rapprochement génétique des tumeurs bénignes du sein a été observé. L'étude de l'évolution génétique des tumeurs bénignes mammaires a révélé que la D-Loop n'est pas sous sélection. En outre, une multiplication des cellules tumorales bénignes plus rapide par rapport au témoin a été remarquée. Enfin, une corrélation significative est associée aux haplotypes C309CC et témoin de la D310, constituant respectivement des facteurs à risque accru et susceptible à la contraction de lésions bénignes du sein.

POSTER

WELCOME
RECEPTION
AND POSTER
SESSION ONE

16:30–18:00

Tuesday

7 November

Kabagwira, Janvire

**P408 | DIFFERENTIAL EXPRESSION OF SURVIVING SPLICE VARIANTS
IN GEMCITABINE RESISTANT AND SENSITIVE PANCREATIC
ADENOCARCINOMA CANCER CELL LINES**

Kabagwira, Janvire^{1,2,3}; Gonda, Amber^{1,2}; Wall, Nathan R.^{1,2,3}

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Medicine; ³Division of Biochemistry

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Globally, about 338,000 people had pancreatic cancer in 2012, making it the 11th most common cancer. More than 90% of all pancreatic cancer cases are Pancreatic Ductal Adenocarcinoma (PDAC). Despite significant progress in the treatment of PDAC, chemo-resistance (CR) remains a challenge. PDAC develops resistance against many currently used chemotherapies including Gemcitabine (Gem), the first line FDA approved chemotherapy agent and this resistance is difficult to predict. Survivin, a member of inhibitors of apoptosis (IAP) family and a cell cycle-associated oncoprotein has been associated with CR in many cancers. Additionally, dysfunction in alternative splicing – a process through which nascent mRNA is spliced into different isoforms has been associated with cancers and recently CR. We hypothesize that differential expression of survivin splice variants is associated with resistance to Gem in PDAC cell lines. RT-PCR evaluating the expression patterns of these splice variants revealed over expression of survivin splice variants in Panc-1, a Gem resistant cell line comparing to MiaPaca2 a relatively Gem sensitive cell line. To further test our hypothesis, we will build siRNAs specific to the splice variants that are significantly expressed in the resistant cell line and test cell viability using MTT assay with Gem treatment. We will also overexpress the splice variants associated with CR in MiaPaca2 cells using a pcDNA3 expression vector and assess the effect of Gem sensitivity. Identifying alternative splice variants of survivin splice isoforms in resistant and sensitive pancreatic cancer patients may serve as a prognostic tool for pancreatic cancer and help to define an appropriate therapy, matching therapeutics with appropriate individual oncotargets.

POSTER

WELCOME RECEPTION AND POSTER SESSION ONE

16:30–18:00

Tuesday

7 November

Kahesa, Crispin

P419 | HPV INFECTION AND CERVICAL INTRAEPITHELIAL NEOPLASMS AMONG HIV-INFECTED AND HIV-UNINFECTED WOMEN IN RURAL AND URBAN AREAS OF TANZANIA

Kahesa, Crispin¹; Mwaiselage, Julius¹; Haynatzki, Gleb²; Wood, Charles²;
West, John²; Angelletti C., Peter²

¹Ocean Road Cancer Institute; ²University of Nebraska-Lincoln

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Objectives Tanzania is a rapidly growing sub-Saharan African country. To investigate the influence of HIV upon HPV-dependent cervical dysplasia in women from urban and rural areas of Tanzania, we designed a multi-site cross-sectional cervical screening study. We chose two rural catchment clinics in Bagamoyo and Chalinze, and one in an urban setting, Dar es Salaam; The Ocean Road Cancer Institute (ORCI). This essential information will enable to assess HPV-type related relevance of HPV vaccine among HIV-positive affected women.

Methods Pap smears were performed and cervicalcytobrush samples were collected for HPV genotyping. We utilized a simple and low-cost HPV multiplex PCR genotyping method. Pap smears were read in quadruplicate by readers blinded to HIV status and patient demographic data. Blood samples were collected for HIV status confirmation and CD4+ T-cell counts. All HPV genotype, cytopathology, and HIV status data were later compared to patient demographic factors. Currently, we have recruited 680 patients out of our target of 1400.

Results Analysis of participants across the cohort revealed a high rate (33%) were HIV positive. HPV16 was the most common HPV genotype at 45.5%, with similar levels across all three catchment sites. Participants from Dar es Salaam showed the highest prevalence of any HPV infection and the greatest cytopathology. The rural sites exhibited a greater proportion of HPV naïve and normal cytopathology than the urban site. Interestingly, HPV16, 33 and 39 coinfections were observed at significantly higher proportions in the urban location (15%); than in either rural setting, Chalinze (4%) or Bagamoyo (0%). We found that HPV16, 33, and 39 coinfection was associated with higher grades of cytopathology ($p=0.05$).

Conclusions HIV was associated with greater HPV genotype diversity, greater numbers of HPV coinfections and higher grades of cytopathology.

POSTER

WELCOME RECEPTION AND POSTER SESSION ONE

16:30–18:00

Tuesday
7 November

Kaimila, Bongani

P101 | CD4 COUNT AND HIV RNA TRENDS DURING TREATMENT FOR HIV-ASSOCIATED LYMPHOPROLIFERATIVE DISORDERS IN MALAWI

Kaimila, Bongani¹; Kasonkanji, Edwards¹; Chikasema, Maria¹;
Tewete, Blessings¹; Van der Gronde, Toon¹; Gopal, Satish^{1,2,3}

¹UNC Project; ²University of Malawi; ³University of North Carolina

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Background Lymphoma incidence is increasing in sub-Saharan Africa (SSA) in part due to HIV. Changes in CD4 count and HIV RNA over time among HIV+ patients with lymphoproliferative disorders receiving chemotherapy in SSA have not been described.

Methods We describe newly diagnosed HIV+ patients with lymphoproliferative disorders initiating chemotherapy in Malawi including CD4 count and HIV RNA trends. Patients were enrolled in a prospective longitudinal cohort from June 2013 to December 2016. CD4 and HIV RNA were measured at baseline and every 6 months for up to 2 years. All patients received antiretroviral therapy (ART) according to national guidelines concurrently with chemotherapy and afterward.

Results During the study period, there were 72 HIV+ patients with pathologically confirmed lymphoproliferative disorders [59 non-Hodgkin lymphoma (NHL), 5 Hodgkin lymphoma (HL), 8 multicentric Castleman disease (MCD)]. Median age was 43 years [interquartile range (IQR) 22–63] and 42 (58%) were male. At pathologic diagnosis, 55 patients (69%) were on ART for a median duration of 47 months (IQR 1–387), with median baseline CD4 count 138 cells/ μ L (IQR 2–2235) and median HIV RNA 2.1 log₁₀copies/mL (IQR 0.3–7.3). As December 31st, 2016, vital status was known for all patients with a median follow-up of 19 months (IQR 5–42) among patients still alive. Kaplan-Meier overall survival for the cohort was 51% (95% confidence interval (CI) 38–62%) at 1 year and 42% (95% CI 29–54%) at 2 years. Baseline CD4 count <100 cells/ μ L was possibly associated with increased mortality (hazard ratio 1.7, 95% CI 0.9–3.2, $p=0.12$) and baseline HIV RNA >2 log₁₀ copies/mL was also possibly associated with increased mortality (hazard ratio 1.6, 95% CI 0.8–3.0, $p=0.16$). CD4 count and HIV RNA improved over time following diagnosis to 263 cells/ μ L and 0.3 log₁₀ copies/mL at 2 years, respectively, with different patterns observed in different histologic groups. These trends persisted even when analyses were restricted to patients who survived at least 1 and 2 years, suggesting that progressive immune reconstitution and HIV RNA suppression on ART during and after chemotherapy was independent of possible increased risk of death for those with worse baseline CD4 count and HIV control.

Conclusions In Malawi, patients with HIV+ lymphoproliferative disorders presented with severe immunosuppression overall. Baseline CD4 & HIV RNA were possibly associated with survival, and progressive CD4 and HIV RNA improvements occurred over time. Survival for HIV+ lymphoproliferative disorders is achievable in SSA along with effective immune reconstitution and HIV control on ART.

PRESENTATION

Kaimila, Bongani

SALVAGE CHEMOTHERAPY FOR ADULTS WITH RELAPSED OR REFRACTORY LYMPHOMA IN MALAWI

**BASIC
SCIENCES
AND CHEMO-
THERAPY
ABSTRACTS**

13:30–14:30

Friday

10 November

Kaimila, Bongani¹; Kasonkanji, Edwards¹; Van der Gronde, Toon¹; Chikasema, Maria¹; Stanley, Christopher¹; Gopal, Satish^{1,2,3}

¹UNC Project; ²University of Malawi; ³University of North Carolina

Correspondence bkaimila@unclilongwe.org

Background Relapsed or refractory lymphoma (RRL) among adults is common in sub-Saharan Africa (SSA). However, there are no descriptions of second-line line treatment for this population.

Methods We describe patient characteristics, tolerability, and outcomes for a prospective longitudinal cohort of patients with RRL receiving second-line chemotherapy in Malawi between June 2013 and May 2016. Salvage treatment was standardized using a modified EPIC regimen (etoposide, prednisone, ifosfamide, cisplatin), due to ambulatory administration, lack of cross-resistance with first-line treatment, and prior descriptions without co-administration of hematopoietic growth factors, which are not routinely available.

Results Twenty-one patients (18 relapsed, 3 refractory) were treated with EPIC between June 2013 and May 2016. Median age was 40 years (IQR 16–78), 12 (57%) were male, and 13 (62%) were HIV+. For relapsed patients, median time to relapse from completion of first-line chemotherapy was 3.6 months (IQR 0.8–19.6). Median number of EPIC cycles received was 2 (IQR 1–6), and among 13 patients receiving <4 cycles, 12 (92%) were due to disease progression. 19 patients (90%) experienced grade III/IV neutropenia, and only 5 patients (24%) received at least 50% of planned day 15 cisplatin doses. Other grade III/IV toxicities included anemia (5, 24%), thrombocytopenia (3, 14%), renal dysfunction (1, 5%), and other (8, 38%, including vomiting, neuropathy, and pain). Number of cycles, cumulative dose, and dose intensity were comparable between HIV+ and HIV- patients. Seventeen patients (10 PR, 7 CR) achieved a response to EPIC, 2 had stable disease, and 2 refractory disease. Median OS for the entire cohort was 4.4 months (95% CI 2.4-5.6) without clear differences by HIV status.

Conclusions EPIC was feasible and modestly effective for RRL in Malawi. Neutropenia was the major toxicity, responses were frequent but short-lived, and OS was limited. Appropriateness of this approach in SSA is uncertain, and better first-line treatment is needed to reduce the numbers of patients requiring salvage therapy.

POSTER

POSTER SESSION TWO

16:30–18:00
Thursday
9 November

Kakisingi, Christian

P265 | NON HODGKIN LYMPHOMA AND RELATED FACTORS IN PATIENTS WITH PERIPHERAL LYMPHADENOPATHY IN LUBUMBASHI (DR CONGO)

Kakisingi, Christian¹; Mukuku, Olivier¹; Manika, Michel¹; Kashal, Marc¹; Kasamba, Eric¹; Kyabu, Véronique¹; Kabamba, Michel¹; Tshikuluila, Beya²; Muyumba, Emmanuel¹; Situakibanza, Hyppolite

¹University of Lubumbashi; ²Mafikeng Provincial Hospital;

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Introduction Lymphadenopathy refers to the condition in which lymph nodes become abnormal with regards to the size, consistency, tenderness, and may be one of the symptoms of many diseases. Unfortunately striking differences still exist with respect to reliability of NHL diagnosis between developed and developing countries. However some authors think epidemiological factors would exist to orientate diagnosis of NHL. Thus this study aimed to determine sociodemographic, clinic and biological factors associated with NHL in patients with peripheral lymphadenopathy in the department of internal medicine at the University of Lubumbashi Clinics.

Materials and Methods This is a cross-sectional study on superficial lymphadenopathy observed over a period of 30 months from November 2013 to April 2016 at the University of Lubumbashi Clinics. Parameters studied included gender, age, localization and clinical characteristics of superficial lymphadenopathy; biological parameters and pathologic diagnosis were determined by lymph nodes biopsy.

Results Data of 52 patients was collected and 40.40% of these patients had NHL as pathologic diagnosis. Some of variables studied presented a significant statistical association and included age ≥ 50 years old ($p = 0.0072$), male gender ($p = 0.0381$), inguinal location ($p = 0.0081$), multifocal location ($p = 0.0101$), painless ($p = 0.0360$), HIV serology ($p = 0.0192$) and leukocytosis ($p = 0.0022$). After logistic regression, NHL explicative variables: male gender, painless and leukocytosis were significant.

Conclusion These related factors can be used as elements to orientate the diagnosis for our health facilities and would contribute to early NHL diagnosis for patients with lymphadenopathy in low-income countries like the DR Congo.

POSTER

POSTER SESSION TWO

16:30–18:00
Thursday
9 November

Kampani, Coxcilly

P289 | EXPERIENCES AFTER IMPLEMENTING MANUAL IMMUNOHISTOCHEMISTRY AT KAMUZU CENTRAL HOSPITAL PATHOLOGY LABORATORY, MALAWI

Kampani, Coxcilly¹; Dhungel, Bal Mukunda^{1,2}; Krysiak, Robert¹; Fedoriw, Yuri³; Montgomery, Nathan³; Tomoka, Tamiwe¹

¹UNC Project; ²Kamuzu Central Hospital; ³University of North Carolina at Chapel Hill

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Immunohistochemistry (IHC) has never been implemented since the establishment of any of the four histopathology laboratories in Malawi due to lack of expertise, high cost of equipment and reagents. IHC refers to the process of detecting antigens in cells of a tissue section by exploiting the principle of antibodies binding specifically to antigens in biological tissues. We describe our experiences after implementation of manual immunohistochemistry at Kamuzu Central Hospital (KCH) pathology laboratory. After the establishment of the pathology laboratory in 2011, there was need to conduct immunohistochemistry on some malignant tumors, supplementing the Hematoxylin and Eosin stain to enable classification and diagnosis that would inform clinical management according to local guidelines. In 2013 following an in-house training of laboratory staff, and with funding from the UNC-Malawi project, a manual IHC service was set up mainly to cater for research studies and selected challenging routine cases upon request by the attending pathologist.

The major tumour groups that were considered important to be differentiated were carcinoma, lymphoma, sarcoma and neural tumours and these informed the choice of the the first antibodies to be used. The antibodies included AE1/AE3, CD3, CD20, CD45 and synaptophysin. Later, driven by need more antibodies were added to the panel and these included HHV8 LANA, Ki67 proliferation marker, hormone receptors for breast, BCL2, CD30, TdT and CD138. The need for lymphoma markers was also driven by a lymphoma cohort study currently underway at KCH.

Over the four years 1506 IHC tests have been conducted and we experienced an increase in demand as the overall total number of specimen sent to our lab increased. There were 47 tests in 2013 and 916 tests in 2016. Lymphoid markers were the most commonly requested and comprised 1126 of the total number representing 74.7% of all total stains done. 95% of all the stains done were successful. Though time consuming, manual IHC with a limited equipments, reagents and targeted panel of antibodies has proved to be very beneficial to diagnostic service and research at KCH, a resource restricted setting.

POSTER

POSTER SESSION TWO

16:30–18:00

Thursday

9 November

Kampi, Josephine

P346 | EFFECT OF INCOME DIVERSIFICATION ON FINANCIAL SUSTAINABILITY OF NATIONAL PALLIATIVE CARE ASSOCIATIONS IN EAST AND SOUTHERN AFRICA

Kampi, Josephine¹

¹African Palliative Care Association

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National palliative care associations in Africa play a pivotal role in the coordination, promotion and integration of palliative care in health systems of their respective countries. Some of these associations appear to be thriving while others seem to be struggling with financial sustainability. This study therefore sought to establish the effect of income diversification on the financial sustainability of national palliative care associations in East and Southern Africa. The research employed a case study design targeting national palliative care associations in East and Southern Africa where APCA has had programme interventions in the last seven years and with audited accounts. These included Uganda, Tanzania, Kenya, Malawi and Zimbabwe. Questionnaires were administered across 20 staff of the national associations, 4 ministry of health palliative care focal people, 6 palliative care donors and 3 Regional Key Informants. Audited accounts of these associations over the last seven years were also analysed to generate financial information. Research findings revealed that the national associations have very high donor dependency and over the last seven years, their main source of income has been grants from Trusts, Foundations and other NGOs as well as foreign governments. There is very limited internally generated income and no government funding yet donors are changing their funding priorities which is likely to affect their financial sustainability. All these associations relied on writing grant proposals as their major fundraising strategy. The study concluded that; funding from donors shows a declining trend which threatens the existence of national associations, these associations should go beyond relying on donor funding to leveraging on other potential sources of income like income generating activities which improves the potential for organisational financial sustainability as well as focus on new fundraising strategies. The study recommended that; national associations should identify new sources of funding for example, instead of relying on a few traditional palliative care donors, they should explore funding for all other diseases which need palliative care, invest in income generating activities, provide technical assistance to governments in the integration of palliative care into health systems at different levels and also explore partnerships with different stakeholders.

PRESENTATION

Kantelhardt, Eva Johanna

BIOLOGICAL CHARACTERISTICS OF BREAST CANCER IN A MULTI-COUNTRY AFRICAN STUDY

COLLABORATIVE EPIDEMIOLOGY: SUCCESSES & PERSPECTIVES

13:30–14:30

Wednesday

8 November

Kantelhardt, Eva Johanna¹; Tariku, Wakuma²; Parkin, Donald Maxwell³; Malle, Brahima¹

¹Martin-Luther-University Halle; ²Aira Hospital; ³African Cancer Registry Network

Correspondence eva.kantelhardt@uk-halle.de

Objective The “Breast Cancer Biology Study” was initiated within the African Cancer Registry Network (AFCRN) to explore the proportion of oestrogen receptor-positive tumours within consecutive cases from different regions. The majority of investigators are unable to provide immunohistochemistry service due to financial constraints. The aim is to collect, analyze and compare specimens from countries in West, East and Southern Africa.

Methods Consecutive breast cancer blocks from 10 centres in sub Saharan Africa were collected. All specimens were fixed with buffered 10% formalin and locally embedded in paraffin before transport to Germany. H&E staining and grading was assessed. Estrogen-, progesterone-receptor, HER2 and Ki67 were stained by standard automatic protocols (Zytomed Systems). Hormone receptors were considered positive when >1% cells were stained. HER2 was considered positive when staining showed 3+. Quality of stained specimen was documented.

Results Investigators from Mali, Nigeria, Ivory Coast, DR Congo, Ethiopia, Mauritius, Malawi and South Africa sent consecutive blocks up to May 2015. The majority of blocks were adequately stained. There was some variation due to quality of local paraffin and possible delay in fixation due to administrative procedures. A quality score was introduced to account for the influence on receptor status. Most tumors were assessed NST, T2/T3 and grade 2 or 3.

Conclusions The proportion of hormone receptor positive cases was about half of the cases. Proportions differed considerably among regions. Details of staining and regional results are presented. This encouraging and active collaboration within the African Cancer Registry Network shows feasibility of performing population based tumor-biologic research in sub Saharan Africa.

PRESENTATION

Kantelhardt, Eva Johanna

INFLUENCE OF CLINICAL PATHOLOGICAL AND TREATMENT FACTORS ON OUTCOME OF COMMON CANCERS IN AFRICA

**CANCER
REGISTRIES
(continued)**

14:40–16:30

Tuesday

7 November

Kantelhardt, Eva Johanna¹; Griesel, Mirko¹; Kamate, Bakarou²; Traore, Cheick²; Korir, Anne³; Parkin, Max⁴

¹Martin-Luther-University Halle; ²University Bamako; ³Kenya Medical Research Institute; ⁴African Cancer Registry Network

Correspondence eva.kantelhardt@uk-halle.de

Objective There are various descriptive studies on unselected patient cohorts in high resource settings showing positive effect of guideline adherence on outcome of cancer. The situation in LMICs is largely unknown. There are some African hospital based studies on therapy and outcome of cancer. This information is limited since the case series from hospitals are limited to those who do actually receive therapy. Few African population based cancer registries have published data on outcome of unselected cases. The Gambia and Uganda report only 12 and 46% 5-year age standardized (0–74 years) relative survival for breast cancer respectively. Only one study from an African population based cancer registry has investigated treatment received (radiotherapy, yes or no) in relation to outcome (survival of cervix cancer cases). To have a full picture of cancer care according to levels of resources available, we aim to study population based data from the existing collaboration within the African Cancer Registry Network.

Methods Data is collected from countries with different levels of resources: six African registries. A random sample is selected and clinical files are retrieved to collect source data. Patients with phone numbers were called by trained staff to assess survival.

Results The most common cancers in sub Saharan Africa of the breast, cervical, prostate, colon and NHL were chosen. Influence of stage, therapy and other factors on outcome (60 cases from each registry) is assessed.

Conclusions The collection of data on stage and therapy received within the population based registries was feasible with dedicated local staff and an additional medical student. On average, 70% of the files were retrieved. It was often possible to obtain follow-up information by phone calls. Completeness of therapy varies greatly among individual patients. Patients receiving sub-optimal therapy have adverse outcome.

POSTER

Kanyamuhunga, Aimable

P322 | DELAYED CANCER DIAGNOSIS:

A CHALLENGE AT KIGALI UNIVERSITY TEACHING HOSPITAL

POSTER

SESSION

TWO

16:30–18:00

Thursday

9 November

Kanyamuhunga, Aimable¹

¹Centre Hospitalier Universitaire de Kigali

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Background A few studies have investigated delays in diagnosis of childhood cancer; this has never been subject of study in Rwanda. Early stage diagnosis can have a positive impact on prognosis and the quality of life of children with cancer. This study investigated the causes of cancer diagnosis whether the delays were patients related, health practitioner and system-related.

Methods It is a hospital based prospective study. This study included 74 children newly diagnosed with cancer at Kigali University Teaching Hospital from Jan 2016 up to now. Interval between symptom onset and final diagnosis for each child was estimated and examined by univariate and multivariate analysis to determine correlation between variables.

Results The median total diagnosis delay was 77 days. The median patient delay was 53 days. The median health practitioner delay was 22 days. The median for system related delay was 8 days only. The malignancy type and class UBUDEHE significantly affected the time for Diagnosis.

Conclusion There was a considerable diagnosis delay of childhood cancer diagnosis at Kigali University Teaching Hospital especially related to parents or guardian characteristics. Efforts should be made to promote childhood cancer awareness among the health care provider and at the community level.

PRESENTATION

Kapambwe, Sharon

IDENTIFYING RELEVANT RESEARCH, AND MOVING FROM PILOT TO SCALE UP; CERVICAL CANCER IN ZAMBIA

**EVIDENCE
TO POLICY:
CANCER
CONTROL
PLANNING**

14:40–16:30

Wednesday

8 November

Kapambwe, Sharon^{1,2}; Matambo, Jane²; Mwanahamuntu, Mulindi³; Parham, Groesbeck⁴; Msadabwe, Susan^{1,5}; Lishimpi, Kennedy^{1,5}

¹Ministry of Health Zambia; ²Centre for Infectious Disease Research;

³Women and Newborn Hospital; ⁴Cancer Diseases Hospital;

⁵University of North Carolina

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Background Zambia has one of the highest incidence rates of invasive cervical cancer in the world. Cervical cancer is the most frequent cancer in Zambia accounting for approximately a third of new cancer cases seen annually. The country equally has a generalized HIV epidemic with a high adult prevalence rate of 13.3%. HIV-infected women are at a much higher risk for incidence, progression and persistence of oncogenic HPV infection.

Methods In 2004, a pilot research done among HIV infected women showed one of the highest prevalence of abnormal squamous cytology seen in the world. In response to the findings, a public sector cervical cancer screening program initially targeting HIV infected women was established in 2006 one province. The program is a nurse led Visual Inspection with Acetic Acid (VIA) with enhanced digital cervicography. Visual screening has limitations. Molecular point of care (POC) HPV testing research done among HIV infected women in one clinic. Women with visible lesions are treated with cryotherapy in same visit, those with visible complex lesions are referred for histopathologic evaluation. Same day cryotherapy as screening at 64.5% led to switch to thermocoagulation.

Results Close to 400,000 women screened in the program since inception. The service is in over 60 health facilities in all the provinces with plans to scale up to all districts. Over 50% of the centres switched to thermocoagulation from cryotherapy. POC HPV testing study among HIV infected women showed high sensitivity and specificity. Plans for a pilot HPV testing as a primary test study now underway.

Conclusion The Zambian cervical cancer screening program shows that findings from research can be translated into national public health programs. It is imperative to continuously use research to inform public health policies.

PRESENTATION

PREVENTION & SCREENING FOR CERVICAL CANCER IN AFRICA (cont.)

14:40–16:30

Tuesday

7 November

Kapambwe, Sharon

LESSONS LEARNT FROM THE EVOLUTION AND EXPANSION OF CERVICAL CANCER SCREENING IN ZAMBIA

Kapambwe, Sharon^{1,2}; Matambo, Jane²; Mwanahamuntu, Mulindi^{3,1}; Parham, Groesbeck^{4,3}; Msadabwe, Susan^{1,5}; Lishimpi, Kennedy^{1,5}

¹Ministry of Health Zambia; ²Centre for Infectious Disease Research;

³Women and Newborn Hospital; ⁴University of North Carolina;

⁵Cancer Diseases Hospital

Correspondence skapambwe@yahoo.com

Background Zambia has one of the highest incidence rates of invasive cervical cancer in the world. Cervical cancer is the most frequent cancer in Zambia accounting for approximately a third of new cancer cases seen annually.

In 2003, Zambia had a raging HIV epidemic with HIV prevalence of 16.5%. A critical shortage of physicians, with physician patient ratio of 0.12 per 1,000. There was an increase in cervical cancer cases with a number of women presenting at much younger age. Doctor-led cytology based screening was limited or simply nonexistent in most places. The screening model was equally not scalable and unsustainable with inadequate laboratory infrastructure. Cervical cancer lay in the shadows of HIV/AIDS and communicable diseases.

Evolution In 2004, a pilot research done among HIV infected women showed one of the highest prevalence of abnormal squamous cytology seen in the world. Approximately, one quarter of study participants had lesions suspicious of cervical cancer. In response to the findings, in 2006 a public sector cervical cancer screening program initially targeting HIV infected women was established housed with HIV/AIDS programs. Leveraging on the existing HIV/AIDS platform clinics were opened in government operated clinics. The program is a nurse led Visual Inspection with Acetic Acid (VIA) with enhanced digital cervicography. Local adaptations done to improve VIA detection. These adaptations included website consultation leading to immediate access by nurses to experts. Local training programs for health workers to increase number of health workers skilled in cervical cancer prevention. Same day cryotherapy as screening to increase adherence to treatment.

Scaling up Three phase scale-up approach. First phase scale up to provincial hospitals providing VIA, cryotherapy or thermocoagulation and LEEP services. Phase two involves scaling up to district hospitals providing VIA, cryotherapy or thermocoagulation with or without LEEP. Finally, primary health facilities providing only VIA and cryotherapy/thermocoagulation.

Government ownership is key in sustaining these programs. Creation of cervical cancer focal point persons at national and provincial levels to coordinate work at provincial level. Leveraging of other platforms (HIV, NCDs, Maternal health, etc.).

Pathology remains a challenge, telepathology and local training programs improving services.

Conclusion Close to 400,000 women screened since inception. Over 60 screening centres opened countrywide with LEEP centres in about 50% of the centres. Research critical in decision making. Establishing and scaling up a cervical cancer screening program is possible but always take into account the local environment.

PRESENTATION

Karagu, Alfred

**A COLLABORATION BETWEEN RESEARCHERS AND POLICY MAKERS
IN SETTING A NATIONAL RESEARCH AGENDA-KENYAN EXPERIENCE**

**EVIDENCE
TO POLICY:
CANCER
CONTROL
PLANNING**

14:40–16:30

Wednesday

8 November

Karagu, Alfred¹

¹National Cancer Institute of Kenya

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Cancer in Kenya is the 3rd leading cause of death in Kenya, after infectious diseases and cardiovascular diseases. It causes 7% of total national mortality every year. Over 80% of cancer cases in Kenya present in late stage.

Key policy documents include the National Cancer Control Strategy 2011–2016, National Cervical Cancer Control Strategy 2012–2015, National Cancer Management Guidelines 2013 and the Cancer Prevention and Control Act 2012.

In May 2014, the Ministry of Health in collaboration with the US National Cancer Institute held a two-day multi-stakeholder cancer meeting involving more than 80 participants drawn from government, academic institutions, research bodies and civil society. At the end of the meeting, four thematic working groups were established: cancer research, pathology and cancer registration, community awareness and education and health systems strengthening.

The four thematic groups have recorded significant gains in fostering a multi-sectoral response to the growing cancer burden in Kenya while shaping policy for effective cancer control. Positive attributes from this multi-sectoral engagement include: development of a national curriculum for cancer diagnosis targeted at primary health care workers; government support towards strengthening of 3 population based cancer registries; ongoing systematic review of oncology research in Kenya and development of a set of patient education materials which were launched during 2017 World Cancer Day celebrations

This has culminated in a collaborative process to develop and launch the new National Cancer Control Strategy 2017–2022.

POSTER

Karim, Safiya

P290 | ONCOLOGY MEDICAL EDUCATION IN LOW AND MIDDLE INCOME COUNTRIES: A SCOPING REVIEW

**POSTER
SESSION
TWO**

16:30–18:00

Thursday

9 November

Karim, Safiya¹; Papneja, Neha²; Zhang, Chaoran³; Hammad, Nazik¹; Berry, Scott⁴

¹Queen's University; ²University of Saskatchewan; ³University of British Columbia; ⁴Sunnybrook Health Sciences Centre

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Background A disproportionate burden of cancer affects the low and middle income countries (LMICs). The World Health Organization (WHO) reports that, without immediate action, the global number of deaths from cancer will increase by approximately 80% by 2030, with most of those deaths occurring in the LMICs. At the same time, there is a significant shortage of oncologists in these countries. The WHO has called for a transformative scale-up of health professional education that addresses the quantity, quality and relevance of health care providers in order to improve population outcomes. An understanding of successful strategies could guide the development of effective educational initiatives related to oncology. Therefore, we conducted a systematic review of the literature to identify initiatives in medical education that are taking place in LMICs.

Methods We searched MEDLINE and MEDLINE IN PROCESS for articles published in English between January 1st, 1995 and December 31, 2015. Eligible articles described a specific education initiative in a LMIC. Review articles, conference abstracts and unpublished manuscripts were excluded. Articles were classified based on being specific to oncology, the country of the initiative, the recipient of the initiative (i.e. physician/ resident/ medical student, nurse, other health professional, non-health professional), the level of medical education (undergraduate, graduate, continuing education) and the use of e-learning.

Results Of the 8,642 articles identified, 314 met our criteria for inclusion. Of these only six articles were specific to oncology. Oncology initiatives took place in India (2), Nigeria, Kenya, Guatemala and El Salvador. Five of the six articles described interventions that were aimed at physicians, residents or medical students with one article describing an intervention for nurses. Four articles focused on continuing medical education, one article on undergraduate education and one article on graduate education. Three of the six articles incorporated the use of e-learning. All six articles described collaborations with high-income countries (HICs) to design or deliver oncology education.

Conclusions Of the literature that exists on educational initiatives in LMICs, there are a limited number related to oncology. In addition, the experiences of homegrown programs (i.e. those that don't depend on partnerships with HICs) are rarely reported. Further study of oncology related educational initiatives and publication of best practices is warranted to gain a better understanding of optimal strategies.

POSTER

WELCOME RECEPTION AND POSTER SESSION ONE

16:30–18:00

Tuesday

7 November

Kariuki, Grace

P426 | EVALUATION OF THE NATIONAL CERVICAL CANCER PREVENTION PROGRAM, KENYA, 2016

Kariuki, Grace¹; Oyugi, Elvis¹; Brand, Nathan³; Mishka, Cira³; Ng'ang'a, Anne²; Obonyo, Mark¹; Topazian, Hillary³; Gura, Zeinab¹

¹Field Epidemiology and Laboratory Training Program; ²National Cancer Control Program; ³Leidos Biomedical Research

Correspondence grace.kariuki@outlook.com

Background Cervical cancer, caused by human papilloma virus (HPV), is a leading cause of morbidity and mortality among women globally; 87% of deaths are in low and middle income countries. Cervical cancer and cervical dysplasia are detectable and curable in early stages. We assessed availability and utilization of cervical cancer screening and treatment in selected Kenyan county health facilities.

Methods We selected 32 public health facilities from eight out of 47 Kenyan counties through purposive sampling in November 2016. We reviewed data from the cervical cancer screening and treatment registers and abstracted demographic, clinical and risk factor information. Key-informant interviews were conducted with the county reproductive health coordinators and health workers at cervical cancer clinics. We calculated descriptive statistics, and compared HIV status and age to screening results.

Results A total of 32 facilities were evaluated, and 35,080 client records were reviewed. Health facility-based integrated cervical cancer screening and treatment services were available in all eight counties; mobile/outreach services in three counties. Of 32 health facilities, visualization in acetic acid/visualization in Lugol's iodine (VIA/VILI) was offered in 31 (97%) facilities, Pap smear in 5 (16%) facilities, cryotherapy in 17 (53%) facilities, and loop electrosurgical excision procedure in one (3%) facility. No facilities offered HPV vaccination. Standard VIA/VILI data tools were available in 22(69%) facilities. Of 35,080 women, 2404 (7%) were screened using pap smear; 2746 (7.8%, range: 2.9–10.9) had a positive VIA/VILI result. There were no histotechnologists in any facility. Reported barriers to women seeking screening and treatment were poor availability and access, low awareness, gender and attitude of health workers, stigma and socio-cultural beliefs. HIV infection (OR 1.5; CI 1.26, 1.67) was associated with positive VIA/VILI result.

Conclusion Basic cervical cancer screening and treatment services are available at most facilities, but were insufficient due to lack of essential equipment, supplies and human resource capacity. The overall VIA/VILI positivity was within the expected range (5-10%). We recommend roll-out of HPV vaccination, training specialized cadres for histology/cytology and availing requisite equipment and supplies. We also recommend awareness creation and health education to address some of the barriers to seeking the cervical cancer services.

POSTER

POSTER
SESSION

TWO

16:30–18:00

Thursday

9 November

Kashaigili, Heronima

P323 | CLINICOHISTOPATHOLOGICAL CHARACTERISTICS AND SHORT-TERM OUTCOMES OF RETINOBLASTOMA IN CHILDREN RECEIVING CARE AT KILIMANJARO CHRISTIAN MEDICAL CENTRE IN NORTHERN TANZANIA

Kashaigili, Heronima^{1,2,3}; Philemon, Rune^{1,3}; Kinabo, Grace^{1,3}; Godfrey, Furahini^{1,3}; Masalu, Nestory²; Mbaga, Blandina^{1,3,4}

¹Kilimanjaro Christian Medical University College; ²Bugando Medical Centre;

³Kilimanjaro Christian Medical Centre; ⁴Kilimanjaro Clinical Research Institute

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Retinoblastoma (RB) is the most common intraocular malignant tumor of childhood, if untreated can lead to ocular morbidity and mortality. More than 90% of retinoblastoma patients, live in developing countries with poor prognosis and outcome. A prospective descriptive study was conducted from September 2015 to May 2016. The study included all children aged 0 to 6 years with clinical diagnosis of retinoblastoma receiving care at Kilimanjaro Christian Medical Centre in Northern Tanzania to describe clinicohistopathological characteristic and short term outcomes of retinoblastoma. All patients underwent enucleation procedure, as part of management and the histological examination was done to assess tumor differentiation and tumor spread. A total of 26 children were enrolled, 26 eyes were examined for histology. Retinoblastoma confirmed in 24 eye specimen, 2 were excluded due to other tumors (Rhabdomyosarcoma). The common presentations were proptosis 10 (41.7%) and swelling 7 (29.2%). The unilateral disease was present in 21 (87.5%) and the Right eye was frequently involved. The majority of the patients presented with extraocular manifestation 18 (75%). The common Histopathological features were moderate and poorly differentiated tumor with optic nerve involvement, beyond optic nerve and extraocular spread. The main treatment optional was a combination of enucleation, chemotherapy and radiotherapy due to advanced tumor stages. The mortality was 4 (16.6%) in children who presented with moderate and poor differentiated tumor with beyond optic nerve and extraocular spread within three months follow up. Early diagnosis and proper management might reduce mortality and morbidity of children with Retinoblastoma.

POSTER

WELCOME RECEPTION AND POSTER SESSION ONE

16:30–18:00

Tuesday

7 November

Katsidzira, Leolin

P023 | THE GUT MICROBIOTA AND THE CHANGING COLON CANCER RISK IN ZIMBABWE

Katsidzira, Leolin¹; Zoetendal, Erwin²; Manyanga, Tadeus¹; Ou, Junhai³;
Wilson, Annette³; O'Keefe, Stephen^{4,5}

¹University of Zimbabwe; ²Wagenigen University; ³University of Pittsburgh;
University of Pittsburgh⁴; University of Stellenbosch⁵

Correspondence lkatsidzira@hotmail.com

Background and Aims The incidence of colorectal cancer is rising gradually in Zimbabwe. There is emerging evidence that this increase is partly associated with progressive urbanisation and westernization of diet and lifestyle. In general, diet drives colorectal cancer risk, which is increased by red and processed meat, and reduced by fibre, fruits, grains, and vegetables. We have recently provided evidence that the effects of diet on colorectal cancer risk are mediated by the colonic microbiota. To investigate this further, we examined the diet and microbiota composition in 10 urban and 10 rural healthy Zimbabwean volunteers, aged 50–65 years.

Methods Dietary intake was assessed by a food frequency questionnaire. Early morning faecal samples were collected in airtight containers and transported on ice before being frozen and stored within 2h for subsequent analysis. DNA was isolated from these samples and used for microbiota profiling using the Human Intestinal Tract Chip (HITChip), a 16S rRNA-based phylogenetic microarray, covering over 1000 gut bacterial species.

Results All the ten urban Zimbabweans consumed red meat at least once a week, compared to two rural Zimbabweans ($p=0.001$, Fisher's exact test). Importantly, the grain, vegetable and fibre intake was similar, with frequent consumption of cooked corn (maize) meal. The differences in faecal microbiota between the two groups were smaller than anticipated, with a similar diversity, richness and evenness. However, there were significant differences in the probe level signals between rural and urban Zimbabweans in the relative abundance of *Clostridium felsineum* (33 vs 35, $p = 0.048$), *Fusobacteria* (313 vs 350, $p = 0.048$) and *Gemella* (48 vs 51, $p = 0.048$).

Conclusion The microbiota profiles of urban and rural Zimbabweans still retain significant homogeneity possibly due to similarity in the consumption of the staple maize meal starch. However, subtle changes in specific microbes are evident, which may explain the increasing incidence of colon cancer among urban people. There were significantly higher levels of *Fusobacteria* in urban Zimbabweans. *Fusobacteria* are associated with red meat consumption and have recently been linked to colonic polyps and colon cancer.

PRESENTATION

Kayamba, Violet

EARLY DETECTION OF GASTRIC CANCER IN AFRICA

Kayamba, Violet¹; Kelly, Paul^{1,2}

¹University of Zambia School of Medicine; ²Queen Mary University of London

GIT:

PANCREAS

AND

STOMACH

11:00–12:30

Friday

10 November

Correspondence viojole@yahoo.com

Gastric cancer is the third leading cause of cancer deaths worldwide and more than 70% of the cases occur in developing countries. On average, the five-year survival for gastric cancer is 25%, but rates as low as 6% have been reported in some African countries. The stage of the disease at initial diagnosis is a major determinant of outcome, and in Africa gastric cancer is often diagnosed late. We have evidence from Zambia suggesting that late diagnosis is not necessarily due to late patient presentation. Despite being the most effective method for gastric cancer screening, endoscopic examination has been reported to only detect about 67% of the early lesions and its availability in Africa is very limited. It serves mainly urban populations or the privileged few, leaving many cases undetected. Endoscopic surveillance is very expensive, invasive and requires trained personnel making it impossible to implement on a population scale in Africa. There is an urgent need for cheap, less invasive and technically simpler methods for early gastric cancer. To improve the sensitivity of endoscopy, techniques have been developed such as magnifying endoscopy with narrow-band imaging, confocal laser endomicroscopy and chromoendoscopy. However, these have further increased the cost of ordinary endoscopy and are therefore not applicable in many African settings. The use of body fluids that are more easily obtained such as blood, urine and saliva are under extensive evaluation by many researchers with encouraging results. Serum biomarkers such as CEA; CA72-4; CA19-9; CA15-3 and CA12-5; cytokines IL-1 β , IL-6, IFN- γ , and IL-10; tumour associated antibodies; circulating tumour cells and nucleic acids (long non-coding RNA, mRNA, microRNA, and DNA methylation of specific genes) are all being evaluated and yet to be validated for gastric cancer screening. Metabolomic and proteomic analyses of these body fluids are also being considered as probable strategies. However, these require advanced techniques and employing them onto rural African populations would be a challenge. Other strategies under evaluation include molecular analysis of gastric aspirates and biopsies. These are more invasive and are technically demanding. Analysis of exhaled breath for specific volatile substances is yet another promising strategy, but its utility is also hampered by cost. In summary, gastric cancer remains one of the major causes of cancer deaths mainly due to late case detection. There is an urgent need to find strategies that can be employed in low-resource settings for earlier detection of gastric cancer and its premalignant lesions.

PRESENTATION

Kayamba, Violet

GASTRIC CANCER IN ZAMBIA: ESTIMATING ENVIRONMENTAL RISKS DUE TO MYCOTOXINS AND BIOMASS SMOKE EXPOSURE, A WORK IN PROGRESS

BIG CAT

AWARDEES

11:00–12:30

Wednesday

8 November

Kayamba, Violet¹; Zyambo, Kanekwa¹; Besa, Ellen¹; Heimbürger, Douglas C²; Atadzhanov, Masharip¹; Kelly, Paul^{1,3}

¹University of Zambia School of Medicine; ²Vanderbilt Medical Center;

³Queen Mary University of London

Correspondence viojole@yahoo.com

Background Gastric cancer is one of the major causes of cancer related mortality. We have established that in Zambia it occurs in young adults, presents late with advanced disease, and carries a poor prognosis but reasons for these observations are obscure. There are two critical questions, which can be immediately investigated, and in this study we propose to address both. Firstly, do foodborne mycotoxins (aflatoxins and fumonisins) contribute to gastric cancer risk? And secondly do inhaled mutagens in biomass smoke (swallowed or absorbed) contribute to this risk, as they do in oesophageal cancer? The aim of this study is therefore, to determine the gastric cancer risk factors in Zambia.

Methods This is an on-going hospital based study comparing gastric cancer patients to those without. Patient recruitment started in January 2017 is on going. Gastric biopsies are taken from all participants for histological confirmation of the diagnosis. In addition, gastric juice, blood and urine samples are being collected. Interviewer administered structured questionnaires are being employed to assess lifestyle characteristics. Data will be analysed using STATA 13 (Stata Corp, College Station TX). Presented in this abstract are preliminary findings on basic characteristics.

Preliminary Results A total of 238 patients have been enrolled with 133 (56%) females. Of these, 42 (18%) had endoscopic lesions suspected to be malignant and 23 (10%) have had histological confirmation. There was no statistically significant difference in age and sex between those with suspicious lesions and those without, $P=0.87$ and 0.10 respectively. Univariable analysis of those with suspected cancer showed that exposure to biomass smoke [OR 2.6; 95% CI 1.2–5.5, $P=0.007$], poor housing [OR 10; 95% CI 3.7–29.4, $P<0.0001$], lack of piped water [OR 4.5; 95% CI 1.5–13, $P=0.003$], lack of secondary education [OR 2.4; 95% CI 1.1–4.7, $P=0.03$] and not possessing a fridge [OR 2.3; 95% CI 1.1–4.7, $P=0.03$] were risk factors for gastric cancer in Zambia. However, on multivariable analysis only poor housing remained significantly different suggesting that these could be co-dependent variables. Serological and urine analyses are yet to be conducted.

Conclusions From these preliminary results, exposure to biomass, poor socio-economic status and education are risk factors for gastric cancer development in Zambia. However, these results might change once the full set of results is obtained and analysed.

POSTER

WELCOME RECEPTION AND POSTER SESSION ONE

16:30–18:00

Tuesday
7 November

Kelbore, Sefonias Getachew

**P052 | KNOWLEDGE AND ATTITUDE TOWARDS BREAST CANCER
AND BREAST CANCER SCREENING AMONG FEMALE HEALTH
OFFICERS AND NURSES IN ADDIS ABABA, ETHIOPIA**

Kelbore, Sefonias Getachew^{1,2}; Wtsadik, Selamawit³; Kantelhardt, Eva Johanna²;
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Background Most patients make their initial contact with the healthcare system in public health centers. Previous studies on knowledge of breast cancer among healthcare professionals in Ethiopia were only conducted in staff working in referral hospitals. In this study, we assessed knowledge of breast cancer risk factors, symptoms, and screening among female nurses and health officers working in public health centers in Addis Ababa, Ethiopia.

Methods From March–April 2016, a structured questionnaire was applied face-to-face to 422 female nurses and health officers working in 21 randomly selected public health centers. Univariate analysis was used to calculate summary statistics for each socio demographic factors (independent variables) and bivariate or multivariable analyses for the association between each socio demographic factor and breast cancer knowledge (dependent variables). Statistical significance was set at $p < 0.05$ for all tests.

Results Of the 419 nurses and health officers, only 8% and 23% mentioned family history and increasing age as risk factors for breast cancer, respectively. Eighty-seven percent of the participants knew lump in the breast as breast cancer symptom but only 23% of them knew breast pain as a symptom. About 82% of participants mentioned breast self-examination, 57% mentioned mammography, and 13% mentioned breast clinical examination as screening Methods In multivariate analysis, breast cancer knowledge was about 53% (Adjusted odds ratio (AOR) = 0.47; 95% CI, 0.24–0.93) lower in participants with associate degree than in those with Bachelor's degree. However, only 18% of the participants had knowledge about breast cancer.

Conclusions Knowledge about breast cancer is limited among female nurses and health officers working in public health centers in Addis Ababa. This underscores the need for in-service training of nurses and health officers in the public health centers about basic knowledge of breast cancer.

PRESENTATION

HIV AND
SITE SPECIFIC
CANCER
ABSTRACTS

08:25–09:25

Friday

10 November

Kelly, Helen

ANTIRETROVIRAL THERAPY, HIGH-RISK HUMAN PAPILLOMAVIRUS AND CERVICAL INTRAEPITHELIAL NEOPLASIA: A SYSTEMATIC REVIEW AND META-ANALYSIS

Kelly, Helen¹; Weiss, Helen A.¹; Benavente Moreno, Yolanda¹; De Sanjose, Silvia^{1,2}; Mayaud, Philippe¹

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Background The interactions of antiretroviral therapy (ART) with high-risk (HR) HPV and cervical lesions in women living with HIV (WLHIV) are poorly understood. We reviewed HR-HPV and cervical intraepithelial neoplasia (CIN) and squamous intraepithelial lesions (SIL) outcomes in ART-taking compared to ART-naïve WLHIV.

Methods We performed a systematic review and meta-analysis by searching Medline and Embase databases for cross-sectional or cohort studies from 1 January 1996 to 6 November 2016 that reported the association of ART with prevalence of HR-HPV or prevalence, incidence, progression or regression of CIN or SIL abnormalities. We performed random-effects meta-analyses to estimate summary statistics. Heterogeneity was examined using the I² statistic.

Results A total of 6,441 and 8,262 WLHIV were included from 29 studies evaluating the association of ART with prevalence of HR-HPV and high-grade CIN (CIN2+) or SIL (HSIL+), respectively. ART users had lower HR-HPV prevalence than ART-naïve WLHIV (adjusted Odds Ratio [aOR] =0.83, 95% CI: 0.70–0.99, I²=51%, adjusted for CD4+ count and ART duration), and was also lower among prolonged ART users (>2 years) compared to short-duration users and ART-naïve combined (crude OR=0.65, 95%CI: 0.55–0.77, I²=0.0%). There was some evidence of lower risk of CIN2+/HSIL+ among ART users (aOR=0.65, 95%CI: 0.40–1.06, I²=30%) compared to ART-naïve WLHIV.

Sixteen studies reported the association of ART with longitudinal cervical lesions (SIL) outcomes, from a combined total of 6,664 WLHIV. ART use was associated with a lower risk of any SIL incidence (adjusted Hazard Ratio [aHR] =0.64, 95% CI: 0.47–0.86, I²=19%, adjusted for time-varying ART and CD4+ count), and progression (aHR=0.64, 95% CI: 0.54–0.75, I²=18%) and increased likelihood of SIL regression (aHR=1.58, 95% CI: 1.28–1.94, I²=18%).

Conclusions Prolonged ART use in WLHIV can decrease the risk of HR-HPV and CIN2+/HSIL+ prevalence, SIL incidence and progression and induces regression.

PRESENTATION

Kingham, T. Peter **PANCREAS SURGERY AND PALLIATION**

Kingham, T. Peter¹
¹Memorial Sloan Kettering Cancer Center

GIT:
PANCREAS
AND
STOMACH
11:00–12:30
Friday
10 November

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This session will review diagnostic workup for patients with premalignant and malignant tumors of the pancreas. Indications for resection with Whipple and distal pancreatectomy will be discussed. Given that many patients with pancreatic adenocarcinoma present with locally advanced or metastatic disease, interventional and surgical palliative therapies will also be reviewed.

PRESENTATION

Kirimunda, Samuel

IDENTIFICATION OF APPROPRIATE CONTROLS FOR STUDIES IN AFRICA

**CANCER
EPIDEMIOLOGY**

14:40–16:00

Friday

10 November

Kirimunda, Samuel¹; Mbulaiteye, Sam M.²

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Epidemiological studies seek to characterize the distribution of disease and exposures in populations. The primary study designs used include observational studies, such as those using the cross-sectional, case-control or cohort design, or experimental design, such as the randomized controlled trials (RCT). Appropriate controls are central to assessing the quality of epidemiological evidence about the risk of becoming a case. Controls should have the same chance of being included in the study, they should be similar to the cases in all respects, except having the disease of interest, and should be evaluated in the same way as the cases, except for case disease-related investigations. Evaluating how comparable the controls are relative to the cases is a central feature of epidemiological study design, implementation, analysis and interpretation. While the experience with epidemiological studies is well established in developed countries, few epidemiological studies have been conducted in Africa and the experience of designing, conducting, and analyzing well-conducted epidemiological studies is relatively under-developed. As part of our efforts to understand the infections and genetic factors driving the high incidence of Burkitt lymphoma (BL), a highly proliferative B-cell lymphoma, endemic in sub-Saharan African children, we conducted the Epidemiology of Burkitt Lymphoma in East African Children and Minors (EMBLEM) study.

Endemic BL is an excellent disease to motivate a careful evaluation of the challenges involved in the selection of controls because the disease occurs in rural, poor children aged 6-9 years, whereas most health centers where cases are treated are located in urban regions and pediatric wards are usually filled with acute illnesses, such as malaria, which has been correlated with BL. Thus, enrollment of hospital controls could result in younger controls who are exposed to malaria, increasing a bias to the null. Conversely, enrolling children with non-emergency conditions or orthopedic conditions might lead to geographical bias, while enrolling controls from school-going children could result in systematic biases if the rural cases are less likely to be enrolled in school.

To characterize the impact of different case-control selection strategies, the EMBLEM study enrolled three types of controls: matched population controls who were age, sex, and regionally matched; pilot population controls, who were enrolled from sentinel populations thought to be representative, and health-center population controls, who were enrolled from local area health centers. We discuss the pros and cons of different control selection strategies as well as cost considerations, expanding on the available experience in sub-Saharan Africa.

POSTER

POSTER SESSION TWO

16:30–18:00
Thursday
9 November

Kirira, Peter

P291 | AN INVESTIGATION OF THE ANTI-PROLIFERATIVE AND ANTIOXIDANT ACTIVITY OF PLANT DERIVED EXTRACTS AGAINST CERVICAL AND PROSTATE CANCER CELL LINES

Kirira, Peter¹; Moga, Dorothy²; Ng'ang'a, Joseph²; Matu, Esther³
¹Mount Kenya University; ²Jomo Kenyatta University of Agriculture & Technology; ³Kenya Medical Research Institute

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Cancer is the third largest cause of mortality in Kenya. Treatment options available for cancer include chemotherapy, radiation and surgical procedures but none presents with minimal side effects and high cure rates. Therefore there is a need to explore new therapies for cancer. For a long time, plants have been used to manage tumor and related ailments in Kenya. The aim of this study was to determine the phytochemical composition, antiproliferative, antioxidant and acute toxicity of organic and aqueous extracts of *Azadirachta indica*, *Vernonia amygdalina* and *Galium aparinoides*. Antiproliferative activity was determined against cervical (Hela) and prostate (DU145) cancer cell lines using 3-(4,5-dimethylthiazol-2-yl)-2,5-diphenyltetrazolium bromide (MTT) assay method. Cytotoxicity was determined using Vero cell line (L6). Further, the active extracts were combined and assayed in vitro using the checkerboard method. The in vitro antioxidant activity was assayed using 2, 2' diphenylpicrylhydrazyl (DPPH) free radical scavenging assay. Acute oral toxicity studies was evaluated using OECD guidelines. In the antiproliferative assay, methanol root bark and stem bark extracts of *A. indica* reported high IC₅₀ values of $1.85 \pm 0.01 \mu\text{g/ml}$ and $2.59 \pm 0.29 \mu\text{g/ml}$ respectively, against Hela cancer cell line, and IC₅₀ values of $1.53 \pm 0.07 \mu\text{g/ml}$ and $3.26 \pm 0.28 \mu\text{g/ml}$ respectively, against DU145 cancer cell line. The results were comparable with the standard 5-Fluorouracil (5-FU) with IC₅₀ values of $2.04 \pm 0.87 \mu\text{g/ml}$ and $5.06 \pm 0.28 \mu\text{g/ml}$ against Hela and DU145 cell lines respectively. Extracts of *V. amygdalina* and *G. aparinoides* had low IC₅₀ values in Hela and DU 145 cell lines respectively. Notably, the methanol stem bark extract of *A. indica* had a high SI index of 436.52, an indication that the cytotoxic effect of this extract was selective to cancerous cells. In combination assay, the standard drug 5-Fluorouracil and methanol stem bark extract of *A. indica* had a synergistic activity of FIC $0.937 \mu\text{g/ml}$. Oral administration of methanol root bark extracts of *A. indica* at the highest dose of 2000 mg/kg body weight demonstrated no mortalities and no adverse effects suggesting that these extracts were non-toxic. Methanol stem bark extracts of *A. indica* on the other hand revealed signs of acute toxicity. All the three plants contained alkaloids, phenolics, flavonoids tannins and terpenoids. This study validate use of *A. indica* in management of cancer and the results indicate that extracts from the root bark of *A. indica* have great potential as a valuable alternative source for anticancer agent.

PRESENTATION

PALLIATIVE AND SUPPORTIVE CARE

11:00–12:30

Tuesday

7 November

Kiyange, Fatia

AFRICAN PALLIATIVE CARE STANDARDS: HOW THESE WERE DEVELOPED AND HOW THEY IMPROVE THE QUALITY OF CARE FOR CANCER PATIENTS

Kiyange, Fatia¹; Luyirika, Emmanuel¹; Atieno, Mackuline¹

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Introduction Standards are a desired achievable level of performance against which actual performance can be measured. There is need to measure performance in the provision of palliative care to ensure that patients and their families are accessing quality care. Standards for Providing Quality palliative care across Africa, were developed and printed for the first time in 2010. Quality of life is critical in palliative care, and this can only be realised through deliberate quality improvement initiatives within health care facilities.

Aim of the standards The African Palliative Care Standards were developed to guide for the improvement of services across all levels of service delivery. They provide a minimum acceptable quality benchmark for palliative care service providers, patients, policy makers and advocates.

Problem statement Although palliative care services for cancer and other patients are expanding, attention to the quality of services has remained a luxury. Some components of care are given more attention than others, affecting the overall quality of services.

Methods The standards were developed through a participatory approach, with input from regional and international. The evidence based standards incorporate lessons from other countries in the world. A standards audit tool was developed and used to undertake standards audits of health facilities to establish the availability and quality of palliative care services and guides plans and actions for quality improvement. The audit process is a participatory process that uses focus group discussions and in-depth interviews with care providers, management teams, governance teams and beneficiaries of health services.

Results Good palliative addresses physical, psychological, social, cultural and spiritual needs of patients and their families, is founded on values and requires skills and knowledge. The ultimate goal of implementing palliative care standards is to improve patient outcomes. Service audits based on the African Palliative Care standards in 11 sites across eight African countries have indicated that certain components of palliative care remain weak and sometimes non-existent, even in well-established palliative care programmes. Some of these sites have implemented quality improvement initiatives which have resulted in expanded access and better quality services.

Recommendations Conducting standards audits and implementing quality improvement plans are essential for ensuring better outcomes of care for cancer patients and family members. The standards should be revised to cater for new developments in palliative care and cancer care.

POSTER

Kiyange, Fatia

P292 | THE ROLE OF SOUTH-TO-SOUTH PARTNERSHIPS IN DEVELOPING CANCER SERVICES IN AFRICA

**POSTER
SESSION**

TWO

16:30–18:00

Thursday

9 November

Kiyange, Fatia¹; Walusansa, Victoria²; Madonsela, Gugulethu³; Kambale, Herve Nzereka³; Luyirika, Emmanuel¹; O'Brien, Meg¹
¹African Palliative Care Association; ²Uganda Cancer Institute; ³Ministry of Health Swaziland; ⁴American Cancer Society

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Background Despite being a growing public health concern in Africa, access to effective cancer treatment and pain relief is still limited in Sub-Saharan Africa. The African Palliative Care Association (APCA) in collaboration with the American Cancer Society (ACS) and the Ministry of Health of Swaziland have successfully implemented a South-to-South partnership, which has facilitated the development and operation of a cancer unit in Mbabane Government National Referral Hospital in Swaziland.

Problem Although the cancer burden continues to rise in Africa, a number of countries do not have established oncology services. They are relying on cancer treatment, care and support through referral to neighboring countries or oversees which is costly for governments and poses multiple challenges for patients and their families. Until recently, the Kingdom of Swaziland has relied on cancer treatment, care and support from South Africa. This paper presents a model where the Uganda Cancer Institute (UCI) has been facilitated to support the establishment of a cancer unit in Swaziland.

Objective the intervention aimed at providing technical assistance to the Ministry of Health of Swaziland towards the initiation and operation of a cancer unit in Mbabane Government Hospital through a formal arrangement with the UCI.

Methodology Between December 2015 and December 2016, the APCA through a grant from the ACS formerly engaged the UCI to support the initiation and operation of a cancer unit in Swaziland. This was through expert exchange visits which incorporated on-job training and mentorship provided to a team of staff at Mbabane Government hospital, with coordination by the Swaziland Ministry of Health. Experiential visits to Uganda were also organized for the lead pharmacist in Swaziland and a General Practitioner Doctor to enable them set up and run a cancer unit in their country. The exchange visits provided a forum for both observation and application of knowledge and skills.

Results A cancer unit was successfully established at Mbabane Government Hospital in Swaziland, which provides services for patients, primarily with breast cancer and expanding to include other cancers. The Swaziland Ministry of Health has been central to the success of this development and continues to identify human, financial, and other resources to sustain the new cancer unit.

Conclusion There are many opportunities for South-to-South partnership to support the establishment or improvement of cancer care. This model implemented in Swaziland can be replicated in other African countries.

Recommendations for research Documenting the model for replication in other countries.

PRESENTATION

PALLIATIVE CARE & OTHER ABSTRACTS

14:40–16:30

Wednesday

8 November

Kiyange, Fatia

PREVALENCE AND FACTORS ASSOCIATED WITH DOMESTIC VIOLENCE AMONG PALLIATIVE CARE PATIENTS: A SYSTEMATIC REVIEW

Kiyange, Fatia¹; Cunningham, Colette²

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Background Domestic violence (DV) is a well-documented public health issue amongst the general population but less well-documented in relation to specific populations such as palliative care patients. Where studies do exist, they are predominately focused on developed countries (USA, Japan, and UK) and there are none from low –and middle-income countries, particularly Africa. This study reviewed all literature relating to domestic violence and palliative care.

Aim The objective of the review is to synthesize the best available evidence regarding the prevalence and predisposing factors associated with domestic violence among adult palliative care patients aged 18 years and over.

Methods A systematic review of the literature including four databases: PubMed, PsycINFO, CINAHL and SCOPUS (between 28 and 30 September 2015), using detailed search strategies and reference list cross-checking was done. Cohort, case studies, cross-sectional, correlational or observational study designs were included with randomized controlled trials being excluded. Two assessors reviewed the titles, abstracts and full articles using standardised critical appraisal and data extraction forms and assessed study quality.

Results All eleven studies in this review demonstrate that domestic violence is prevalent among palliative care patients. Nine of the 11 studies focused on cancer patients while two focused on the broader palliative care and/or hospice patients. The forms of violence reported are: mental, physical, emotional, psychological, financial, verbal and sexual abuse. Ten of the 11 studies describe the factors associated with domestic violence among palliative care patients: vulnerability from the disease and treatment; pre-existing violence; abuse of power and control; role changes and the type of cancer site.

Conclusions Although research is still limited on domestic violence among palliative care patients globally, and especially in Africa, available studies highlight that it is prevalent in this patient population. These studies are based on small homogeneous samples, are disease specific and lack scientific rigour. There is need for more inclusive and rigorous research on this issue especially in Africa and other developing countries. Being an emerging and critical issue, domestic violence requires more in-depth exploration to ensure that appropriate interventions are developed to support patients and enhance their quality of life. Routine assessment, management and documentation of psychosocial problems such as domestic violence in the families of palliative care patients can improve their quality of life and increase available evidence.

POSTER

WELCOME
RECEPTION
AND POSTER
SESSION ONE
16:30–18:00
Tuesday
7 November

Kiziri Mayengo, Rebecca

P054 | ASSESSMENT OF CLINICAL AND PSYCHOLOGICAL NEEDS OF METASTATIC BREAST CANCER PATIENTS, CHALLENGES AND GAPS IN MEETING THEIR NEEDS IN AFRICA, UGANDA

Kiziri Mayengo, Rebecca¹; Dungu, Henry²; Nakigudde, Gertrude¹; Kumaketch, Edward³

¹Uganda Womens Cancer Support Organisation; ²Uganda Cancer Institute;

³Marie Stopes International Uganda

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Background Uganda has one of the highest age-standardized incidence rate for breast cancer of 38.3/100,000 occurring among women 35-45 years. The disease is associated with increased biomedical and psychological demands on affected women, their families. Clinical and supportive care services are offered to Metastatic Breast Cancer (MBC) patients to meet these needs, improve survival and quality of life. However, the existence of barriers to healthcare access and challenges affect the satisfaction of MBC patient's need and imply that the available services cannot meet every clinical and psychological need of MBC patients. There is no previous assessment has been done in Uganda on the clinical and psychological needs of MBC patients.

Aim To generate data that can be used to increase awareness about the unmet clinical and psychological needs of metastatic breast cancer patients (MBC) patients and families to inform Advocacy strategies for their supportive care services in Uganda.

Methodology Interviews, In-depth interview, Focus group discussion and document review.

Participants: MBC patients (N=67), survivors (N=185), Clinical providers (N=24), family (N=134) and VHT (N=12).

Results The patient's most important needs include physical and daily living needs (relieving pain=85.69%)

POSTER

Korubo, Kaladada

P448 | CHALLENGES IN THE DIAGNOSIS AND TREATMENT OF CHRONIC LEUKAEMIAS IN A RESOURCE POOR CENTRE

**POSTER
SESSION
TWO**

16:30–18:00

Thursday

9 November

Korubo, Kaladada¹; Nwauche, Chijioke A.¹; Ezenwa-Ahanene, Chidiadi¹; Ekeh, Uchechi¹; Jibiro, Peace¹

¹University of Port Harcourt Teaching Hospital

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Background The accurate diagnosis of chronic leukaemias requires some methods that are not readily available in our environment. This also impacts on therapeutic options as some drugs used in the treatment of these disorders are targeted therapy.

Methods This was a fourteen year retrospective study conducted at the University of Port Harcourt Teaching Hospital from June 2003 to June 2017. Data was extracted from patients' folders and analyzed with SPSS software version 21.

Results Out of 258 patients with haematological malignancies, 78 (30.2%) had chronic leukaemias of which 52 (20.2%) were chronic myelocytic leukaemia (CML) and 26 (10.1%) were chronic lymphocytic leukaemia (CLL) cases. The median age of diagnosis was 36.5 years for CML and 58 years for CLL. Late presentation was common in both groups- CML patients had a mean duration of 14.3 (± 16.2) months and for CLL it was 6.7 (± 7.4) months before presentation. Splenomegaly and anaemia were commonly seen at diagnosis in CML (86.5% and 78.7%) and in CLL (73.1% and 92.3%) respectively; 73.1% of CLL patients had lymphadenopathy. For CML the mean haemoglobin, white blood cell (WBC) and platelet counts at diagnosis were 8.5 (± 2.5) g/dL; 259.4 (± 242.0) X10⁹/L and 346.3 (± 304.6) X10⁹/L; in CLL patients they were 8.1 (± 2.3) g/dL; 161.1 (± 160.4) X10⁹/L and 129 (± 75.6) X 10⁹/L respectively. Bone marrow examination was done for 9 (17.3%) CML cases and 6 (23.1%) CLL cases. More than half (n=29, 55.8%) cases of CML had BCR/ABL analysis done and were commenced on tyrosine kinase inhibitors, however only 2 (7.8%) of CLL cases had immunophenotyping done. No CLL patient had any molecular testing done. The commonest chemotherapeutic regimen for CLL patients was chlorambucil and prednisolone (50%) followed by cyclophosphamide, vincristine and prednisolone (19.2%). The 5 year overall survival (OS) for CML patients was 95.9%, those with WBC >100 X10⁹/L at diagnosis had a 5 year OS of 94.4%. Patients with CLL had a 5 year OS of 81.1%, however those with WBC >100 X10⁹/L at diagnosis had a lower 5 year OS of 63.6%.

Conclusion Majority of CML patients had molecular diagnosis and received therapy with TKIs which is the standard of management worldwide. On the other hand, diagnosis and treatment of patients with CLL is still far behind compared to practice in the western world. Upgrading the diagnosis and treatment of CLL patients may improve their overall survival.

POSTER

WELCOME
RECEPTION
AND POSTER
SESSION ONE

16:30–18:00

Tuesday

7 November

Kotila, Olayinka

P082 | PHARMACEUTICAL NON-EQUIVALENCE OF CYCLOPHOSPHAMIDE GENERIC BRANDS IN SOUTHWEST NIGERIA – A LURKING DANGER

Kotila, Olayinka^{1,2}; Chuido, Emeka G.¹; Babalola, Chinedum P.^{1,2}
¹University of Ibadan; ²Centre for Drug Discovery, Development and
Production

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Pharmaceutical non-equivalence of anticancer drugs such as cyclophosphamide, might lead to therapeutic failure due to drug resistance and/or sub-therapeutic plasma concentrations. Patented anticancer medications are expensive and prohibitive, thus favouring the proliferation of low cost generic brands. Cyclophosphamide, an alkylating anticancer drug stands as one of the most employed drugs in management of various cancer types. It could either be used alone, or in combination with other anticancer drugs as employed for treatment of breast cancer, leukemia and ovarian cancer. It also can be used in treatment of nephrotic syndrome – a kidney problem in children.

Four generic brands of cyclophosphamide powder for injection obtained from pharmacies within Ibadan were assayed for percentage content using high performance liquid chromatography, amongst other compendia tests. The results were statistically tested using one-way ANOVA.

There was significant difference ($p < 0.009$) in the content of cyclophosphamide (87.6–104.5%) across all four brands. Only one of the brands (25%) was registered by the National Agency for Food and Drug Administration and Control (NAFDAC) and this was the only brand that met compendia specifications despite all four brands selling for the same price.

This outcome raises concern as it indicates significant variation in the chemical content of the active principle being delivered to unsuspecting patients. It also refutes the concept of cost being evenly related to drug quality. If interventions are not rapidly implemented, drug resistance cum therapeutic failure is very likely to emerge and become an additional burden to the already challenged healthcare system.

PRESENTATION

PALLIATIVE CARE & OTHER ABSTRACTS

14:40–16:30

Wednesday

8 November

Krakauer, Eric

THE LANCET COMMISSION ON GLOBAL ACCESS TO PALLIATIVE CARE AND PAIN CONTROL: FINDINGS AND RECOMMENDATIONS

Krakauer, Eric¹; Knaul, Felicia²; Kwete, Xiaoxiao³; Bhadelia, Afsan⁴; Arreola, Hector⁵; Jamison, Dean⁶; Commissioners, Lancet Commission on Global Access to Palliative Care⁷

¹Harvard Medical School; ²University of Miami; ³Harvard School of Public Health; ⁴Johns Hopkins University; ⁵Fundacion Mexicana para la Salud; ⁶University of Washington; ⁷University of Miami

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The Lancet Commission on Palliative Care and Pain Control (the Commission), chaired by Prof. Felicia Knaul, characterized and roughly estimated the global burden of health-related suffering (GBHS) and created an essential package of palliative care to address this suffering. To roughly estimate GBHS, we identified the 20 serious, complex or life-limiting ICD-10 conditions that most commonly result in physical, psychological, social, or spiritual suffering. We then estimated the types, prevalence and duration of suffering from each condition. The 20 conditions account for 82% of global deaths and 80% of deaths in LMICs. Based on mortality figures for 2012 and our estimates, at least 53.2 million people per year with these conditions in low and middle income countries (LMICs) have health-related suffering requiring palliative care. Based on the burden of suffering characterized in this way, we developed an essential package (EP) of palliative care and pain control designed to prevent or relieve the most common and severe suffering related to illness or injury, to be cost effective even in low and middle income countries (LMICs), to help strengthen health systems, and to provide financial risk protection for patients and families. The EP consists of 21 inexpensive essential medicines, 6 inexpensive pieces of equipment, the human resources required to administer the EP at each level of healthcare systems, and 5 types of social supports for patients and family caregivers living in extreme poverty. To determine the cost of delivering the EP in a specific country, we identified the unit price of all medicines, equipment, social supports, and monthly salaries of the required palliative care providers from that country. To provide examples for policy makers of the expected cost of the EP in low-income, low-middle income, and high-middle-income countries, we applied our method in Rwanda, Vietnam and Mexico. Universal access to the EP would require a much higher share of total government expenditure on health in Rwanda (7.6-10.2%) than in either Vietnam or Mexico (less than 1.3%). As a proportion of GDP, the cost of the EP also would be higher in Rwanda (0.25%) than in Vietnam or Mexico (0.03%). The social supports would constitute a small fraction of the EP for Vietnam (10%) and Mexico (5%) but would cost more than the rest of the EP for Rwanda. Costs would be reduced significantly if countries had access to best-case international prices for all medicines including morphine which remains expensive for LMICs.

POSTER

Kuti, Modupe

P294 | THE TOP 25 DIAGNOSTIC TESTS: COMPARING HOSPITALS IN FOUR COUNTRIES

**POSTER
SESSION
TWO**

16:30–18:00

Thursday

9 November

Kuti, Modupe¹; Sayed, Shahin²; Wilson, Michael³; Loi, Lai-Meeng⁴;
Pai, Sanjay⁵; Horton, Susan⁶

¹University of Ibadan; ²Aga Khan University; ³University of Colorado;

⁴University of Malaya; ⁵Columbia Asia Referral Hospital; ⁶University of Waterloo

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Background Despite the importance of diagnostic testing for the health system, there are few systematic cross-country studies on patterns of diagnostic use, which limits the information available for health policy formation.

Objectives We aim to increase understanding of the similarities and differences in diagnostic testing in hospitals in very different settings.

Methods This study compares the volume of laboratory tests in six different hospitals in four countries, ranging from low, lower-middle, upper-middle and high income countries, and representing both public and private institutions. We obtained information on the most commonly-used tests, and the numbers of each test run in a recent calendar year, for each hospital. We compared the “top 25” tests across all the hospitals, and also compared the total volume of “top 25” tests per year, with the number of beds per hospital. We also use some economic data to examine how volumes and costs differ.

Results The most common tests are surprisingly similar across all settings, with over two-thirds of the tests being the same when comparing pairs of hospitals. There are some differences attributable to different epidemiologies. Tests for major infectious disease (malaria, TB) are more prominent in sub-Saharan Africa, and for dengue in India, while tests for cardiovascular conditions are more prominent as income increases. Testing for hemoglobinopathies is more prominent in the hospital in Nigeria, for *H. pylori* in Nairobi, for vitamin B-12 deficiency in India, and for drugs of abuse in the US, reflecting specific local epidemiological concerns. In most hospitals studied, all the main divisions of pathology are represented: biochemical, hematological, microbiological and anatomic, with biochemical and hematological tests dominating the numbers. The top 25 tests account for close to three-quarters of all tests run at all the hospitals studied, but a smaller proportion of the expenditures on tests.

Data on numbers of tests per year, per bed, need to be interpreted a little carefully. The ratio of outpatients to inpatients differs across hospitals, since some have greater outreach activity, and all these hospitals also receive referred samples for specialized tests from other health facilities. The data suggest that tests per bed are lower in public than private hospitals, and that the number of tests per bed is particularly low in settings where patients must pay out of pocket for tests.

Conclusions Comparing the “top 25” tests provides some surprisingly useful and interesting insights both for clinicians and for health policymakers.

PRESENTATION

Kwagonza, Leocadia

EPIDEMIOLOGIC CHARACTERISTICS OF TOP FIVE CANCERS IN MEN AND WOMEN IN KAMPALA, UGANDA

EPIDEMIOLOGY

ABSTRACTS

14:40–16:30

Wednesday

8 November

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Background Kampala Cancer Registry was established to provide the much needed comprehensive data on the burden and trends of cancer to guide decisions on prevention and treatment policies, strategies and interventions in Uganda. We analyzed data from the registry for the period 2009 to 2013 to demonstrate the distribution of the top five cancers, and to describe cancer diagnostic capacity.

Methods Kampala Cancer Registry collects data on cancer from health facilities, pathology laboratories and other available sources on the population of Kyadondo County, which includes Kampala the Capital of Uganda and its rural part of Wakiso hinterland. The data is entered into the CANREG cancer registration system. We extracted data from the CANREG system and entered into EPI Info V7.2 for analysis. We calculated incidence by dividing the number of cases of a particular cancer by the population at risk per 100,000 using population projections from 2002 census. Percentage morphological verification was obtained by dividing the number of cases of a particular cancer diagnosed microscopically by the total number of cases diagnosed.

Results A total of 8168 new cancer cases were registered, with 55% (4522/8168) females. Among males, the incidence of prostate cancer increased with increasing age (4/100,000 among 30–39 years compared to 4617/100,000 among 60+ year olds). Kaposi Sarcoma affected mainly the mid age groups, with an incidence of 266 per 100,000 populations. In males, cumulative incidence was Prostate (18), Kaposi Sarcoma (11), Esophagus (6), Leukemia (3) and Liver (3).

Among females, incidence per 100,000 Population was – Cervix (20), Breast (12), Kaposi Sarcoma (11), Esophagus (3) and Ovary (3). The overall percentage Morphological Verification was 54.3, with Kaposi Sarcoma having the highest at 70% while Leukemia had the lowest (29%).

Conclusion There is a high incidence of prostate and Kaposi Sarcoma among males, and breast and cervical cancers among females. There is need to scale up, or fast track preparation of more cancer treatment centers in the country to respond appropriately to the increasing cancer burden.

PRESENTATION

Ladner, Joel

IMPACT OF SUPPLY CHAIN ON PATIENT OUTCOMES IN A CANCER DRUG ACCESS PROGRAM IN 18 SUB-SAHARAN AFRICAN COUNTRIES

CANCER
ADVOCACY
& OTHER
ABSTRACTS

11:00–12:30

Thursday

9 November

Ladner, Joel¹; Audureau, Etienne²; Boss, Henrietta³; Rodrigues, Mariana³; Saba, Joseph³

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Objective This study assessed the impact of drug availability and stock management accuracy on patient outcomes in an access to cancer drug program in sub-Saharan African countries.

Method The study measured the ratio of actual (A) drug treatment units ordered to expected (E) units needed by patients with chronic myeloid leukemia enrolled in the program (A/E in %). This number was calculated per year and per program over the study period. An A/E <100% indicated a possible insufficient level of stock and forecasting errors by the program managers. An A/E >100% indicated an order of additional stock by the program managers higher than expected treatment needs. Mean and median A/E values were computed for each program over the study period. Patient outcomes were analyzed using Cox proportional hazards multivariate regression based on patient active status in the program as a proxy for survival.

Results Between 2003 and 2010, 1,808 patients were included in 18 sub-Saharan African countries. Average A/E value across programs was 95.6% (± 29.4 standard deviation; interquartile range 75.1–107.7), with 4 programs (22%; 901 patients) having a mean A/E value below 75%. Multivariate survival analysis revealed the independent prognostic value on patient survival of the capacity of a program to appropriately manage the supply chain, as indicated by the worse survival found in patients from programs with decreased mean A/E ratios (A/E 75–100%: Hazard ratio [HR] = 1.52 [1.10–2.10]; A/E <75%: HR=1.86 [1.39–2.49]; $p < 0.0001$), even after adjusting for individual patient's characteristics (age >55y: HR=1.65 [1.35–2.02], $p < 0.0001$; CML accelerated form: HR=2.50 [1.51–4.17], $p = 0.0004$) and hospital-level factors (number of patients enrolled per year <2: HR=1.99 [1.36;2.90], $p < 0.0001$). Similar results were found when assessing the median A/E value (A/E 75–100%: HR=1.21 [0.66–2.21]; A/E <75%: HR=1.67 [1.00–2.82]; $p = 0.007$).

Conclusions As no comparable alternative drug treatment was available for chronic myeloid leukemia in the selected countries included in this research, the direct supply chain impact on medical outcomes could be measured clearly. The findings of this research highlight the critical role supply chain management plays in successful patient follow-up outcomes in the context of access to medicine initiatives. The supply chain capacity of future access to medicine programs should ensure adequate treatment stocks to help optimize outcomes for patients in the developing world. Particularly in the context of chronic treatments, it is as important to focus on proper supply chain management of medicines as addressing diagnostic and financial barriers.

POSTER

WELCOME RECEPTION AND POSTER SESSION ONE

16:30–18:00

Tuesday
7 November

Lara Santos, Lucio

P024 | MOLECULAR HETEROGENEITY IN BREAST CANCER. STUDY OF A CONSECUTIVE SAMPLE OF ANGOLAN PATIENTS. WHAT IMPLICATIONS?

Lara Santos, Lucio¹; Vieira Lopes, Lygia³; Ferreira, Eduardo⁴; Salamanca, Paulo²; Fuentes Pelaez, Alexis²; Miguel, Fernando²

¹Instituto Português De Oncologia; ²Instituto Angolano de Controlo do Cancer;

³Clinica Sagrada Esperança; ⁴Laboratório Eduardo Ferreira

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Breast cancer is a heterogeneous disease, with multiple histopathological forms, different responses to therapy and distinct evolutions. Molecular characteristics have determined treatments and different specific survivals. What will be the predominant molecular profile in Angola.

Objective The objective of this study was to know the molecular subtypes of breast cancer in a consecutive sample of Angolan patients according to the expression of hormone receptors, Ki-67 and HER2.

Methods From January 2011 to December 2014, 140 consecutive cases of invasive breast carcinoma were classified according to histology and phenotype (ER, PR, HER2 and Ki-67). Molecular subtypes according to phenotype were classified according to ESMO recommendations.

Results All patients were female. The median age was 47 years (24–84 years). Invasive ductal carcinoma was the most common type (91.4%), moderately differentiated tumors predominated (70.7%). The majority of the tumors were locally advanced (stage III – 65% and stage IV – 3.6%). In 140 studied cases, 74 (52.8%) of the neoplasms had positive hormone receptors; 25.7% were Luminal A; 19.3% were Luminal B and HER2 negative; 7.9% were Luminal B and HER2 positive; 15.7% were HER2 positive; and the remaining 31.4% were triple-negative.

Conclusion Breast cancer in Luanda-Angola is diagnosed in young women and in an advanced stage. The predominant molecular subtypes were Luminal (A and B) and triple negative. The percentage of cases with HER2 amplification was high. Thus, the determination of molecular subtypes using immunohistochemistry and CISH techniques has important therapeutic and prognostic implications for Angolan women with breast cancer. It is essential to create laboratory conditions and to adjust treatments.

POSTER

WELCOME RECEPTION AND POSTER SESSION ONE

16:30–18:00

Tuesday

7 November

Lara Santos, Lucio

P073 | PRELIMINARY EVALUATION OF THE CANCER REGISTRY OF THE AGOSTINHO NETO HOSPITAL IN CAPE VERDE

Lara Santos, Lucio¹; Barbosa, Carla²; Teixeira, Eliseu²; Costa, Vitor²;
Carlos Ferreira, João²; Borges Spencer, Hirondina²

¹Instituto Português De Oncologia; ²Hospital Agostinho Neto

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Introduction Population-based cancer registries aggregate all cases of a given population. These data are fundamental tools for the planning and evaluation of primary and secondary prevention, define the resources, types of treatment and know the survival rates for their cancer. Hospital-based cancer registries maintain data on all patients diagnosed and/or treated for cancer at a particular facility and are crucial sources of information for population-based cancer registries. The Oncology Service of the Agostinho Neto Hospital (ANH) in Cape Verde, is developing its cancer registry, in order to participate in the cancer registry of Cape Verde, which is a fundamental instrument to develop the cancer plan.

Objective To evaluate the quality of the preliminary data of the HAN hospital cancer registry.

Methodology From 1990 to 2014, 730 records were studied. Information deficits and the prevalent malignant tumours were retrospectively evaluated. The analysed data were: year of diagnosis, age, gender, place of birth and residence, organ reached, histological type and percentage of missing data.

Results Of the records studied, 57.1% of the patients were from Santiago, 13.7% had no reference to birthplace. The place of residence was not registered in 19.3% of the cases. Regarding gender, 67.5% were women and 31% were men, but it was observed that in 1.5% of records there was no gender reference. The percentage observed in the different age groups was: <25 years-1.7%; 25–44 years -14.7%; 45–64 years-43.4%, > 65 years-29.8%. In 10.3% of cases the age were unknown. The most frequent malignant tumours were: Breast (27.8%), Cervix (12.6%), Prostate (7.4%), Stomach (6.8%) and Colorectal (6.8%). The histological confirmation rate was 62.7%. Missing data are less frequent in recent years.

Discussion The quality of the cancer registry of the Agostinho Neto Hospital has been improving, since the missing data has been progressively decreasing. However, it is necessary to set up a dedicated cancer registry service, with a team that also participates in the population-based cancer registry. It is necessary to optimize the pathological cancer registry. Cancer registration should be mandatory in the Agostinho Neto hospital.

Conclusion The evaluation of the quality of the ANH cancer registry revealed that it is necessary to have a dedicated team, increase the rate of cancer histological confirmation and drastically reduce missing data. The most common malignant tumours are Breast, Cervix, Prostate, Stomach and Colorectal.

POSTER

WELCOME RECEPTION AND POSTER SESSION ONE

16:30–18:00

Tuesday

7 November

Lara Santos, Lucio

**P083 | TEACHING AND MENTORING PHARMACY TEAM IN
ONCOLOGY PHARMACY UNITS. EXPERIENCE IN ANGOLA,
MOZAMBIQUE AND CAPE VERDE**

Lara Santos, Lucio¹; Bessa, Fernanda¹; Monteiro, Fernando¹;
Barreira, Leonardo¹; Bernardo, Dora¹

¹Instituto Português De Oncologia

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Introduction African lusophone countries are gradually shifting from increased exposure of infectious diseases to a higher prevalence of noncommunicable diseases. Therefore, the rate of cancer increases in Angola, Mozambique and Cape Verde. This epidemiological transition needs specific facilities, knowledge and training since hazardous drugs, like cytotoxics are the backbone in the treatment of advanced tumors, which are the main diagnostic stage in these countries.

Objectives Describe teaching and mentoring methodology in oncology specialization of Pharmacy teams in these lusophone countries.

Methods Formation plan include: theoretical and practical on-site courses for staff training overseas (phase 1 – basic and phase 2 – advanced) and training of future local trainers in Portuguese expert Oncology Pharmacy Unit (OPU) (phase 3). Teleconference support was developed to promote good practices of oncology pharmacy and mentoring. Phase 4 includes an audit. Evaluation was always conducted in each phase.

Results Angola: Phase 1, 2 and 3 were already implemented. 2 new Oncology Pharmacy Units started up and compounded cytotoxics has been delivered in accordance with best-practice. Mozambique: a new OPU is in construction and formation still ongoing (Phase 1).

Discussion Training Pharmacy staff according international guidelines need a direct approach in order to induce a real transformation, which is not limited to technological updating but also to improve local efficiency taking in account local realities. A final evaluation on the content covered was conducted in each phase, allowing readjustment of training in the next phase to specific needs of each different team. In Angolan team, for instance, was decided to implement an additional training overseas in order to achieve better support during the start-up of the OPU. Teleconference was implemented in order to maintain a continuous education and practical support.

Conclusion The aims of education program were perceived. Hazardous drugs should be handled under conditions that can promote patient and worker safety with environmental protection. Thus, investment in training staff, in local trainers, equipment and facilities is required. Continuous teaching and monitoring is essential to assure support and reinforce good practices and the safety of all involved.

POSTER

WELCOME RECEPTION AND POSTER SESSION ONE

16:30–18:00

Tuesday

7 November

Lara Santos, Lucio

P185 | OUTCOMES OF COLORECTAL LIVER METASTASES TREATMENT: LONG-TERM IMPACT OF MULTIDISCIPLINARY APPROACH

Lara Santos, Lucio¹; Manuel Fernandes, José¹; Dias, Susana¹; Fragoso, Maria¹; Gonçalves, Belarmino¹; Sousa, Fernanda¹

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Introduction A total of 30 to 50% of patients with a colorectal cancer (CRC) will develop either synchronous or metachronous liver metastases being the main cause of death in these patients. The cure of such patients is possible when multimodal treatment strategies involving systemic therapy, ablative techniques and surgical treatment were performed. Improvements in patients' selection, imaging staging, surgical, percutaneous, endovascular and endoscopic techniques, and the integration of a more precision oncology, have improved the resectability rate. Intra tumor heterogeneity (genetic, molecular and metabolic) may determine treatment response. Thus, this information should be present in the dedicated multidisciplinary team (MDT) when deciding the best treatment.

Objective To assess the impact of dedicated MDT on the overall survival of liver metastasis.

Methods A cohort of 225 consecutive patients from Portuguese Institute of Oncology in Porto, Portugal was divided in three different groups: Group A treated by a general surgical team after digestive tract MDT decision strategy (between 1997 to 2002); Group B treated by liver surgeons after digestive tract MDT decision strategy (2003 to 2009) and the last Group C treated by the same liver surgeons after a dedicated hepatobiliary and pancreatic MDT decision treatment and strategy which translates into clinical practice the evolution of chemotherapy and other new therapeutic options for patients with metastatic CRC (2010 to 2011). Comparison of survival between groups was performed using Kaplan-Meier curves and estimating age-adjusted hazard ratios.

Results The median survival time increased from 26 months (1997–2002) to more than 60 months (2010–2011) ($p < 0.001$). When comparing to the group A of patients, patients from the group B had 58% less age-adjusted hazard of dying (HR=0.42; 95% CI: 0.29–0.62) and patients from the most recent group C had 72% less hazard (HR=0.28; 95% CI: 0.17–0.46).

Conclusions Hepatobiliary and pancreatic multidisciplinary team is a group of health care workers who are members of different disciplines which provide specific care to the patient. The multidisciplinary treatment approach, that defines the best and personalized treatment, is consistently more effective with significant improvement in overall survival.

PRESENTATION

Lara Santos, Lucio

TAKE HOME MESSAGE: PALOP SCHOOL OF ONCOLOGY IT'S A NEED

Lara Santos, Lucio^{1,2}

¹Portuguese Institute of Oncology; ²ONCOCIR – Education and Care in Oncology – PALOP – Lusophone Africa

PALOP

14:40–16:00

Friday

10 November

Correspondence llarasantos@gmail.com

Portuguese-speaking African Countries (PALOP) need oncology specialists such as doctors, nurses, pharmacists and other health professionals. We intend that The PALOP School of Oncology be a reality and brings together professional education, practice training and provides a platform for the growth and development of cancer education in the Portuguese-speaking African Countries. This School of Oncology will strive to deliver education to all grades of staff involved in cancer care delivered through multi-professional and interdisciplinary approaches. We would like that The PALOP School of Oncology will be recognized by AORTIC.

School of Oncology core principles will be:

- Education will be offered by the school, internally in each PALOP country and externally (transversal), will be of the highest standards, evidence based, and adhere to each national and local educational governance standards
- The school will be a multi-disciplinary; providing education and training opportunities to fundamental disciplines of cancer health professionals
- The school will provides academically accredited education programmes through partnerships with higher educational and oncologic institutions
- The school will be committed to innovation in cancer education
- The school will support the time and training of staff to become leading cancer educators School of Oncology
- ensure that PALOP school of oncology became crucial instrument for the training and development of all grades of cancer providers (including students and trainees)
- Be a recognised centre for cancer education in PALOP region
- Be a recognised centre for cancer education internationally

POSTER

WELCOME RECEPTION AND POSTER SESSION ONE

16:30–18:00

Tuesday

7 November

Lawal, Ishak

P186 | LACK OF BIOPSY SERVICES IN THE ROUTINE GYNAECOLOGY CLINICS A BARRIER TO SUCCESSFUL CANCER CAMPAIGN

Lawal, Ishak¹; Atiku-Bagudu, Zainab²; Omoleke, Sameeh, Akinwale³; Olatunji, Ganiyat¹

¹Nigerian Cancer Society; ²Medicaid Cancer Foundation;

³World Health Organization

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Background Late presentation, late diagnosis and late intervention are characteristic problems of cancer in the developing countries. To this end, there has been a significant increase in public awareness campaign on cancer in Nigeria in recent times. However, the laudable efforts towards increasing public awareness of cancer will be in vain, if facilities for diagnosis and management are not readily available to clinicians. We present our observations with regard to management of suspected cervical cancer cases during our planning of a comprehensive cervical cancer screening program for Kebbi state.

Aims and Objectives To project the possible negative impact of increase public awareness of cancer without appropriate intervention services; and to advocate for proactive management of suspected cervical cancer

Materials and Methods Nigerian Cancer Society Kebbi through a seed grant from American Cancer Society planned and advocated for a comprehensive cervical cancer prevention program for Kebbi state. The planning involved extensive literature review and strategic assessment of the capacity of facilities in Kebbi state to support cervical cancer prevention services. The entire planning was based on the model proposed by the Alliance for Cervical Cancer Prevention (ACCP), while the strategic assessment adapted the WHO's strategic assessment for reproductive health services, as was done in Peru and Bolivia.

Findings The challenges of planning a comprehensive cervical cancer prevention program in Kebbi state are not different from the well documented problems associated with low resource settings. Specifically, we found a weak health system which can however be innovatively adapted to effectively incorporate comprehensive cervical cancer prevention. The healthcare system in the state is structured along Primary, Secondary and Tertiary health system. There are 94 primary, 32 secondary and 2 tertiary healthcare facilities in Kebbi state unfortunately not a single colposcope nor organized cervical cancer screening program exist in the state, hence screen positive patients are left with option of cold knife biopsy or hysterectomy. Furthermore, the observed enthusiasm of religious organizations and office of the first lady of the state are invaluable resources that can be leveraged to improve uptake of cervical cancer screening in the state.

Conclusion In our setting, there is a huge deficit in biopsy services in clinics for suspected cervical cancer cases. Consequently, there is increasing presentation-diagnosis interval with overall negative impact on burden of the disease. Therefore, we advocate pre-positioning of basic cervical cancer biopsy services in all gynaecological clinics.

POSTER

WELCOME RECEPTION AND POSTER SESSION ONE

16:30–18:00

Tuesday

7 November

Lawan, Aliyu

P435 | CHANGED TRENDS OF URINARY BLADDER CANCERS AT THE UNIVERSITY COLLEGE HOSPITAL, IBADAN

Lawan, Aliyu^{1,2}; Ogun, Gabriel²; Okolo, Clement²; Ogunbiyi, John²
¹Federal Teaching Hospital / Gombe State University; ²University College Hospital

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Objective To describe the incidence, histological morphology, location and stage at presentation of Urinary bladder cancers.

Methods In this retrospective study, we reviewed two hundred and fifty-seven of the four hundred and sixty-nine urinary bladder biopsies which were submitted to the Department of Pathology, University College Hospital, Ibadan over a twenty-four-year period (January 1990 to December 2013). The archival histological slides were reviewed while new sections were made from the PFPE blocks where slides were not available. The clinical details were retrieved from the patients' case notes and request cards. The diagnoses were reviewed where necessary and reclassified according to the 2004 World Health Organization Classification for urinary bladder neoplasms.

Results Malignant urinary bladder cancers are not uncommon. These neoplasms comprised urothelial carcinoma (63.8%), squamous cell carcinoma (15.6%), adenocarcinoma (6.6%), embryonal rhabdomyosarcoma (5.1%) and secondary cancers (8.9%). There was a strong association between schistosomiasis and squamous cell carcinoma. Over sixty percent of patients presented with pT2 and above stage of disease. Most of the tumours are multifocal.

Conclusion This study confirms a changed trend in the pattern of vesical malignancy in Ibadan, Nigeria from squamous cell carcinoma to urothelial carcinoma. This could be attributed to increase public health measures to decrease incidence of Schistosomiasis. Most of these tumours are multiple and present at stage pT2 and above.

PRESENTATION

PAEDIATRIC ONCOLOGY & OTHER ABSTRACTS

13:30–14:30

Thursday

9 November

Lawler-Heavner, Janet

CAPACITY BUILDING IN LOWER- AND MIDDLE-INCOME COUNTRIES: WHAT HAPPENS WHEN THE STUDY ENDS?

Lawler-Heavner, Janet¹; Brotzman, Michelle¹; Robinson, Detra¹;
Rosenthal, Jeanne¹; Mbulaiteye, Sam²

¹Westat; ²National Cancer Institute

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Initiating collaborative research in resource-poor settings usually involves 1) establishing human resources to meet staffing needs in frequently remote locations; 2) providing a technical framework and training (including state-of-the-art equipment, communications methodology, and backup systems); and 3) establishing the requisite institutional infrastructure. These requirements can be particularly daunting when initiating a multi-site study across international boundaries.

Westat supported the implementation of the Epidemiology of Burkitt Lymphoma in East-African Children and Minors (EMBLEM) study, which ultimately demonstrated the feasibility of such an endeavor with six networked sites in three countries (two each in Uganda, Kenya, and Tanzania). Although the study recently ended, the question that remains for EMBLEM and other such studies at their conclusions is how to both sustain the scientific momentum and leverage the established infrastructure into future research.

Although substantial investments to implement large research studies such as EMBLEM typically succeed in terms of immediate fieldwork goals, the absence of parallel linked efforts to address sustainability undermines the chances of lasting impact. There is often no linked budgetary support for higher level training so that local staff can obtain the skills required to conceive, plan, and lead their own studies based on the established infrastructure. Without a clear pathway for career growth, staff use their newly acquired skills to seek higher paying positions in funded or private projects elsewhere.

Developing a research team with the both the skills to implement fieldwork and the conceptual skills and confidence to propose and apply for independent funding often requires longer than the lifespan of the fieldwork for a research study. Also, absence of linked budgetary support for higher-level training creates an atmosphere of research that is short-term, fieldwork-focused, and ends when the fieldwork ends, resulting in dispersal of local staff and degradation of established infrastructure.

Given that research funding entails substantial investment, creative thinking about sustainability includes a willingness to pool physical, fiscal, and human resources to establish collaborative mentoring networks across institutions and, sometimes, across international boundaries. Ideally, this will include establishing tangible mentored junior investigator pathways to large funded research projects. We will discuss the Westat experience of supporting the implementation of EMBLEM, highlighting the similarities and contrasts between the necessary skills to achieve fieldwork goals and those required to build upon and sustain an established infrastructure. Discussion will conclude with suggestions for creating local rich research environments for sharing data, resources, skills, and ideas.

POSTER

POSTER SESSION TWO

16:30–18:00
Thursday
9 November

Leng, Mhoira

P347 | A PALLIATIVE CARE CURRICULUM TOOLKIT: A PRACTICAL GUIDE TO INTEGRATING PALLIATIVE CARE INTO HEALTH PROFESSIONAL EDUCATION

Barnard, Alan⁴; Downing, Julia^{1,3}; Grant, Liz³; Leng, Mhoira^{1,3,5}; Murray, Scott³; Snell, Kaly²

¹Makerere and Mulago Palliative Care Unit; ²University of Newcastle;

³University of Edinburgh; ⁴University of Cape Town; ⁵Cairdeas International Palliative Care Trust

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Aim The integration of palliative care (PC) in education programmes is a crucial component of health system strengthening and is emphasised in the WHA PC resolution (2014). Health care curriculums are congested and newer designs focus on competencies and outcomes rather than stand-alone courses. In response to requests from academic colleagues and as part of a wider health systems strengthening approach a Toolkit was developed to support integrating core PC competencies into curriculum planning which builds on existing PC competency frameworks. This can be used as part of curriculum review.

Method An expert group from 4 academic settings and 3 global health and PC organisations convened to review existing competency frameworks, draft an outline and develop a Toolkit. The aim was to support; comprehensive review of PC in an established curriculum; integration of PC components into a curriculum; inform public education and advocacy; and strengthen conference workshops and presentations.

Results Section 1: Background and user-guide with competencies under 5 domains: Basics of PC, Pain and symptom management, Psychosocial and spiritual, Ethical and legal, Communication skills, Teamwork and professionalism. Section 2: practical examples and signposts to useful resources, including strategies to integrate PC into existing courses, how to do a curriculum review in your setting, teaching and learning strategies for PC as well as mentorship and assessment methods The PC Toolkit and links to helpful resources are available online through 2 free to access sites for global PC (www.cairdeas.org.uk and www.ed.ac.uk/global-health)

Conclusion PC competencies can be delivered in different ways within health and social care curriculums using these innovative and creative approaches, which recognise existing or hidden competencies as well as the value of developing new materials. PC education should be integrated as a crucial component for transforming practice and health systems strengthening and will contribute to a values based approach.

POSTER

Leng, Mhoira

P348 | AN EVALUATION OF THE IMPACT OF THE MAKERERE PALLIATIVE CARE UNIT RESEARCH NETWORK AND CAPACITY BUILDING

Cordner, Rebecca^{1,3}; Downing, Julia^{1,5}; Grant, Liz²; Leng, Mhoira^{1,2,3}; Namukwaya, Elizabeth¹

¹Makerere Palliative Care Unit; ²University of Edinburgh; ³Cairdeas International Palliative Care Trust; ⁴University of Newcastle; ⁵International Children's Palliative Care Network

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POSTER

SESSION

TWO

16:30–18:00

Thursday

9 November

Aim The generation of palliative care (PC) evidence in low resource settings though supported by the WHA resolution however is often limited by research capacity. A key objective for a new academic PC unit established in 2008 was to encourage a research culture, supporting and initiating research nationally and internationally by capacity building through development of research networks, agendas, research workshops and training, collaborations, supervision and mentorship. We wished to evaluate the outcome of this research network's capacity building as part of a strategic planning process 2011 to 2016, conducted in partnership with key stakeholders.

Method Review of internal research capacity noting projects completed, abstracts presented, publications and research qualifications attained. Evaluation of 4 research trainings held internationally; short research workshops (India, Zambia), annual research modules for BSc in PC and the first advanced PC research school for Africa (Uganda). An online survey included all participants covering research involvement, confidence in research process, dissemination & challenges and was followed by a semi-structured interviews of a purposive sample.

Results 1. Building capacity with the Academic PC unit staff revealed; qualifications achieved 5 BSc, 2 Masters, 1 Phd. Publications included 103 abstracts at national & international conferences and 11 papers published. 2. Online survey with 56 (of 130) respondents from 9 countries. 94% working in clinical PC with 32% government & 42% NGO. 63% attended no other research training. Significant improvement in confidence ($p < 0.001$) after training in all aspects of research process. Participants valued supervisors' expertise ($\bar{x} = 3.71$), quality of relationships ($\bar{x} = 3.63$) & feedback ($\bar{x} = 3.56$) though reported challenges with ethical approval ($\bar{x} = 3.46$) access to the literature ($\bar{x} = 3.21$) & internet ($\bar{x} = 3.41$). Participants noted: 'it was very rewarding, motivating & built my confidence as an upcoming researcher'. Qualitative interview themes; attitudes and myths or research, impact of training, skills, role of mentorship, implementation and challenges.

Conclusion Results suggest the importance of research capacity building and demonstrate changes in confidence in research through training. Many cadres express fears relating to starting research and this needs a multi-layered approach, supportive environment including modelling or evidence based practice, support for advanced training and a culture of inclusion. Combining evidence based practise with clinical modelling is an important strategy within an integrated health systems approach for PC.

POSTER

Leng, Mhoira

P349 | DEVELOPING POST GRADUATE TEACHING FOR PALLIATIVE CARE THROUGH AN INNOVATIVE APPROACH IN RWANDA

**POSTER
SESSION
TWO**

**16:30–18:00
Thursday
9 November**

Dixon, Jeff²; Dusabejamba, Vincent^{2,3}; Grant, Liz⁴; King, Louise²;
Leng, Mhoira^{1,4,5}

¹Makerere and Mulago Palliative Care Unit; ²University of Rwanda;

³Kigali University Teaching Hospital / CHUK; ⁴University of Edinburgh;

⁵Cairdeas International Palliative Care Trust

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Aim Embedding competencies for palliative care (PC) within health care curricula is essential for integrating services and ensuring, an empowered workforce and patient-centred care. To be effective, teaching for professional learners has to be efficient, active, collaborative, and self-directed. The University of Rwanda (UR) Masters of Medicine (MMED) Internal Medicine programme has developed an innovative, flipped-classroom core lecture series to support postgraduate training. As part of this series PC was embedded to build shared core competencies among all trainees. This model effectively leveraged existing international collaborations and intermittent visits from PC specialists to build a PC curriculum for Internal Medicine postgraduates. A partnership between UR, University of Edinburgh and technical support from Makerere University supported the programme.

Methodology Core competencies were agreed with domains: what is PC, pain and symptom control, ethics and legal issues, communication and end of life care. International expertise in partnership with the University of Edinburgh and Makerere University supported the development of 6 narrated presentations which were then shared using google drive. Participants undertook personal study at a time of their choosing followed by face to face interactive tutorials. Feedback was collected from participants and tutors.

Results Postgraduates rated the series favourably, with scores averaging 4.5/5 (90%) or greater for topic relevance, content quality, clarity of delivery, and contribution to their learning for both online lectures and classroom-based tutorials. Postgraduates accessed training materials according to their preferred learning style and 100% recommended retaining both lectures and tutorials for future years. Qualitative feedback regarding the lectures included comments; “amazing”, “interactive”, “very helpful”, and a “good, brand new way of interactive teaching”. Tutorial leaders noted the enthusiastic engagement of learners in case discussions. All lectures and tutorial activities are retained and available for future postgraduate training in Rwanda and as part of the partnership resources. PC MCQ’s were included in the end of year assessment examination.

Conclusions Integrating PC competencies is an important way forward, however teaching capacity can make this challenging. Through working in partnerships and facilitating input from international experts to develop teaching resources, national capacity can be built. Innovative teaching methods allowing for different learner preferences enhance the experience. Developing teaching capacity in country, adapting formal curriculums and postgraduate specialisation is the next step.

PRESENTATION

Leon, Maria E OCCUPATIONAL EXPOSURE TO PESTICIDES AND LYMPHO-HEMATOPOIETIC CANCERS

ENVIRONMENTAL
FACTORS:
PESTICIDES &
OTHER TOXINS

14:40–16:30
Thursday
9 November

Leon, Maria E.¹
¹International Agency for Research on Cancer

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Background Pesticides are intended to prevent, repel or destroy pests or used as plant regulator, defoliant or desiccant, with a beneficial impact in agriculture and infections vector control. However, exposure to pesticides has been linked to collateral effects in humans and the environment. Chronic exposure to pesticides, as in agricultural populations, has been associated with adverse health effects, including cancer. Overall, these populations experience low mortality in comparison to the general population but higher rates of few cancers, including excess rates of lympho-hematopoietic cancer (LHC) mortality.

Objectives To summarize findings from studies assessing occupational exposure to individual pesticides in agricultural populations in relation to LHC using 1) a published systematic review we conducted, 2) the International Agency for Research on Cancer (IARC) Monographs on the evaluation of carcinogenesis and 3) a data-pooling study that we coordinated exploring the association between pesticides and LHC within an international consortium of agricultural cohort studies.

Findings The systematic review on non-Hodgkin lymphoma (NHL) and occupational exposure to pesticides identified 44 publications from 17 independent studies. Positive significant associations with NHL were found for carbamate, organophosphate, and organochlorine insecticide active ingredients. Positive significant associations with NHL sub-types were observed for few herbicides. Between 1979 and 2016 IARC evaluated 86 pesticides including re-evaluation of few agents. Arsenic and inorganic arsenic compounds (1979, 2009), lindane (2015) and pentachlorophenol (PCP)(2016) have been classified as carcinogenic to humans (Group 1) including studies in humans indicating increased risk of NHL (lindane, PCP), and multiple myeloma (PCP). Using agricultural cohorts from the AGRICOH consortium we explored the association between ever use of 14 pesticide chemical groups and 33 active ingredients and incidence of lymphoid malignancies between 1993 and 2011 in over 300,000 farmers and farm workers from France, Norway and USA. Sixty-three percent of the study population was classified as exposed to at least one of the pesticides. Three significant positive associations of NHL and two sub-types with ever exposure to two insecticides and one herbicide and two inverse associations with two chemical groups were detected after adjusting for other pesticides, while for the majority of the pesticides evaluated no associations were found. Chance findings and bias towards the null were important limitations.

Conclusions The evidence above indicates that occupational exposure to pesticides may be a relevant determinant of NHL.

PRESENTATION

Leoncini, Lorenzo

THE NEW WHO ENTITY OF HIGH-GRADE LYMPHOMA

Leoncini, Lorenzo

HAEMATOLOGY

14:40–16:30

Thursday

9 November

Correspondence lorenzo.leoncini@dbm.unisi.it

High grade B-cell lymphomas represent aggressive, mature B-cell lymphomas that for biological and clinical reasons should not be classified as DLBCL-NOS or Burkitt lymphoma. There are two categories of these high grade B-cell lymphomas:

- High grade B-cell lymphoma, with BCL2 and/or BCL6 and MYC rearrangements: this group encompasses all B-cell lymphomas (except some rare follicular lymphomas and precursor B-cell lymphoblastic lymphomas/leukaemias) that carry a BCL2/18q21 and/or a BCL6/3q27 breakpoint in combination with a MYC/8q24 breakpoint, thus representing so-called “double hit” or “triple hit” lymphomas. Most cases of this category will morphologically be diagnosed as DLBCL-NOS, the remaining cases having features (by morphology and immunohistochemistry) of both Burkitt lymphoma and DLBCL, whereas rare cases have a blastoid appearance (morphologically mimicking lymphoblastic lymphoma or the blastoid variant of mantle cell lymphoma). Almost all patients with these lymphomas have extensive nodal and extranodal disease and a poor response to conventional immuno-polychemotherapy, and in consequence a short overall survival.
- High grade B-cell lymphoma, NOS: most cases of this category have a morphology and immunophenotype intermediated between BL and DLBCL or blastoid, but by definition do not harbour a genetic double hit. Patients with this type of lymphoma have a poor or slightly better outcome than patients with a double hit lymphoma.

PRESENTATION

Leoncini, Lorenzo

WHO CLASSIFICATION OF LYMPHOMA UPDATE WITH SPECIAL REFERENCE TO BURKITT LYMPHOMA

BURKITT LYMPHOMA

11:00–12:30

Wednesday

8 November

Leoncini, Lorenzo

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Burkitt lymphoma (BL) is a highly aggressive but curable lymphoma that often presents in extranodal sites or as an acute leukaemia. Three epidemiological variants of BL are recognized: endemic-eBL (associated to EBV infection in almost all cases), sporadic-sBL (linked to EBV infection in 30 % of cases), immunodeficiency associated-iBL (EBV is identified in 25–40 % of the patients). The tumour has an extremely high proliferation rate with many mitotic figures as well as a high rate of apoptosis leading to a «starry sky» pattern. The nuclei are round with finely clumped chromatin, and contain multiple basophilic medium sized, paracentrally located nucleoli. The tumour cells typically express CD20, CD10, BCL6, CD38, and are BCL-2 negative. Almost all BL have a strong expression of MYC protein in the majority of cells. The proliferation rate is very high (100%). The characteristic cytoplasmic lipid vesicles can be demonstrated using a monoclonal antibody against adipophilin. However, some subtle morphological and immunophenotypical differences do exist; in these challenging cases, some scoring systems have been proposed to achieve the diagnosis. The molecular hallmark of BL is the translocation of MYC at band 8q24 to the IGH region on chromosome 14q32, t(8;14)(q24;q32), or less commonly to the IG kappa light chain locus on 2p12 [t(2;8)] or IG lambda light chain locus on 22q11 [t(8;22)]. MYC translocations are not specific for BL and may occur in other types of lymphoma. Additional chromosomal abnormalities may also occur in BL, including gains of 1q, 7, and 12 and losses of 6q, 13q32-34, and 17p, that may play a role in the progression of the disease. Approximately, 10% of classical BL cases lack an identifiable MYC rearrangement; the expression of MYC mRNA and protein in these cases suggests alternative mechanisms deregulating MYC. Gene and micro-RNA expression profiling defined a molecular signature for BL that is specific and different from other lymphomas such as DLBCL. However, some differences exist among the three variants; specifically an enhancement of the BCR signaling pathway and tumor necrosis factor α (TNF α)/nuclear factor κ B (NF- κ B) in eBL, suggest an active role for chronic antigenic stimulation and infectious agents in the pathogenesis. Next generation sequencing (NGS) analysis has revealed the importance of the BCR signaling pathway in the pathogenesis of BL. Mutations of the transcription factor TCF3 (E2A) or its negative regulator ID3 have been reported in about 70% of sporadic BL case. These mutations activate BCR signaling, which sustains BL cell survival by engaging the PI3 kinase pathway. CCND3, TP53, RHOA, SMARCA4 and ARID1A are other recurrent mutations occurring in 5% to 40% of BL. The global number of mutations and mutations in TCF3/ID3 is lower in endemic than sporadic BL. An inverse correlation between EBV infection and the number of mutations has been observed, suggesting that these mutations may substitute the virus for the activation of the BCR signaling.

POSTER

POSTER SESSION TWO

16:30–18:00
Thursday
9 November

Lewis, Emma Grace

P350 | THE PREVALENCE OF PALLIATIVE CARE NEED ON THE ADULT MEDICAL AND PAEDIATRICS WARDS OF A REFERRAL HOSPITAL IN TANZANIA

Lewis, Emma Grace^{1,2}; Massawe, Anna²; Shayo, Aisa²; Duinmaijer, Ashanti³; Walker, Richard¹; Urasa, Sarah²

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Aims We aimed to discover the prevalence of palliative care (PC) need on the medical and paediatrics wards of Kilimanjaro Christian Medical Centre (KCMC), a tertiary referral hospital in northern Tanzania. Participants were defined as having PC need if they were considered to have a life limiting illness (LLI) and unresolved symptoms, as measured by the African Palliative Care Association Palliative Outcome Scale (APCA-POS) or the Children's Palliative Outcome Scale (C-POS).

Problem statement The need for PC services for both adults and children at KCMC is expected to be great, yet there is currently no dedicated specialist service at the hospital. Addressing this service gap for patients and their families is a pressing need, particularly in the acute inpatient setting where many present with advanced disease and a significant symptom burden.

Methodology We conducted a census of the adult medical and paediatrics wards on the 12th, 15th and 25th of January 2016. Two medical doctors reviewed all inpatient files on those days. Consenting inpatients and assenting family members were interviewed using the APCA POS or C-POS.

Results The prevalence of children with LLI was 33.3% (14/42 95% CI 19.0-47.5). Seventy three adult medical patients were categorized as having LLI from a total of 124 patients (58.8% CI 95% 50.2 – 67.5). Cancer was a common LLI diagnosis in adults, accounting for 30.1% of adult and 28.5% of children with LLI. Adults with LLI were significantly more likely to suffer with pain, worry about their illness, and to feel less of a sense of peace compared with counterparts without active LLI. Children with LLI were significantly less likely to feel like playing, and the total C-POS scores were significantly worse compared with children without LLI.

Conclusion The PC need in this setting is high. Over half of adults and one third of children who were inpatients at the time of this study had LLI diagnoses and unresolved symptoms according to the APCA POS and C-POS. The APCA POS and C-POS were used successfully to identify unresolved PC needs and should be used by PC services as they develop at KCMC.

POSTER

WELCOME RECEPTION AND POSTER SESSION ONE

16:30–18:00

Tuesday
7 November

Lewis, Philippa

**P084 | IMPROVING THE SAFETY OF CHEMOTHERAPY DELIVERY
IN MBARARA: A PARTNERSHIP PROJECT BETWEEN MBARARA
UNIVERSITY OF SCIENCE AND TECHNOLOGY (MUST) AND
UNIVERSITY HOSPITALS, BRISTOL (UHB)**

Lewis, Philippa¹; Tibenderana, Becky²; Lowis, Stephen¹; Branson, Kaia¹;
Ankunda, Dorah²; Hopkins, Kirsten³

¹University Hospitals Bristol NHS Foundation Trust; ²MUST Oncology Clinic;

³International Atomic Energy Agency

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Background Uganda Cancer Institute and the Department of Medicine at MUST developed an oncology clinic in Mbarara in 2012 with support from UHB. In 2015, clinicians at MUST and UHB secured a grant from the Tropical Health & Education Trust (THET) to improve the safety of chemotherapy delivery at this clinic. Expert missions and fellowships were arranged between Bristol and Mbarara to provide teaching and practical training in all aspects of oncology and chemotherapy. Main activities of the project

- Training in cancer biology and pharmacology, safe handling of cytotoxic drugs, and management of cancer patients.
- Updating of chemotherapy protocols and introduction of better documentation practices for chemotherapy prescription, preparation and administration.
- Creation of teaching materials (workbooks, posters, manuals and handouts) from expert missions, to allow ongoing access to information for all clinic staff
- Training in the use and maintenance of a new chemotherapy preparation safety cabinet

Results Significant improvement in the accuracy of chemotherapy prescriptions and clinical documentation and in the pick-up rate of unforced prescription errors when clinical pharmacy checks were introduced. Greater understanding of the necessary precautions for administration of cytotoxics. Improved clinical skills when setting up chemotherapy infusions. Benefits to expert staff visiting Mbarara through exposure to practice in a different resource setting. Particular success from fellowships at UHB, with visiting staff reporting practice-changing training and experience.

Areas for improvement Long-term missions provided the opportunity for more intensive teaching, although staffing levels and service commitments meant this could not always be sustained. In future, longer missions may be more suitable for service provision with 'teaching by example', as ringfenced time for teaching is not always feasible for staff with significant clinical commitments. Visa restrictions meant that some fellowships could not proceed. Ongoing successful collaboration between the partners may improve the likelihood of visas being approved in the future.

Summary The partnership brought significant benefits to both parties. Better documentation, prescription accuracy, and the enhanced role of the oncology pharmacist within the clinic have noticeably improved chemotherapy service delivery. Staff improved their knowledge, skills and confidence in dealing with cancer patients and chemotherapy. All participants have expressed a desire to continue working together, and further teaching visits and fellowships are planned.

POSTER

POSTER SESSION TWO

16:30–18:00

Thursday

9 November

Liman, Mubarak

P226 | PATTERN, DISTRIBUTION AND SURVIVAL RATES OF BREAST, CERVICAL, PROSTATE AND COLON CANCERS AMONG PATIENTS ATTENDING HEALTHCARE CENTRES IN NORTHERN NIGERIA

Liman, Mubarak^{1,2}; Sunday, Blessing¹; Yau, Bashir¹; Nafisat, Aliyu¹
¹Nuhu Bamalli Polytechnic; ²Ahmadu Bello University

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Breast, cervical, prostate and colon cancer are the top-most prevalent cancers in Nigeria. The research is a retrospective study designed to investigate the pattern and distribution of these cancers among patients attending some healthcare centers in Northern Nigeria. The approach employed involves collection and analysis of data from files of patients diagnosed with either breast, cervical, prostate or colon cancer at some healthcare centers located in Zaria, Kano and Jos cities of Northern Nigeria from the years 2006-2015. The data obtained from 492 case files studied showed that 47% of the patients were diagnosed with breast cancer, 22% with cervical, 23% with prostate while 8% were diagnosed with colon cancer. The mean age of diagnosis for breast, cervical, prostate and colon cancers were 43.5, 46.7, 49.4 and 52.1 years respectively. The percentage urban and rural distribution of these cancers were not significantly ($p > 0.05$) different except for colon cancer. Majority (76%) of all the studied cases were diagnosed with advanced stage carcinoma. The mean survival beyond 5 years of diagnosis were 46.61%, 61.48%, 42.16% and 50.39% for breast, cervical, prostate and colon cancers respectively. In the overall the results shows that breast cancer has predominance followed by prostate cancer. These observations and trends were in agreement with some population based cancer registry reports from Northern Nigeria. The low survival rates of less than 50% for breast and prostate cancers which are known to be the most incident cancers in Nigerian females and males respectively is particularly disturbing. It is therefore recommended that policy makers, healthcare managers and development partners should re-intensify efforts aimed at improving cancer management such as, through provision of improved diagnostic and care facilities, advocacy for screening and early detection as well as promotion of cancer education and prevention strategies.

PRESENTATION

HIV AND SITE SPECIFIC CANCER ABSTRACTS

08:25–09:25

Friday

10 November

Lince-Deroche, Naomi

USING ECONOMIC EVALUATION TO ADVANCE BREAST CANCER ACCESS IN SOUTH AFRICA

Lince-Deroche, Naomi^{1,4}; Masuku, Sithabiso^{1,4}; Van Rensburg, Craig^{1,4}; Holele, Pearl²; Rayne, Sarah^{3,4}

¹Health Economics and Epidemiology Research Office; ²South African National Department of Health; ³Helen Joseph Hospital; ⁴University of the Witwatersrand

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Background Breast cancer is the most commonly diagnosed cancer among women in South Africa. There is need for a national screening program for early diagnosis, and improvements to existing treatment options for benign and malignant disease. In response, in early 2017 South Africa finalized the country's first breast cancer screening and treatment policy (BCSTP). To achieve this, it required an affordability assessment prior to final approval. We aimed to use budget impact analysis (BIA) to explore the cost implications of introduction of the draft BCSTP.

Methods We built a health state transition model in Excel representing breast health status and service access patterns at baseline (2017) and for four subsequent years. Using published and grey literature, and expert opinions we established the probability of moving from one health state to another at baseline and the expected outcomes for model validation for service delivery targets for the period 2018–2021.

We used local census data and published literature to establish four hypothetical cohorts of men and women from low-risk to high-risk for current and future breast disease. The hypothetical cohorts progressed through the model with annual time cycles.

Cost data for service delivery was derived from available information on costs in South Africa's public health sector together with primary data collection conducted in a large, outpatient breast care clinic and published literature. Following generally accepted guidelines for BIA including inflation (6% per annum) we calculated health service costs for the BCSTP. The reported costs reflect personnel, consumables, equipment, and laboratory costs only.

Results At baseline, annual screening of asymptomatic women (via clinical breast exams) was estimated at 5% of women over age 35. This increased to 75% coverage by 2021. Improving screening resulted in more benign and malignant disease diagnosed, and diagnoses made earlier.

In 2017, total costs for screening and treatment of benign and malignant disease were estimated at ZAR 894,000. The total cost for all activities for the five year period, holding service delivery models and access constant at 2017 levels, was ZAR 5.4 billion. With the new policy, the expected total increase in national costs was ZAR 1.1 billion over five years.

Conclusion The burden of cancers in low- and middle-income countries is expected to grow in the coming decades, further stretching health care budgets. BIA facilitates careful cost planning for new health care services. This is essential for expanding and ensuring continued access to care.

POSTER

Lohman, Diederik

P351 | PALLIATIVE CARE NEED AND AVAILABILITY IN SENEGAL: RESULTS FROM A MULTI-COMPONENT ASSESSMENT

**POSTER
SESSION
TWO**

**16:30–18:00
Thursday
9 November**

Lohman, Diederik¹; Ba, Oumar^{2,3}; Niang, Serigne³; Ntizimira, Christian⁵; Amon, Joseph⁴; Hamdi, Hana⁴

¹Human Rights Watch; ²Hopital General de Grand Yoff; ³Ministry of Health and Social Action, Senegal; ⁴Columbia University; ⁵Rwanda Palliative Care and Hospice Organization

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Context With prevalence of non-communicable diseases and life expectancy rising in Senegal, the need for access to palliative care is likely growing. Yet, no palliative care needs assessments have been carried out to date.

Objectives To assess the capacity and need for palliative care in Senegal among inpatients and outpatients at four public hospitals.

Methods A multi-component assessment of availability and demand for palliative care was conducted in two tertiary and two regional hospitals in Senegal in October – November 2015. The assessment consisted of an inpatient hospital census; surveys of inpatients and outpatients with life limiting illness; a knowledge, attitudes, and practices survey among healthcare workers; and a facility survey to assess availability of essential palliative care medications.

Results Nearly half (44.4%) of all inpatients (n=167) had an active life limiting illness. Among these patients, 56.6% reported moderate to severe pain in the past three days, 2.3% of whom received morphine and 76.7% received weak or no pain medication. Inpatients also experienced dyspnea (55.3%), fatigue (83.6%), nausea (27%), vomiting (26%), and dry mouth (45%) By comparison, 39.2% of all outpatients with active life limiting illness (n=395) reported moderate to severe pain, and 52.8% said the treatment they had received relieved their pain only partially or not at all. Two-thirds (66.0%) of all doctors (n=100) reported feeling comfortable prescribing pain medicines, however 83.0% rarely or never prescribed morphine, and two of four hospitals reported no use of morphine in 2014. A composite score of doctors' knowledge about pain management found that 25.8% had only answered one knowledge question correctly and that 86.0% of physicians incorrectly answered at least 3 of the 5 questions.

Conclusion There is a significant need for palliative care in Senegal among both inpatients and outpatients at public hospitals studied. Training of healthcare workers and ensuring availability of relevant medications should be prioritized as the health care system responds to this need.

PRESENTATION

PAEDIATRIC
ONCOLOGY
& OTHER
ABSTRACTS

13:30–14:30

Thursday

9 November

Lombardo, Katharine

UTILITY OF CIRCULATING TUMOUR-ASSOCIATED IMMUNOGLOBULIN DNA AS A BIOMARKER IN KENYAN CHILDREN WITH BURKITT LYMPHOMA

Lombardo, Katharine^{1,2}; Coffey, David G.^{1,2}; Oduor, Cliff³; Otieno, Juliana A.⁴; Ong'echa, J.M.³; Bailey, Jeffrey A.⁵; Moormann, Ann M.⁵; Warren, Edus H.^{1,2}

¹Fred Hutchinson Cancer Research Center; ²University of Washington;

³Kenya Medical Research Institute; ⁴Jaramogi Oginga Odinga Teaching and Referral Hospital; ⁵University of Massachusetts Medical School

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Objective Assess the utility of the immunoglobulin heavy chain (IGH) locus as a marker for disease dissemination and persistence in the cell-free component of blood in Kenyan children diagnosed with Burkitt lymphoma (BL).

Methods Primary BL tumor biopsies and plasma samples were obtained from children presenting to the Jaramogi Oginga Odinga Teaching and Referral Hospital in Kisumu, Kenya. High-throughput sequencing (HTS) of the IGH locus was performed on genomic DNA extracted from BL tumor biopsies and patient-matched, serially-collected plasma samples obtained at diagnosis and after a standard course of treatment.

Results Sequencing revealed a unique, clonal IGH rearrangement in the majority of BL tumors. The dominant clonal rearrangement was not always a productive VDJ rearrangement; unproductive VDJ and incomplete DJ rearrangements were also detected at high frequency in the tumors, suggesting that not all tumors express a functional B cell receptor. In most cases, only one rearranged IGH allele was detected by HTS. A high degree of sequence variation was observed at the IGH locus in both productive and unproductive rearrangements. A median of 135 (35% of the total repertoire) IGH sequence variants, which differed from the dominant IGH rearrangement by less than 10 nucleotides, were detected in each tumor. These families of related, tumor-associated IGH sequence variants likely define the malignant population.

Each plasma sample was assessed for the presence of tumor-associated IGH rearrangements. The 14 patients with tumors harboring a clonal IGH locus were evaluated and 12/14 of the matched plasma samples were positive for patient-specific circulating-tumor DNA at diagnosis. The post-treatment plasma samples are currently being assessed for the detection of tumor-associated IGH sequences.

Conclusions This study demonstrates that tumor-associated DNA sequences derived from the IGH locus commonly circulate in the blood of Kenyan children with BL, even in subjects whose disease is felt to be localized based on clinical staging. Sequencing of tumor and plasma samples revealed that the unique ensemble of IGH sequences derived from each patient's tumor, including the sequences derived from IGH rearrangements that are not expressed at the protein level, has potential utility as a disease biomarker. These findings have important implications for the assessment of BL staging, detection of residual disease after treatment, and monitoring for disease relapse.

PRESENTATION

Lorenzoni, Cesaltina

BARRIERS TO ESTABLISHING NATIONAL CANCER CONTROL PROGRAMME IN PALOP REGION AND MOZAMBIQUE

NATIONAL CANCER CONTROL PROGRAMMES

07:15–08:20

Wednesday

8 November

Lara Santos, Lucio; Lorenzoni, Cesaltina¹; Patricia Silva, Maria
¹Eduardo Mondlane University

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The increase in life expectancy at birth, changing lifestyles, improving access to health facilities and the enhancing of quality of life are responsible for the increase in the number of cancer cases in Africa, including those from the so called Lusophone Africa (Portuguese-speaking African countries – PALOP), namely Angola, Cape Verde, Guinea-Bissau, Mozambique and Sao Tome and Principe.

Cancer statistics for PALOP's are mainly based on estimates and no official data on incidence and mortality is available, even at the regional level. An exception is Mozambique where incidence estimates in GLOBOCAN took into account local data coming from a regional cancer registry.

However the fight against cancer has just started in these countries. Training, education, advocacy and legislation are ongoing. However, we struggle against many barriers such as: economic problems, illiteracy, lack of staff and oncological facilities.

The affordability of cancer drugs is still a problem to be solved. The Ministries of Health attempted to minimize this problem by making free the access to drugs in public facilities, but the increased number of cancer patients threatens the sustainability of this decision and poses some difficulties to its functionality.

Language (Portuguese) is an important barrier when we want to have access to funds and advice to organize national plans to fight cancer. Globally, the resources and programs dedicated to oncology, as well as their access, occur in the world that speaks English or French.

Portuguese-speaking African Countries cancer meeting is being planned to be held every two years with the scientific support of AORTIC.

Conference of Portuguese-speaking African Countries is planned to be held every two years with the scientific support of AORTIC. In 2019 we expect it to happen and Cape Verde. They have already occurred in Angola and Mozambique and it is a very important moment to assess successes and failures and to design common strategies with the support of AORTIC experts and other stakeholders.

We will address in our speech the difficulties and potential solutions to make PALOP more effective in the fight against cancer Increasing our organization at the level of each country and with the support of AORTIC and international experts.

PRESENTATION

Lorenzoni, Cesaltina ONCOLOGY IN MOZAMBIQUE

Baker, Ellen; Humberto Fregnani, Jose; Lopez, Melissa; Lorenzoni, Cesaltina¹;
Patricia Silvia, Maria; Schemeler, Kathleen
¹Eduardo Mondlane University

PALOP

14:40–16:00

Friday

10 November

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Cancer is a major public health problem, accounting for high morbidity and mortality rates. In 2007, cancer accounted for 8 million (13%) of all deaths globally, representing the second cause of death from NCDs. It is estimated that by 2030, cancer deaths will increase by 45%. Approximately 70% of cancer deaths occur in LMICs. The burden of cancer continues to grow in Africa and the most common cancer types include cervical, breast, liver, prostate, non-Hodgkin lymphomas and Kaposi's sarcoma (KS). Approximately 20% of cancer deaths in Africa are associated with infections such as HIV, HPV and HBC/HCV.

Data in Maputo City reveal that the five most frequent cancers are: cervix (18%), KS (11%), prostate (7%), liver (7%) and breast (6%). Between 1991-2008, the three most common cancers in men were prostate cancer (16%), KS (16%) and liver cancer (11%). In women, cervical cancer is most common (31%), then breast (10.2%) and KS (7%). Mozambique data are similar to other countries lacking robust screening and early detection programs and those with high rates of HIV/AIDS. In Mozambique, cancer accounted for 1% of the deaths, representing the 5th most common cause of mortality in the group of NCDs.

In 2009, Mozambique implemented a national cervical and breast cancer screening program; in 2014 created a working group to develop the national cancer control program that includes prevention and early detection, diagnosis, treatment, palliative care, surveillance, registry, research and training of health professionals. These programs also awareness campaigns, launched by the First Lady, on the signs and symptoms of cancer to improve early diagnosis.

The cervix cancer screening program includes women 30-55 years, using VIA and treatment with cryotherapy. Cervix screening and clinical breast examination, are performed by nurses.

Mozambique has invested in training and implemented Project ECHO® (Extension for Community Healthcare Outcomes), a multi-center partnership with MD Anderson, the Brazilian cancer centers of Barretos, Albert Einstein, AC Camargo and physicians from HCM. ECHO videoconferences address management of cervical, breast, head/neck cancer and hematologic malignancies. Successes include increased knowledge, development of provider exchanges, and hands-on training sessions.

Our future plans are to finalize a National Cancer Control Plan, introduce a cervical cancer screening pilot program with primary HPV testing, implement a HPV vaccination program, implement a radiotherapy program and create three centers of excellence for cancer treatment

POSTER

WELCOME RECEPTION AND POSTER SESSION ONE

16:30–18:00

Tuesday

7 November

Louati, Sara

P025 | TRANSCRITS DE FUSION: OUTIL INDISPENSABLE DANS LE DIAGNOSTIC DES SARCOMES

Louati, Sara¹; Daali, Youssef²; Senhaji, Nadia¹; Gloor, Yvonne²; Amrani Joutej, Khalid¹; Chbani, Laila³; Bennis, Sanae^{3,4}

¹Faculté des Sciences et Techniques de Fès; ²Hôpitaux Universitaires de Genève; ³CHU Hassan II de Fès; ⁴Faculté de Médecine et de Pharmacie de Fès

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Introduction Le synoviosarcome (SS) représente environ 7 à 10% des sarcomes des tissus mous et le diagnostic repose principalement sur le contexte clinique, l'aspect histologique et l'immunohistochimie. Les SS se produisent principalement dans les extrémités, en particulier à proximité des grandes articulations chez les adolescents et les jeunes adultes. La réaction positive pour la protéine S-100 et le groupe de différenciation (CD) 99 a été signalé respectivement dans 27 à 43% et dans 40 à 100% des SS, ce qui rend difficile le diagnostic différentiel avec les tumeurs malignes de la gaine nerveuse périphérique (MPNST) et les tumeurs du groupe PNET/Ewing. Le marqueur immunohistochimique spécifique du SS n'a pas encore été trouvé.

Plusieurs études ont indiqué que t (X, 18) (p11.2 ; q11.2) et par conséquent la fusion des gènes SYT-SSX se fait exclusivement dans SS, ils peuvent donc être utilisés comme excellents signes diagnostiques pour cette malignité.

L'objectif de ce travail est d'évaluer la valeur diagnostique de SYT-SSX détectée par RT-PCR et par hybridation in situ fluorescente (FISH) chez des patients atteints d'un synoviosarcome.

Méthodes Une analyse clinique et pathologique a été réalisée sur 38 patients atteints d'un synoviosarcome. Le réarrangement chromosomique du gène SYT a été recherché par la technique FISH. Ensuite, les transcrits de fusion SYT-SSX1 et SYT-SSX2 ont été identifiés par RT-PCR.

Résultats L'âge moyen des patients est de 33 ans avec des extrêmes allant de 11 à 66 ans. Tous les cas sont gradés selon la FNCLCC (Fédération Nationale des Centres de Lutte Contre le Cancer).

Les SS sont composés d'une prolifération de cellules fusiformes. La plupart des cas montrent une positivité des anticorps anti CK et anti EMA. Le réarrangement du gène SYT a été noté dans 20 cas, et une RT-PCR est réalisée par la suite sur ces derniers. Les réarrangements SYT-SSX1 et SYT-SSX2 ont été trouvés dans la plupart des cas confirmant ainsi le diagnostic.

Conclusion La RT-PCR est actuellement la base de définition d'un synoviosarcome. L'étude des effets de la protéine chimérique au sein de la cellule ouvre beaucoup d'espéros à une thérapeutique ciblée. De même, la détection des transcrits de fusion ouvre la voie à une nouvelle ère moléculaire pour le diagnostic en éliminant les diagnostics différentiels. Cette recherche moléculaire est intéressante aussi bien dans le pronostic que dans la surveillance de ces cancers.

POSTER

WELCOME RECEPTION AND POSTER SESSION ONE

16:30–18:00

Tuesday

7 November

Low, Daniel

P085 | CHEMOTHERAPY USE AT THE END OF LIFE IN UGANDA

Low, Daniel¹; Merkel, Emily²; Ddungu, Henry²; Namukwaya, Elizabeth³; Leng, Mhoira³; Casper, Corey⁴

¹University of Washington School of Medicine; ²Uganda Cancer Institute;

³Makerere / Mulago Palliative Care Unit; ⁴Fred Hutchinson Cancer Research Center

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Purpose Avoiding chemotherapy during the last 30 days of life has become a goal of cancer care in the United States and Europe, yet end-of-life chemotherapy administration remains a common practice worldwide. The purpose of this study was to determine the frequency of and factors predicting end-of-life chemotherapy administration in Uganda.

Methods Retrospective chart review and surveys and interviews of providers were performed at the Uganda Cancer Institute (UCI), the only comprehensive cancer center in the area, which serves a catchment area of greater than 100 million people. All adult patients at the UCI with reported cancer deaths between January 1, 2014, and August 31, 2015 were included. All UCI physicians were offered a survey, and a subset of physicians were also individually interviewed.

Results Three hundred ninety-two patients (65.9%) received chemotherapy. Age less than 55 years (odds ratio [OR], 2.30; $P = .004$), a cancer diagnosis greater than 60 days before death (OR, 9.13; $P < .001$), and a presenting Eastern Cooperative Oncology Group performance status of 0 to 2 (OR, 2.47; $P = .001$) were associated with the administration of chemotherapy. More than 45% of patients received chemotherapy in the last 30 days of life. No clinical factors were predictive of chemotherapy use in the last 30 days of life, although doctors reported using performance status, cancer stage, and tumor chemotherapy sensitivity to determine when to administer chemotherapy. Patient expectations and a lack of outcomes data were important nonclinical factors influencing chemotherapy administration.

Conclusion Chemotherapy is administered to a high proportion of patients with terminal cancer in Uganda, raising concern about efficacy. Late presentation of cancer in Uganda complicates end-of-life chemotherapy recommendations, necessitating guidelines specific to sub-Saharan Africa.

POSTER

POSTER SESSION TWO

16:30–18:00
Thursday
9 November

Low, Daniel

P352 | END OF LIFE PALLIATIVE CARE PRACTICES AND REFERRALS AT THE UGANDA CANCER INSTITUTE

Low, Daniel¹; Merkel, Emily¹; Ddungu, Henry²; Namukwaya, Elizabeth³; Leng, Mhoira³; Casper, Corey⁴

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Importance Early involvement and integration of palliative care with oncology can improve both quality of life and survival of patients with advanced cancer. Little information exists on the practice of palliative care among cancer patients in sub-Saharan Africa.

Objectives To describe the frequency and factors predicting palliative care referrals among cancer patients in Uganda and the knowledge, attitude and practice of cancer doctors regarding palliative care.

Design Retrospective chart review, and a survey and individual interviews of cancer providers. Setting: Kampala, Uganda at the Uganda Cancer Institute (UCI). Participants: All adult UCI patients who died in a 20-month interval from 2014–2015. All UCI doctors were approached for the survey and a subset were also individually interviewed.

Results Sixty-six (11.1%) of 595 terminal cancer patients were referred to palliative care specialists. Patients with worse Eastern Cooperative Oncology Group performance statuses were more likely to be referred to palliative specialists (OR 2.23, $p=0.03$); no other factors were predictive of a referral, including age, gender, cancer type and stage, timing of cancer diagnosis and co-morbidity. Median life expectancy after referral was 5 days (IQR 2–13). Twenty-five (96%) Uganda Cancer Institute doctors were surveyed and 7 (27%) were interviewed. Physicians attributed the low referral rate and short life expectancy after referral to limited palliative resources and a reticence to have end-of-life management conversations with patients.

Conclusion Referral of terminal cancer patients to palliative care specialists in Uganda is infrequent, and may in part be explained by resource limitations and cultural beliefs.

POSTER

WELCOME RECEPTION AND POSTER SESSION ONE

16:30–18:00

Tuesday
7 November

Lu, Enriquito

P055 | BRIGHTER FUTURE TODAY: EFFECTIVE ADVOCACY FOR SCALING UP HPV VACCINATION THROUGH ADOLESCENT AND YOUTH HEALTH PLATFORM

Lu, Enriquito¹; Jennings, Mary Carol²; Murphy, Elizabeth¹
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The vast majority of cervical cancer stems from a preventable, communicable disease. It starts as a sexually transmitted infection of the oncogenic Human Papilloma Virus (HPV). Annually, over 530,000 new cases and about 260,000 women die of cervical cancer, mostly in LMIC. There are 3 HPV vaccines which safely and effectively prevent cervical cancer. WHO recommends vaccinating 9–14 year-old girls as the most cost-effective public health intervention against cervical cancer. Since 2006 licensure and subsequent introduction in 71 countries, less than 5% of those recommended girls have been fully immunized. Even in countries that GAVI supported “demonstration to introduce” activities, the initiative to scale up remains a challenge. Added to this mix are more than 110 countries that have yet to introduce the vaccine.

GAVI and its partners are exploring effective and practical approaches and technical assistance initiatives to support countries navigate the pathway towards scaled up HPV vaccination.

This presentation will provide updates in HPV vaccine science, discuss implementation lessons learned and propose strategic advocacy approaches for introduction and scale-up of the HPV vaccine. It will also explore opportunities for integration leveraging adolescent and youth health initiatives to create synergies for a brighter future for today’s young girls.

POSTER

Lubwama, Margaret

P295 | MULTIDRUG RESISTANT BACTERAEMIA AMONG FEBRILE CANCER PATIENTS IN UGANDA

**POSTER
SESSION
TWO**

16:30–18:00

Thursday

9 November

Lubwama, Margaret¹; Phipps, Warren^{2,3}; Kambugu, Joyce⁴; Kajumbula, Henry¹; Najjuka, Christine¹; Bwanga, Freddie¹

¹Makerere University; ²Fred Hutchinson Cancer Research Center;

³University of Washington; ⁴Uganda Cancer Institute

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Background Bacteremia in cancer patients is associated with increased morbidity and mortality. Knowledge of the local epidemiology and resistance patterns of prevalent bacteria is critical for determining the choice of empiric antimicrobial therapy, yet very few studies have investigated the causes of infection among cancer patients in sub-Saharan Africa (SSA). To address this gap, we sought to identify the causative agents of bacteremia among febrile cancer patients in Uganda and to determine their antimicrobial susceptibility profiles.

Methods We performed a cross sectional study of bacterial causes of fever among cancer inpatients at the Uganda Cancer Institute (UCI) in Kampala, Uganda. Eligible patients had a confirmed histologic diagnosis of cancer and had an axillary temperature > 37.5°C. Patient characteristics, including demographic and clinical data were abstracted from the medical chart using a standardized form. Two blood samples were collected during the febrile episode and were cultured using the BACTEC 9120 blood culture system. Bacteria from positive cultures were identified and susceptibility to antibiotics was determined by the Kirby-Bauer disc diffusion method.

Results A total of 170 febrile episodes were observed in 132 cancer patients. Positive blood cultures were obtained from 24 (14%) of the 170 episodes; 70% of the positive cultures occurred in patients who had a neutrophil count <1000 cells/ μ L. Of 33 aerobic bacteria isolated, 22 (66.7%) were gram negative and 11(33.3%) were gram positive. Among the gram-negative organisms, *Escherichia coli* was the most common (n=11, 55%), followed by *Klebsiella pneumonia* (n=7, 35%). Gram-negative bacteria were most likely to be isolated from patients with a hematologic malignancy (P=0.02) or patients with a neutropenia (P=0.006). Eighty-five percent of Enterobacteriaceae (n=20) isolated were resistant to three or more classes of antibiotic and 41% phenotypically had extended spectrum beta-lactamases. Among the gram-positive organisms, the single *Staphylococcus aureus* isolate was methicillin resistant (MRSA) and positive for inducible clindamycin resistance.

Conclusions Multidrug resistant gram-negative bacteria are the main cause of bacteremia in febrile cancer patients at the Uganda Cancer Institute. Our study highlights the growing threat of antimicrobial resistance in SSA, and underscores the need for robust infection control and antimicrobial stewardship programs in African cancer centers.

PRESENTATION

PALLIATIVE AND SUPPORTIVE CARE

11:00–12:30

Tuesday

7 November

Luyirika, Emmanuel

CANCER CONTROL AND PALLIATIVE CARE IN AFRICA

Luyirika, Emmanuel¹

¹African Palliative Care Association

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Background Africa has a population of 1 billion, over 800,000 new cancer cases per year with over 80% of cancer patients presenting late when curative options are not possible. The palliative care (PC) approach covering physical, psychosocial and spiritual aspects is recommended from diagnosis whether curative treatment is attempted or for purely palliation to reduce pain, other symptoms and suffering associated with cancer.

Developments in Africa The developments in Africa include the adoption of the 2002 WHO PC definition, use of the WHO Public Health approach, implementation of components of the 2014 WHA PC Resolution, the African Common Position on access to pain medicines, the Johannesburg and Kampala Declarations on PC, inclusion of PC in NCDs responses as well as inclusion of PC in National Cancer Control Plans.

Results In an Africa-wide exercise to develop the APCA PC Atlas, at least 38 countries have some sort of PC service with Uganda having 229, South Africa 160 and Kenya 70 but only 16 countries have paediatric PC care services. Swaziland has 10.88 hospice services per million of population, Uganda 5.87, Gambia 5.02 while South Africa 2.91 per million of population. Only 28 countries have home-based PC services with South Africa topping with 109 home-based services, Tanzania 26, Zimbabwe with 25, and Uganda with 13 and Kenya 12.

In terms of number of patients in PC services per year South Africa stood at 40,000, Zimbabwe at 5000, Zambia 4000, Botswana at 3210 and Kenya at 3000.

25 countries have hospital based PC services with highest coverage being Swaziland at 100% of all hospitals, Gambia 83%, Uganda 20% Kenya 14% and Senegal, Tanzania and Botswana at 10%.

Only 6 countries have PC recognized as a specialist field. Morphine was available in the public sector in only 24 countries but consumption still very low averaging 1mg/capita/year with highest being in Mauritius, South Africa, Namibia and Tanzania. Only 12 countries have developed national stand-alone PC policies, the reconstitution of oral liquid morphine. Over 5 cancer centres have adopted the Pain Free Hospital Initiatives. As per IAEA-PACT, over half of Africa has no access to radiotherapy services for treatment and palliation.

Conclusion With those facts, it is obvious that access to PC for cancer and other conditions is still limited in Africa.

Recommendation Africa must increase investment in palliative care for cancer and other patients needing it.

PRESENTATION

Luyirika, Emmanuel

**PALLIATIVE CARE IN RESOURCE LIMITED SETTINGS:
PRACTICE AND RESEARCH**

**IMPROVING
HEALTH
SYSTEMS:**

**PUBLIC HEALTH
& ECONOMICS**

11:00–12:30

Tuesday

7 November

Luyirika, Emmanuel¹; Namisango, Eve¹

¹African Palliative Care Association

Correspondence emmanuel.luyirika@africanpalliativecare.org

Background Africa has a population of 1 billion in 54 countries with over 22 million HIV patients and over 800,000 new cancer cases in addition to other conditions for which palliative care (PC) is needed. In 2011 the estimate of patients who need PC at end of life globally was 20.4 million and AFRO region accounted for 9% of this figure. In AFRO 353 per 100,000 adults needed palliative care at the end of life while for children it stood at 160 per 100,000 the highest in the world. Data Demand and Information Use (DDIU) which aims to identify opportunities for and constraints to effective and strategic data collection, analysis, availability, and use in PC is essential.

Developments in Africa The 2002 WHO PC definition, the WHO PC Public Health approach, implementation of the 2014 WHA PC Resolution, the African Common Position on access to pain medicines, the Johannesburg and Kampala Declarations and the NCDs Declaration have provided opportunity for PC research and practice.

Results Several PC delivery models have been developed and some countries have included palliative care indicators in the HMIS to generate better data for decision making. The 2017 APCA PC Atlas, at least 38 countries have some sort of PC service using different models. Uganda had 229 such services, South Africa 160 and Kenya 70 but only 16 countries have paediatric PC care services.

Swaziland has 10.88 hospice services per million of population, Uganda 5.87, Gambia 5.02 while South Africa 2.91 per million of population. Only 28 countries have home-based PC services with South Africa topping with 109 home-based services, Tanzania 26, Zimbabwe with 25, and Uganda with 13 and Kenya 12.

On the number of patients in PC services per year, South Africa stood at 40,000, Zimbabwe at 5000, Zambia 4000, Botswana at 3210 and Kenya at 3000.

25 countries have hospital based PC services with highest coverage being Swaziland at 100% of all hospitals, Gambia 83%, Uganda 20% Kenya 14% and Senegal, Tanzania and Botswana at 10%.

The African Palliative Care Research Network (APCRN) hosted by the African Palliative Care Association (APCA) has been developed with one hub in each region resulting in the implementation of several research initiatives.

Conclusion It is clear that access to PC is a major issue and effort in ensuring that research is done to inform practice.

Recommendation Africa must increase investment in evidence-based palliative care systems and infrastructure.

POSTER

POSTER SESSION TWO

16:30–18:00
Thursday
9 November

Maboreje, Ololade

**P353 | PALLIATIVE CARE FOR HEAD AND NECK CANCERS PATIENTS
AT DEPARTMENT OF HOSPICE AND PALLIATIVE CARE UNIVERSITY
COLLEGE HOSPITAL IBADAN, NIGERIA: AN 8 YEAR REVIEW**

Maboreje, Ololade¹

¹University College Hospital, Ibadan

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Introduction Head and neck cancers constitute 5–50% of all cancers globally. In Northern Nigeria, a yearly hospital incidence of 20–24 new cases had been reported while in south-western Nigeria a yearly incidence of 33–38 new cases has been reported. Many of those seen at University College Hospital presented late with distressing symptoms and life threatening emergencies, palliative care aims at improving the quality of life of these patients.

Methodology Relevant information for the study were retrieved from case files of patients seen from February 2008–January 2016. Their bio data, diagnosis and services offered were extracted and analysed.

Results There was a total of 50 patients with Head and Neck Cancers seen; 25 males and 25 females (M/F=1:1) out of a total of 1,401 patients seen by the department during the study period. Of these 50 patients, 10 (20%) lived within catchment area while 40 (80%) were outside catchment area of the hospice.

Services rendered included pain control, home based care, patient counselling, financial support, phone calls, psycho-social support and day care forum and bereavement support.

Patient counselling were offered to all patients and pain control which was managed with analgesics using the World Health Organisation analgesic ladder.

Other symptoms managed were sore throat, weight loss, headache, drowsiness, odynophagia. At the end of the period under review none of the patients are alive, 29 (58%) are dead and 21 (42%) of the patients were lost to follow up.

Conclusion Patients with Head and Neck Cancers had supportive services rendered regarding their pains, other symptoms control and their psycho-social issue . Palliative care should be made available and accessible to all patients who requires it. Three major needs are identified. First, palliative care principles must be included in the educational curriculum of all health care professionals. Additionally, continuing education effort to create awareness about palliative care must be developed for those already in practice. Secondly,our study also demonstrates a critical need to establish more palliative care centres nationwide for easy accessibility to patients. Finally, government must make opioids especially liquid morphine available and accessible as these drugs are essential to effective palliative care management.

POSTER

Mahfoudh, Wijden

P251 | SCREENING FOR FOUR COMMON BRCA1 MUTATIONS IN TUNISIAN WOMEN WITH TRIPLE NEGATIVE BREAST CANCER

**POSTER
SESSION
TWO**

**16:30–18:00
Thursday
9 November**

Mahfoudh, Wijden¹; Bettaib, Inchirah¹; Gabbouj, Sallouha¹; Bouaouina, Noureddine^{1,2}; Chouchane, Lotfi^{1,3}; Zakhama, Abdelfattah¹
¹Laboratory of Molecular Immuno-Oncology, Faculty of Medicine; ²Department of Radiation Oncology, CHU Farhat Hached; ³Department of Genetic Medicine, Weill Cornell Medical College

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Triple-negative breast cancers (TNBC) have been classified as a disease subgroup that is negative for oestrogen, progesterone and HER2 receptor expression, and presents a poor prognosis. Reports to date indicate that up to 20 % of TNBC patients harbour germline BRCA mutations; however, the prevalence of mutations may vary with ethnic group and with geographic region. In the Tunisian population, as yet a limited number of BRCA1 germline mutations have been reported in hereditary breast/ovarian cancer. However, the prevalence of BRCA1 germline mutations in Tunisian women with TNBC has not yet been reported.

We estimated the frequency of BRCA1 mutations among 20 women with triple-negative breast cancer, unselected for family history. Patients were screened for 4 BRCA1 mutations, which have been reported previously in Tunisian women, including a Tunisian founder mutation (916delTT) and a recurrent mutation (5382insC). The BRCA1 mutation screening was performed on genomic DNA from peripheral blood samples by direct sequencing.

We identified the BRCA1 5382insC mutation in 2 of 20 triple-negative patients with a mutation prevalence of 10%. However, the Tunisian founder mutation (916delTT) was not found in this group of patients.

The presented data confirm a noticeable contribution of BRCA1 5382insC mutation in TNBC development in Tunisia. Thus, the triple-negative phenotype should be added as a criterion to genetic screening guidelines in our population.

POSTER

WELCOME RECEPTION AND POSTER SESSION ONE

16:30–18:00

Tuesday

7 November

Majani, Charles

P412 | PREVALENCE OF HEPATITIS B VIRAL INFECTION AND THE KNOWLEDGE, ATTITUDES AND BEHAVIOURS RELATED TO HBV INFECTION AMONG INDIVIDUALS ATTENDING OUTPATIENT CLINIC AT SENEREMA DISTRICT HOSPITAL IN TANZANIA

Majani, Charles¹; van der Meer, Frank²; Jaka, Hyasinta¹; Seni, Jeremiah¹
¹Catholic University of Health and Allied Sciences; ²University of Calgary

Correspondence majanihopcs@yahoo.com

Background Despite the significant burden it places on communities across the world and availability of an effective vaccine during the last 35 years, hepatitis B virus (HBV) has been neglected as a health priority. It is estimated that one third of the world population is infected with HBV, or over 2 billion people. Of this group 240 million people are chronically carrying the virus, while more than 780,000 people die every year.

HBV infection may progress to liver fibrosis, cirrhosis and an increased risk of liver cancer. In low and middle income countries many people do not know their HBV status and diagnosis often occurs at tertiary stage, hence treatment become more complicated. One out of four adults with chronic HBV will die from Hepatocellular carcinoma or cirrhosis, moreover up to 70% of all liver cancers in Tanzania are associated with HBV. HBV infection is an increasing cause of mortality among people living with HIV, where about 5-15% of 34 million HIV positive people are co-infected. Limited literature is available on community knowledge, attitude and behavior related to Hepatitis B infection.

This study aims at estimating the prevalence of Hepatitis B Viral infection in the community and to describe the knowledge, attitudes and behaviors related to HBV infection.

Methodology this will be a cross sectional study, involving female and male individuals aged 18 years and older who will be enrolled using serially between July and September 2017. An interview will be conducted using a questionnaire to collect information on social demographic data, questions exploring knowledge on transmission, prevention, availability of vaccine and risk behaviors related to HBV. Participant will be tested for HBsAg.

Anticipated results and significance In order to design effective community health education and campaigns, it is essential to gain a proper understanding of the community knowledge and awareness on HBV. This study will identify knowledge gaps, attitudes, cultural beliefs and behavioral patterns. This knowledge will facilitate the design of educational programs aimed at raising awareness on preventive measures related to HBV infection in the community. This might be a starting point in combatting cancer caused by infection as 70% of liver cancer in Tanzania is associated with HBV.

PRESENTATION

Maniragaba, Theoneste CANCER EDUCATION IN RWANDA: CHALLENGES AND OPPORTUNITIES

CANCER REGISTRATION, ONCOLOGY NURSING & OTHER ABSTRACTS

13:30–14:30

Thursday

9 November

Maniragaba, Theoneste¹; Rubagumya, Fidel¹; Mbabazi, Gerald²; Rulisa, Stephen²; Manirakiza, Achille¹
¹Muhimbili University; ²University of Rwanda

Correspondence iragabatheo@gmail.com

Introduction The burden of cancer in Sub-Saharan Africa keeps increasing coupled with limited infrastructures and human resources especially oncology trained health care providers. Many countries have no systems in place to counteract this epidemic and academic institutions are also not preparing future doctors to confidently take care of cancer patients. The oncology education model used in Rwanda medical training is not fully understood and no known tools available to assess whether medical graduates are adequately trained in basic principles of oncology.

Methods To identify the current status of cancer education in Rwandan medical school, from March to April 2017, an online based questionnaire was sent out to students in the two (2) final years of medical school at the University of Rwanda. The questionnaire consisted of two sections; basic demographics and assessing the general Oncology education status

Results We are presenting a preliminary analysis of 46 students, with 36.2% (n=17) females, and the largest proportion being between 25-29 years of age (63.6%; n=26).

Close to a half of the students felt better exposed to cancer patients and to bedside cancer related teaching in the Internal Medicine rotation (47.9% and 45.8% respectively). Ninety four percent (n=45) of the students reported that there is no formal oncology rotation.

More students (39.6%; n=19) expressed neutrality in how comfortable they would be while attending cancer patients, while about the same percentage expressed less level of comfort in managing oncology cases (31.3%; n=15). About 81.3% (n=39) agreed that a suitable oncology curriculum would be beneficial, and interestingly 85.3% (n=41) feel an extra-curricular educative platform would be useful.

Conclusions The preliminary results of this study show that there is inadequate oncology education in undergraduate medical education in Rwanda. A suitable Oncology curriculum and objective based oncology clinical rotations are needed to address this deficiency expressed by majority of undergraduate medical students in Rwanda.

PRESENTATION

Manirambona, Linda

LATE PRESENTATION IN CANCER PATIENTS: CULTURAL IMPLICATIONS

CULTURAL PERSPECTIVES IN CANCER

07:15–08:20

Friday

10 November

Manirambona, Linda¹

¹Polyclinique La Medicale

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Introduction Twenty three years after the genocide against Tutsi, Rwanda has made substantial social economic progress, including health sector. Some researchers attribute this success to different factors including community health workers and health insurance. However, the same as other sub-Sahara countries, cancer remains a big challenge to Rwanda health care system.

It is known that prevention and early detection are key strategies for fighting cancer. In Sub-Sahara Africa, cancer is characterized by a high rate of diagnosis at an advanced stage which is one of the biggest difficulties faced by oncology departments and health systems. This leads to poor prognostic outcome. Late presentation is defined as the patient presentation to clinician later than 12 weeks after start of appearance of symptoms. Culture is a one of the major social determinants contributing to this late patient presentation despite the fact that access to cancer treatment is a faced reality.

Aim To explain cultural barriers which lead to late presentation of cancer patients in Rwanda and to discuss plausible integration of cultural factors in human cancer care in Rwanda.

Review of literature Culture is defined as conception about the world socially passed through generations. Ubuntu philosophy defined as 'I am because you are' reflects African society. Concerning health it has been shown that cultural model impacts on how one can perceive the diseases and the needed medication and how one may behave according to one's beliefs. What about cancer then?

One study done in Rwanda on breast cancer for example showed that 36,8 percent of women consulted only the traditional healers for their breast symptoms. Our question would be why? Mahame et al stated that the African medical practice is embedded in the tradition, culture and taboos and is still relevant to the way of life of Africans. Another aspect is that in our culture when you are sick you belong to your family, you will not be the one to take decision despite your suffering.

Discussion

1. What are the opportunities in our culture that could contribute positively in cancer control?
2. How can we mitigate cultural barriers to early cancer treatment?
3. How can we integrate cultural human agents in community approach towards cancer care system?

POSTER

Manirambona, Linda

P057 | CULTURAL HEALTH BELIEFS AND BREAST CANCER SCREENING KNOWLEDGE AMONG RWANDAN WOMEN

**WELCOME
RECEPTION
AND POSTER
SESSION ONE**

16:30–18:00

Tuesday

7 November

Manirambona, Linda¹; Chebre, Rahel; Rulisa, Stephen

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Objectives The national cancer control program in Rwanda is expanding to increase access to breast cancer prevention. This study examined knowledge and cultural beliefs surrounding breast cancer prevention including breast self-examination (BSE). Rwandan comprehensive women's health exam covers clinical breast examination (CBE) and we sought to identify knowledge and participation in CBE.

Methods One hundred Rwandan women completed a baseline assessment and survey to measure breast cancer prevention knowledge, screening practice and source of information and cultural belief. All of them came to consult in gynecology and obstetric department at both universities teaching hospital of Kigali and Butare and not necessarily for breast clinic. It was an observational study with a face to face questionnaire administration. The outcomes of interest were BSE and CBE, knowledge and practice.

Results Questionnaires were completed by 100 women aged 20–60. 34% of women were aged 40 and above; 23% of them did not have any formal education. A higher educational qualification was associated with greater breast cancer risk factor knowledge ($p < 0.01$). Awareness of BSE was reported by 15% of women and only 7% of women had undergone a CBE. Higher education was associated with greater CBE knowledge ($p < 0.01$). The main sources of information were radio media (49%) and other women with a history of breast cancer (32%). Only 1% of women had heard of breast cancer from community health workers. Women also reported seeing traditional healers when presenting breast symptoms.

Conclusion National policies on cancer control to increase breast cancer screening in Rwanda can be enhanced by increasing knowledge of breast cancer risk factors and availability of clinical breast exam as a component of women's health check-ups. Among women surveyed, participation in breast cancer screening with clinical breast exam is low. Increasing knowledge and practice surrounding breast cancer prevention can be accomplished using the media. Also understanding the cultural belief of the target population could help health professional's developing strategies for breast cancer prevention.

POSTER

Marco, Colleen

P296 | IMPACT OF AQUA THERAPY ON THE QUALITY OF LIFE OF BREAST CANCER SURVIVORS LIVING WITH UPPER LIMB LYMPHEDEMA

Marco, Colleen¹

¹Cancer Association of South Africa

**POSTER
SESSION
TWO**

16:30–18:00

Thursday

9 November

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Introduction Lymphoedema is a chronic debilitating condition and a major side effect of cancer surgery and radiation. Lymphoedema may have a severe impact on the quality of life of the cancer survivor living with the condition. The management of lymphoedema includes daily compression bandages or compression garments to the affected limb, daily gentle massage of the limb, skin care to prevent infection and daily exercise is to stimulate the lymphatic system for eventual lymph drainage. Most of the cancer survivors accessing the CANSA care clinic in Mowbray, Western Cape for lymphoedema management are not motivated to comply with the recommended management guidelines of lymphoedema.

Purpose of the study A pilot intervention study was conducted to improve the quality of life of breast cancer survivors living with lymphoedema. An aqua exercise program was introduced to a group of women. over a period of six months to encourage exercise in a non threatening manner that would contribute to improving their quality of life.

Study outcomes A successful outcome was achieved. The participants in the aqua therapy program reported improvement in lymphoedema symptoms such reduction in swelling, no more swelling, improved range of limb movement. The participants became a support to each other motivating one another to comply as best as they possibly could to the lymphoedema management guidelines which included daily exercise.

Conclusion Aqua therapy is a simple yet very motivational form of exercise. It has the benefit of group support in a non authoritative manner. The weekly sessions also create access to information, assessment and other needed treatment from the therapist who provide the aqua therapy sessions.

PRESENTATION

Maree, Lize

CANCER NURSING RESEARCH IN AFRICA: SCOPING THE LANDSCAPE

Maree, Lize¹; Herbert, Vivien¹; Huiskamp, Agnes¹

¹University of the Witwatersrand

CANCER REGISTRATION, ONCOLOGY NURSING & OTHER ABSTRACTS

13:30–14:30

Thursday

9 November

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Background Research allows nurses to provide the best possible care and improve patient outcomes.

Objectives To perform a scoping review of studies conducted in Africa by nurses and midwives over the past decade to identify and describe the work completed, identify gaps and define priorities for research.

Design and Method We used the terms Africa + cancer nursing and Africa + oncology nursing to search PubMed, CINAHL, Web of Science, Scopus and SA e-publications for literature published between 1 January 2006 to 31 December 2015. Articles were included if it was conducted in an African country with a nurse/midwife affiliated to an African institution as one of the authors, was written in English, peer reviewed and had an abstract with an available full text. A data extraction sheet was developed to record the data.

Results We found 529 articles, 427 were excluded for either being duplicates or not meeting the inclusion criteria; 57 papers were included in the review. The work was conducted in 8 African countries; more than 50% (n=30) was published in international journals. Eighty four nurses/midwives authored/co-authored the articles with most (82.1%; n=69) contributing to 1 article. The studies were primarily quantitative (36.8%; n=21) and only 8.8% (n=5) were intervention and outcomes studies. Most studies 57.9% (n=33) focused on cervical cancer, followed by breast cancer (17.5%; n=10), with prostate cancer the focus of 1 study. Six topics were investigated; primary and secondary prevention, cancer care, experiences of patients living with cancer, access to cancer care and nurses and nursing practice.

Conclusion Fifty seven articles in 10 years seem to be a very low research output but compare favourable to the 73 found in a review on clinical nursing and midwifery research in Africa. The large percentage of authors involved in only one study supports evidence that Africa lacks dedicated cancer nurse scientists. The cancers investigated do not match Africa's cancer disease profile and common cancers such as breast and prostate cancer received little attention. Studies focusing on symptom management, the family and caregiver also lack. Although studies on knowledge, attitudes and practices can provide baseline data, this field of study is over exhausted and we need to move forward and prioritize developing and testing innovative ways to prevent and detect cancer early. It was positive to find some work focused on nursing practice, which would enable us to start developing evidence for Africa specific cancer nursing practice.

POSTER

WELCOME RECEPTION AND POSTER SESSION ONE

16:30–18:00

Tuesday
7 November

Maree, Lize

P187 | THE LEVEL AND CHARACTERISTICS OF PAIN EXPERIENCED BY WOMEN TREATED FOR CERVICAL CANCER AT AN ACADEMIC HOSPITAL IN GAUTENG, SOUTH AFRICA

Maree, Lize¹; Kaila, Ilipo¹

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Introduction Pain is synonymous with cancer and 70 to 90% of patients living with cancer experience pain.

Objectives To describe pain in women living with cervical before treatment, at six and twelve months after treatment.

Design and Method A cross sectional design and a calculated sample size was used to recruit 168 women (n=168), 58 (n=58) in each treatment group. The Brief Pain Inventory (BPI), completed during structured interviews, served as data collecting instrument. Descriptive statistics analysed the data and the Kruskal H Test determined statistical significant differences between the groups.

Results Participants were between the ages 24 to 76 years, mean 50.3 (SD ±12.2), primarily single (54.1%; n=91), attended secondary school (56.8%; n=69) and unemployed (57.1%; n=96). Most (78.0% n=131) experienced pain due to their disease and 115 (n=115) qualified to complete the total questionnaire. Pain was mostly located in the abdomen (47.0%; n=54) and lower back (26.1%; n=30). The average pain experienced when collecting the data, was 4.6 whilst 35.7% (n=41) had mild pain on average. A Kruskal-Wallis H test showed a statistically significant difference in the pain scores between the different groups, $\chi^2(2) = 13.12$, $p = 0.001$. The largest percentage used paracetamol (45.2%; n=52) and 58.3% (n=67) took their medication only when necessary. Most felt they needed a stronger type of pain medicine (72%, n=62.6), the highest percentage (76.5%; n=13) was from the group with an average pain level of 0. Those concerned about taking too much pain medicine (21.7%; n=25) mostly feared addiction (52.0%; n=13).

When asked how pain influenced participants' general activity, mood, walking ability, normal work, relations with others, sleep and enjoyment of life, answers ranged from "does not interfere" to "completely interferes." Kruskal-Wallis tests indicated a significant statistical difference between general activity amongst the three groups $\chi^2(2) = 6.383$, $p = 0.0411$, normal work $\chi^2(2) = 7.188$, $p = 0.0275$ and relations with other people $\chi^2(2) = 10.354$, $p = 0.0056$.

Conclusion Pain on average decreased after treatment and was at its lowest level six months after treatment but increased during the following six months. There was a misfit between the level of pain and the type of pain medicine prescribed. The frequency the pain medicine was taken added to problem. Our study highlighted the complexity of pain control, suggesting failure of both the health care professionals and the patients in achieving the ultimate goal of being pain free.

POSTER

WELCOME RECEPTION AND POSTER SESSION ONE

16:30–18:00

Tuesday

7 November

Martei, Yehoda

P188 | BREAST CANCER PATHOLOGY TURNAROUND TIME IN BOTSWANA

Martei, Yehoda¹; Narasimhamurthy, Mohan²; Prabhakar, Pooja³; Hutson, Jér ¹; Kayembe, Mukendi K.A.^{2,4}; Grover, Surbhi^{1,5,6}

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Introduction and objective The incidence and mortality of breast cancer is increasing in low- and middle-income countries. Quality pathology is critical for timely diagnosis and management of patients with breast cancer. A crucial component of quality assessment in pathology is turnaround time (TAT). However, few studies have analyzed this quality assessment metric in Sub-Saharan Africa. The aim of this study is to quantify pathology TAT for breast specimens processed by the National Health Laboratory and Diagnofirm private laboratory in Gaborone, Botswana. We also compare trends before and after 2012 to evaluate the effect of pathology scale-up interventions by the Ministry of Health and Wellness (MOHw).

Methods Retrospective analysis of TAT abstracted from breast pathology reports for specimens submitted to the National Health Laboratory and Diagnofirm between January 2011 and December 2015. TAT was assessed using date of specimen collection and date of receipt in laboratory to the date of final report sign-off. Descriptive statistics were used to quantify mean and median TAT. Rank sum test was used to compare temporal trends in TAT.

Results Data were available for 158 breast biopsy specimens, 219 surgical specimens and 218 immunohistochemistry (IHC) specimens processed during the study period. This included 53 specimens from Diagnofirm laboratory. The median TAT in 2015 was 6 and 7 days for biopsy and IHC specimens respectively, and 57.5 days for surgical specimens. Our analysis showed a significant decrease in median TAT for biopsy specimens from 21.5 days in 2011–2012 compared to 8 days in 2013–2015 ($p = 0.0007$). There was also a significant decrease, 82% decline, in median TAT for IHC specimens during the same time period ($p < 0.0001$). However, there was no significant decline in median TAT for surgical specimens.

Conclusions The scale up of pathology personnel and infrastructure by the Botswana MOHw significantly reduced median TAT for biopsy and IHC specimens. The current times for surgical specimens are suboptimal, which may reflect a larger proportion of non-routine large and complex surgical specimens given that most patients present with advanced disease. Efforts are currently underway to decrease TAT for surgical specimens to seven days by September, 2017.

PRESENTATION

CANCER ADVOCACY & OTHER ABSTRACTS

11:00–12:30

Thursday
9 November

Martin, Allison

DEVELOPMENT OF A MULTI-DISCIPLINARY TUMOUR BOARD AND IDENTIFICATION OF BARRIERS TO ACCESS OF CANCER CARE AT A TEACHING HOSPITAL IN RWANDA

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Introduction Multiple institutional studies have demonstrated an important role for tumor boards in low- and middle-income countries (LMICs) to ensure protocol-based and stage-appropriate treatment for cancer patients. A quality improvement study was implemented at the primary referral hospital in Kigali, Rwanda to develop site-specific best practices to optimize tumor board performance and delivery of cancer care.

Methods This is an ongoing, prospective, survey-based, quality improvement study, initiated in January 2017. An expert panel of consultant practitioners from the cancer-related fields was convened to outline priorities for an institutional tumor board at the University Teaching Hospital of Kigali (CHUK). A knowledge, attitudes, and practices (KAP) survey was sent electronically to practitioners. Pre-intervention KAP survey responses were aggregated and descriptive analysis was performed.

Results The multidisciplinary expert panel of consultant practitioners identified priorities for tumor board, including: 1) scheduling monthly meetings to discuss complex patients, 2) utilizing teleconferencing to connect with partner institutions, 3) creation of a hospital-based registry and 4) teaching cancer-related topics to residents/students. Pre-intervention KAP survey completion rate was 39% (N=11/28). Specialty areas among responders included surgery (N=4, 36%), oncology (N=1, 9%), pathology (N=2, 18%), obstetrics/gynecology (N=3, 27%), and other (N=1, 9%). Most survey-responders were male (N=9, 77%) and completed training in Rwanda (N=7, 63%) in a cancer-related field (N=6, 55%). Most responders (91%) cited delays in care as a primary issue, resulting in early death for one or more patients. The most commonly treated cancers included ovarian (N=6, 22%), breast (N=5, 19%), cervical (N=5, 19%), colorectal (N=3, 11%), and stomach (N=3, 11%). Responders preferred to receive advice from practitioners at CHUK (N=7, 64%) versus outside institutions (N=3, 27%) when treatment planning. Primary barriers to providing excellent cancer care at CHUK included lack of access to chemotherapy (36%) and radiotherapy (45%).

Conclusions Cancer care in Rwanda is decentralized, which is a challenge for coordination of cancer care providers. Delays in cancer care are a recognized challenge, and there is a belief that a multidisciplinary approach to cancer care may speed the process for patient care. Limitation in access to radiation and chemotherapy remain as primary barriers to the provision of excellent cancer care in Rwanda.

PRESENTATION

Martin, Allison

GEOGRAPHIC INFORMATION SYSTEMS MAPPING OF GASTRIC CANCER IN RWANDA AND TRACKING OF SURGICAL OUTCOMES

EPIDEMIOLOGY

ABSTRACTS

14:40–16:30

Wednesday

8 November

Martin, Allison¹

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Introduction Gastric cancer is the fifth most common cancer in Rwanda and the third most common cause of cancer-related mortality worldwide. In East Africa, the high incidence has been associated with proximity to areas of volcanic activity. Limited availability of chemotherapy and radiation in low and middle income countries ensures that surgery remains the primary treatment modality. We describe the epidemiology and geographic distribution of gastric cancer cases, as well as the presentation and current surgical management of gastric cancer in Rwanda.

Methods A retrospective review of hospital records was performed for all pathology-confirmed cases of gastric adenocarcinoma diagnosed from January 2012 through June 2016 at two tertiary referral hospitals and one district hospital in Rwanda. Variables collected included demographic factors, diagnostic and therapeutic management, tumor grade, and symptom duration. Descriptive and bivariate analysis was performed using Stata version 14.2. Patient geographic locations were mapped via ArcGIS 10.2.

Results We identified 229 patients with pathologically- or surgically-confirmed disease. The median age was 58 years (IQR 49-65) and 50.2% were male (n=115). Patients reported symptoms (i.e., weight loss, epigastric pain) for a median time of 12 months (IQR 7.5-24). Fifty-one percent (n=117) underwent an operative procedure. Of these, 71% (n=83) underwent palliative bypasses (i.e., gastrojejunostomy) or were inoperable. Twenty (8.7%) were referred for palliative care or chemotherapy and did not undergo an operation. Geographic data on place of primary residence was available for 154 patients. The highest frequency of cases recorded in a district was 14 (Rusizi District) in the Western province. Overall, there was an uneven distribution across the country with trends depicting increased densities around the two referral hospital sites and increased density of patients coming from the northeast region.

Conclusions Gastric cancers in Rwanda are often inoperable or only amenable to palliative surgery. The majority of cases are concentrated near referral hospitals, which may be expected, however high density of patients in Rwanda from the neighboring northeast region warrants additional attention. Given limited treatment modalities, increased awareness may improve diagnostic delays without significantly impacting outcomes. Further research into *H. pylori* epidemiology and gastric cancer in East Africa is required. Identification of potential geographic risk factors will allow for targeted gastric cancer education, as well as potential changes to screening guidelines and protocols to best aid care in endemic regions.

POSTER

WELCOME
RECEPTION
AND POSTER
SESSION ONE
16:30–18:00
Tuesday
7 November

Martin, Allison

P125 | NEEDS ASSESSMENT OF GENERAL PRACTITIONERS MANAGING CANCER PATIENTS AT THE DISTRICT HOSPITAL LEVEL IN RWANDA

Martin, Allison¹; Kaneza, Kelly-Mariella²; Kulkarni, Amol³;
Mugenzi, Pacifique^{2,3,4}; Ghebre, Rahel^{2,5}; Costas Chavarri, Ainhoa^{2,3,6}
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Introduction The World Health Organization (WHO) framework for early cancer diagnosis highlights the need for improving healthcare provider capacity at the primary care level via educational interventions. In Rwanda, General Practitioners (GPs) at the District Hospital (DH) level are critical for the timely diagnosis and referral of suspected cancer patients. We sought to ascertain the educational needs of GPs in the clinical evaluation and early diagnosis of cancer. This study will inform future cancer continuing professional development (CPD) trainings for Rwandan GPs at the DH level.

Methods A cross-sectional survey study of GPs practicing at 42 Rwandan district hospitals was performed to assess gaps in knowledge, skills, and resources, as well as delays in the referral process. Responses were aggregated and descriptive analysis was performed to identify trends. The study is actively recruiting and interim results are presented.

Results The survey response rate was 97.4% (N=37/38). Most responders were age 25–29 years (n=31, 83.8%), and 100% had been practicing for 3–12 months. Gaps in cancer knowledge and physical exam skills were identified and included 60% of responders reporting that they did not feel confident in performing a clinical breast exam. Additionally, cervical cancer was the most commonly encountered cancer (n=26) with less than 6% (n=5) reporting confidence with performing a pelvic exam. Gaps in resource availability identified included only 38.8% availability of breast ultrasound and just 6.1% core needle biopsy availability at the DH level. Radiology and pathology resources were limited with 69% reporting no availability of pathology at the DH level (n=25). Nearly all responders reported problems in delays with managing patients with cancer (n=35, 94.6%) and identified patient, systems, and treatment-level delays. The main resource (n=30, 81%) that responders requested for future cancer education-related CPDs were algorithms to help guide clinical decision-making for patients with cancer symptoms.

Conclusions GPs practicing at the DH level in Rwanda are limited in both physical examination skills and diagnostic tools for assessing the most common cancers encountered at their health care facilities. Continuing professional development for GPs in Rwanda should be a core component of national cancer control plans to improve accurate and timely diagnosis of cancer.

PRESENTATION

HIV ASSOCIATED MALIGNANCIES

14:40–16:30

Thursday

9 November

Martin, Jeffrey

RAPID CASE ASCERTAINMENT: AN APPROACH IN SUB-SAHARAN AFRICA TO THE INVESTIGATION OF HIV-ASSOCIATED MALIGNANCIES AND BEYOND

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Rapid case ascertainment (RCA) refers to systematic identification and detailed characterization of newly diagnosed cases of a particular disease very shortly after diagnosis occurs. RCA has heretofore been primarily performed in resource-rich countries where it has been predominantly used (for the last 40 years) to study cancer, but it has also been employed for other conditions (e.g., infectious diseases and birth defects). The original rationale for RCA in cancer — and still its greatest strength — was for malignancies that are rapidly progressive/fatal (e.g., pancreatic or lung) for which conventional case-finding, which may take 6 to 12 months, may miss measurement at time of diagnosis in a large fraction of patients who have died, experienced progression, or were treated. Information derived from RCA forms a platform for research (for questions ranging from etiology to survival) and yields essential metrics for cancer control (e.g., disease stage). RCA has heretofore not been used for cancer in sub-Saharan Africa because the infrastructure required for rapid systematic identification of newly diagnosed cancer in sufficiently large and well-enumerated populations has not existed. The unprecedented response in the region in the last decade to HIV disease, however, has notably changed this. Specifically, with the initiation of treatment in over 10 million patients with antiretroviral medication has come establishment of longitudinal primary care that is documented, in many areas, in computerized databases. Regional aggregation of these database-characterized primary care settings has resulted in populations numbering well over 100,000 individuals who in time give rise to millions of person-year observation. Having clinical data from these large populations in searchable databases is the technologic advance that allows RCA to occur. We have taken advantage of these well-characterized health care system-based populations to perform RCA for Kaposi's sarcoma — one of the most common malignancies in the sub-Saharan adult population. Although we chose KS because of the relative ease of its diagnosis, the large populations of HIV-infected individuals in community-based primary care make them ripe for RCA of other malignancies as well as other non-communicable conditions (e.g., cardiovascular disease) and communicable diseases. As other primary case-based health care systems in Africa begin to emulate what has been done for HIV-infected patients, they, too, will become discernible population targets for RCA. In fact, characterization of health care system-based populations may likely occur more quickly than geographic-based populations in Africa and therefore may become mainstay substrates for RCA in the future.

PRESENTATION

Masamba, Leo

INCIDENCE OF NEUTROPENIA AND ITS COMPLICATIONS IN CHEMOTHERAPY PATIENTS AT QUEEN ELIZABETH CENTRAL HOSPITAL

BIG CAT

AWARDEES

11:00–12:30

Wednesday

8 November

Masamba, Leo^{1,2}; Mtonga, Petani¹; Brown, Ewan³; Msefula, Chisomo²; Van Oosterhout, Joep^{2,4}

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Background and purpose Neutropenia is a frequent complication of chemotherapy. Febrile neutropenia (FNP) following neutropenia is the resultant serious complication of cancer chemotherapy, occurring variably with different chemotherapy protocol and host factors. It is dose limiting in other chemotherapy protocols. Understanding FNP and implementing strategy to institute prompt management saves lives. Studies on this subject in Sub-Saharan Africa are scanty. We aim to evaluate this in a region with high HIV prevalence and possibly high DARC-null mutation. We will evaluate prevalence of this in our patient population and associated impact of DARC null in terms of neutropenia, FNP risk and death due to FNP. To our knowledge this is the first prospective work in Malawi exploring the subject.

Broad objective Assessing neutropenia before, during chemotherapy with its associated complications and correlation to DARC-null.

Primary outcome: Cohort I: Determine prevalence of neutropenia before chemotherapy, neutropenia incidence and chemotherapy FNP in those with and without DARC null mutation.

Cohort II: Determine prevalence of neutropenia pre-chemotherapy, neutropenia incidence and chemotherapy FNP. In each cohort there will be HIV positive and negative strata.

Secondary outcome Frequency of delayed chemotherapy due to neutropenia and FNP; and FNP death.

Methodology (i) Study design: prospective clinical observational study with two cohorts (Cohort I is subset of Cohort II). Cohort I refer to patients that will get DARC null testing.

(ii) Study place: Queen Elizabeth Central Hospital Cancer Unit, Blantyre, Malawi. This is Malawi's largest teaching hospital.

(iii) Population: chemotherapy naïve cancer patients older than 18 years scheduled to receive chemotherapy.

(iv) Sample size: all patients seen in the Cancer Unit during study period will be screened for suitability. Over 500 patients are expected to be screened and recruit 102 patients for Cohort I to detect 15% difference in risk of FNP at 95% confidence interval and 80% power between DARC null expressing and the others. Cohort I and II total of 380 patients will be recruited. 430 patients will be recruited to account for loss to follow-up.

Results We expected to confirm findings from secondary data where there was 18% baseline neutropenia and over 30% FNP. We anticipate to find differences based on DARC-null mutation in terms of risk of FNP.

PRESENTATION

OESOPHAGEAL CANCER RESEARCH

11:00–12:30

Friday

10 November

Mathew, Christopher

THE GENETICS AND GENOMICS OF OESOPHAGEAL CANCER IN SOUTH AFRICA

Mathew, Christopher^{1,2}; Chen, Wenlong^{1,3}; Bye, Hannah²; Lewis, Cathryn²; Willem, Pascale¹; Parker, M. Iqbal¹

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Oesophageal squamous cell carcinoma (OSCC) is common in many Black populations of sub-Saharan Africa, with high incidence regions in Eastern and Southern Africa. Clinical presentation is late, and treatment is mainly palliative with a very poor prognosis. The possible contribution of inherited genetic variants to disease risk is unresolved. Also, limited data are available on the somatic mutations driving tumour development. We have sought to address these questions in the Black population of South Africa (SA).

Genetic association studies of African OSCC have been limited to the analysis of small numbers of single nucleotide polymorphisms (SNPs) in candidate genes. We tested SNPs which have been associated with OSCC in genome-wide association studies (GWAS) from Asian and European populations for association with OSCC in the SA population. Black cases (N=1367) with a histologically confirmed diagnosis of OSCC and matching population controls (N=1760) were recruited, after informed consent and institutional ethical approval, from the Western Cape and Gauteng provinces of South Africa. SNPs were genotyped either by individual TaqMan assays (Applied Biosystems) or in a multiplex MassARRAY (Agena Bioscience) and genotypes were tested for association. Our initial studies found no significant evidence of association at most previously reported GWAS loci. However, evidence for association was observed for the SNP rs1033667 on chromosome 22q12.1 in the CHEK2 gene (odds ratio = 1.178, P = 0.0019).

Detection of somatic mutations in OSCC tumour tissue has in the past been limited to sequencing of candidate genes and copy number studies, with TP53 mutations being detected in a minority of South African and Kenyan patients. We carried out pilot whole exome sequencing in 10 matched blood/tumour pairs from South African OSCC patients. Mutations in two or more tumours were detected in TP53, APC, ATR, GNAS and MAGI2. Genes involved in control of the cell cycle were mutated in 7 tumours, genes in the Wnt signalling pathway were mutated in 4, and genes affecting chromatin remodelling in 3 tumours. Follow up sequencing of all coding exons of the TP53 gene detected missense or truncating mutations in 18/26 (69%) of tumours.

Priorities for the future should include well powered GWAS in high risk populations from several African countries. Whole-exome or whole genome sequencing of substantial panels of blood/tumour pairs are needed to establish the major drivers of tumorigenesis in African OSCC and to derive mutational signatures which may provide insight into causal environmental factors.

POSTER

WELCOME RECEPTION AND POSTER SESSION ONE

16:30–18:00

Tuesday
7 November

Matiko, Riro

P189 | THE BREAST CANCER PATIENT JOURNEY: AN ASSESSMENT OF COST AND OTHER INFLUENCING FACTORS IN GHANA, KENYA AND NIGERIA

Matiko, Riro¹; Nwogu, Chukwumere²; Oyesegun, Abdulrazak³; Jamal, Asim⁴; Njuguna, Eliud⁵; Ngoh, Charles⁶
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Objectives Despite advances in management, breast cancer remains the leading cause of cancer death among women worldwide. Over 70% of all cancer deaths occur in low- and middle-income countries (LMICs) where limited resources adversely impact access to care, resulting in sub-optimal management, high morbidity and mortality. This often places breast cancer patients and their families at risk of financial hardship. There has been no study on the factors influencing the breast cancer patient journey in sub-Saharan Africa. Lack of financial burden data is a major obstacle to developing policies for cancer care in LMICs. This study aims to describe the typical breast cancer patient journey, assess resource use, the ensuing cost and other factors influencing patient care in public and private tertiary hospitals in Kenya, Nigeria and Ghana.

Methods The planned study is primarily a retrospective chart review conducted in 6 tertiary hospitals in 3 countries: Ghana, Kenya and Nigeria. Hospitals were selected to ensure a balance of public and private sector service provision in each country. We aim to obtain a comprehensive two-year sample of 1200 patient records across all study sites. An expert panel will provide qualitative information on breast cancer management to corroborate findings from quantitative analyses, and provide further contextual insights. Cost of treatment and budget impact will be simulated using current pricing data from the service delivery points.

Results Data collection will occur between April and August 2017. The findings will enable description of the patient journey, stating proportions of patients going through each predefined step of the management journey. This will be compared with international guidelines, while highlighting the gaps between the local treatment guidelines and actual patient management practices. Data analysis will also show the type and quantity of each healthcare service and resource use which, used in conjunction with pricing data, will allow for the estimation of the cost for the typical patient.

Conclusions A thorough assessment of the typical breast cancer patient journey, its cost and other influencing factors, can provide useful insights essential for shaping policies aimed at improving resource allocation and level of care for patients.

POSTER

Mbatani, Nomonde

LANGUAGE AS A BARRIER TO HEALTH SEEKING BEHAVIOUR

**HOW WE USE
LANGUAGE IN
DISCUSSING
CANCER**

07:15–08:20

Friday

10 November

Mbatani, Nomonde¹

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Advanced stage presentation is concerning in patients diagnosed with cancer. Late presentation is not necessarily found in countries with low resources. There are many reported cases from North America, Australia and the United Kingdom. Barriers to delayed early health seeking are related to patient factors, available resources and the design of health systems. Patient related reasons for late or non-attendance at health centres include: age, race, low socio-economic background, cultural, spiritual and religious beliefs.

Civil wars and economic downgrades may force people to leave their countries of birth to settle in foreign countries. Limited foreign language proficiency and lack of relating to different ethnicity and cultures between staff and clients, may result in delays in health seeking behaviour.

In a study of minority ethnic groups in England, language was found to have a significant association with lowest knowledge about early signs of cancer, lower utilization of health facilities and health outcomes. Patients who do not understand their doctors are less likely to adhere to advise on treatment and are highly likely to discontinue treatment

Improvement to these can be achieved by ensuring that health systems acknowledge diversity and the impact of this to health, by ensuring that culturally diverse staff that represent the communities served are employed in these health facilities. Friends, neighbours and family members should be welcomed and encouraged to escort patients to improve patient understanding of disease, the implications of treatment and to ensure patient compliance to treatment. Health care providers (HCP) need to undergo training in communication skills about the culture and the language of the communities they serve.

In one study, men valued providers who seemed caring in nature, and showed excellent non verbal behaviour: such as eye contact, body language, unhurried tone and manner. The conversation between provider and client about the disease and prognosis has to be truthful, encourage questioning and throughout respect socio-cultural values. The language has to be clear, non technical and free of medical jargon.

PRESENTATION

Mbatani, Nomonde

ROLE OF BIOMARKERS IN DIAGNOSIS AND MANAGEMENT OF UTERINE CANCERS

CERVIX AND GYNAECOLOGICAL CANCERS (cont.)

11:00–12:30

Thursday

9 November

Mbatani, Nomonde¹

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Endometrial cancer (EC) is the third commonest female gynecological cancer (Globocan 2012) with the highest incidences found in more developed countries. The stage of the disease as well as the histology determine prognosis.

Two types of endometrial cancer exist as described by Jan van Bochner in 1983. This classification is based on clinical features, and prognosis. The two tumour types have also been found to have different molecular characteristics, which explain the difference in their biological behavior.

Type 1 cancers are found in the younger, perimenopausal obese woman and are usually associated with unopposed estrogen and hyper-insulinism. The prognosis is often excellent with up to 95% five year survival rates. Type 1 cancers are always endometrioid adenocarcinomas. Type 2 cancers on the other hand are associated with older age, develop in the background of an atrophic endometrium, and the cancers are not driven by estrogen excess.

Type 2 cancers typically show an aggressive clinical course and have a poor prognosis. It is not uncommon for uterine cancer specimen to have a combination of type 1 and type 2 cancers. In such cases the treatment will be aimed at treating the most aggressive histological component.

Endometrial cancer is distinguished by a number of genetic pathways such as: loss of tumour suppressor gene function, over-expression of oncogenes, increased growth factors, loss of cell to cell adhesion which results in tumor infiltration and metastasis. It is also accepted that oncogenesis assumes several pathways. These genetic changes are expressed and can be identified as biomarkers. For type 1 cancers, biomarkers involved include: PTEN, K-Ras, β -Catenin, Micro-satellite Instability (MSI). Type 2 biomarkers are: p53, E-Cadherin and recently L1CAM mutations.

Targeted therapeutic drugs aim to counteract oncogene protein action, by inhibiting cellular growth, proliferation, migration (metastasis) and invasion, processes that are expressed in cancer. The abnormal cell growth is further fed by new vessel formation (neovascularization), caused by increased vascular growth factors (VEGF) activation.

A new classification of endometrial cancer has been suggested by the Cancer Genome Atlas (TCGA) group. This classification seeks to determine markers of aggressiveness and recurrences in endometrial cancer, using molecular analysis rather than histo- pathological features.

Molecular testing in endometrial cancer in future could assist with disease classification, the prediction of lymph node involvement and prognosis and may in future assist in deciding on appropriate individual-based cancer treatments.

PRESENTATION

GENETICS/
EPIGENETICS
& OTHER
ABSTRACTS

13:30–14:30

Friday

10 November

Mbau, Lilian

AWARENESS IS NOT ENOUGH: EXPLORING ACTUAL BARRIERS TO CERVICAL AND BREAST CANCER SCREENING IN AN URBAN SLUM IN KENYA

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Background Cervical and breast cancer are important health problems for women throughout the world. Approximately 70% of deaths from cancer occur in low- and middle-income countries. In Kenya, cancer is estimated to be the third leading cause of death after infectious and cardiovascular diseases. The leading cancers in women are cervix uteri (40.1/100,000), breast (38.3/100,000). The recent Kenya STEPwise Survey for Non-communicable Diseases (NCD) Risk Factors (MOH, 2015) revealed that only 11% of women between 18-69 years have been screened for cervical cancer at least once in their lifetime (MOH, 2015). Studies have found that awareness of cervical cancer and cervical cancer screening has not translated to uptake of screening services. This study explores the barriers to cervical and breast cancer screening in an urban slum in Kenya.

Methods As part of a Global Scholars grant from the American Cancer Society, Amref Health Africa in Kenya carried out a cross-sectional survey targeting women aged 18 years residing in Kibera informal settlement, the largest slum in Nairobi, Kenya. An interviewer administered structured questionnaire was used to collect data on demographics, knowledge on cancer, experiences with screening services and perceived susceptibility to cancer. The data collected was analyzed for frequencies and proportions.

Results A total of 447 women in Kibera were included in the survey. The average age was 31 years. Majority of the women had heard about cervical cancer 90% (402/447) and breast cancer 95% (423/447). In addition, majority of women were aware if cervical cancer screening 87% (389/447) and breast cancer screening 346/447 (77%). Of these women, only 48% and 51% admitted being at risk of developing cervical cancer and breast cancer respectively. Only 34% (151/447) of women had been screened for cervical cancer within the last 5 years and 14% (62/447) had ever been screened for breast cancer. Main reasons given for not accessing cancer screening included fear of the procedure, embarrassment, unaware of screening sites, too busy, fear of bad result and feeling that they were not at risk of developing cancer.

Conclusion and Recommendation Awareness of cervical and breast cancer and screening services was high however uptake of screening services remained low. Barriers identified should be addressed through targeted messages aimed at increasing perceived susceptibility to cancer and demystifying the screening procedure. In addition, the women should be made aware of available convenient screening locations especially for breast cancer.

POSTER

WELCOME RECEPTION AND POSTER SESSION ONE

16:30–18:00

Tuesday

7 November

Mburu, Anisa

P102 | A COMPARISON OF HUMAN PAPILLOMA VIRUS VACCINATED AND NON VACCINATED ADOLESCENTS' KNOWLEDGE, PRACTICES AND ACCEPTABILITY OF CERVICAL CANCER PREVENTION AFTER HPV VACCINATION INITIATIVE IN ELDORET, KENYA

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Background Primary prevention of cervical cancer with the introduction of the Human Papilloma Virus vaccine is the next generation means to reduction of the disease burden in developing countries. Sexually active adolescents have the highest rates of prevalent and incident HPV infection rates with over 50–80% having infections within 2–3 years of initiating intercourse. From May 2012 to March 2013, through the GARDASIL Access Program, Eldoret received 9600 vaccine doses and vaccinated 3000 girls aged 9-14. To date, the impact the program had on the adolescents' understanding of the risk factors; transmission of HPV infection and the correlation to cancer of the cervix has not been evaluated. Analyzing how vaccinated youth perceive and understand the correlation of HPV infection to cervical cancer and any change in their practices can serve as the starting point for the advancement of adolescent-centered cervical cancer prevention programs.

Objective To compare the knowledge, practice and acceptability of adolescents on cervical cancer prevention after an HPV vaccination initiative among vaccinated and non-vaccinated girls.

Method This is a cross sectional comparative study carried out in public schools in Eldoret focusing on the adolescents; minimum age 12 years. The schools and participants were selected randomly then grouped into vaccinated and non vaccinated groups. Data collection was then carried out using interviewer-administered questionnaires.

Results A significantly higher proportion of those who had been vaccinated had heard of HPV vaccine (56 (93.3%) vs. 6 (5.0%), $p < 0.0001$). Compared to those who had been vaccinated, a significantly higher proportion of those who had not been vaccinated did not know how HPV was transmitted (108 (90.0%) vs. 27 (45.0%), $p < 0.0001$). A significantly higher proportion of those who had been vaccinated knew of cervical cancer (58 (96.7%) vs. 61 (50.8%), $p < 0.0001$). The participants were not different in their knowledge of risk factors for developing cervical cancer. A significantly higher proportion of those who had been vaccinated knew that cervical cancer could be prevented (58 (96.7%) vs. 102 (85.0%), $p = 0.036$). Both groups however, were indifferent on whether they would accept to be screened for cervical cancer.

Conclusion and recommendations Being vaccinated gave the girls a better chance of knowing about cervical cancer. The adolescents predominantly rely on the school for their information. It's therefore more relevant for health care providers to go to the schools for health talks and for the initiation of school-based vaccination programs.

POSTER

WELCOME RECEPTION AND POSTER SESSION ONE

16:30–18:00

Tuesday

7 November

Mbuthini, Linda

**P075 | CHECKING DATA COMPLETENESS AND QUALITY; METHOD
USED BY EASTERN CAPE CANCER REGISTRY**

Mbuthini, Linda¹; Ncinitwa, Akhona¹; Somdyala, Nontuthuzuzelo I.M.¹;
Sithole, Nomfuneko¹

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Objective Rural population-based cancer registries in Africa are faced with challenges in case finding. This is due to some limitations such as access to data sources, scarcity of experienced data collectors and not enough number of qualified pathologists. The main objective of this study is to check completeness and quality of data abstracted by data collectors in collaborating hospitals.

Methods Four collaborating hospitals are selected and included in the study from which data will be abstracted. Questionnaires of cases reported in 2014 and 2015 will be hand sorted according to hospital sources. An excel spreadsheet with two data sets will be compiled; one for questionnaires sent by part-time data collectors and the other collected by registry personnel. This quantitative technique will provide a numeric evaluation of the extent to which all eligible cases are registered. Variables selected include patient address, cancer site, date of diagnosis, basis of diagnosis, age and vital status. Total number of cases reported per source will be verified. Because same data source of information is used 100% of comparability is expected in both completeness and accuracy.

Results It is assumed that the comparison degree should be closer to 100% in order to determine and conclude on the completeness and accuracy of the data. Variations in results will be checked and discussed in detail.

Conclusion The idea behind reliability of data is that any significant results must be more than a one-off finding and be inherently repeatable.

PRESENTATION

CANCER ADVOCACY & OTHER ABSTRACTS

11:00–12:30

Thursday
9 November

McComb, Heidi Kristie

EMPOWERING CANCER CIVIL SOCIETY IN EAST AFRICA: PRELIMINARY RESULTS OF AN ORGANIZATIONAL STRENGTHENING PROGRAM IN KENYA AND UGANDA

Atyenda, Emmanuel¹; Bernacca, Zena¹; Ebusu, Paul³; McComb, Kristie¹; Wachira, Catherine²

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Objective The American Cancer Society (ACS) launched the Strengthening Organizations for a United Response to the Cancer Epidemic (SOURCE) Program in 2016 in Kenya and Uganda as part of its global NGO strengthening initiative. Cohort 1 includes 32 cancer organizations with most being/becoming members of the two national umbrella networks, the Kenyan Network of Cancer Organizations (KENCO), and the Uganda Cancer Society (UCS), supporting the development of a more effective and collaborative response to the local cancer burden.

Methods The program has three components: 1) assessment, 2) training and, 3) technical assistance, and addresses seven domains of organizational strength: 1) Governance (GOV); 2) Operations and Administration (OPA); 3) Human Resources Management (HRM); 4) Financial Management (FMA); 5) Financial Sustainability (FSU); 6) Program Management (PME); and 7) External Relations and Partnerships (ERP).

The three-year participation cycle includes four assessment points using a customized assessment and monitoring tool developed for the program; three action-planning phases, and two years of ongoing intensive, competency-based, training and technical assistance (T/TA), all of which address the findings in each assessment across the domains. Additional systematic data collection includes pre- and post-test results from trainings, and other information on characteristics of the participating cohorts, program implementation, successes and challenges, and progress results.

Results Early Cohort 1 assessment data show most organizations prioritized GOV and FMA in the first 6-month period of T/TA, though a few also addressed PME, OPA, and/or HRM. Most prioritized FSU, OPA, HRM and/or OPA in the second T/TA period. Results from the 2nd assessment demonstrate progress toward more highly-functioning organizational processes, particularly in areas prioritized for T/TA. Additionally, Cohort 1 organizations have improved collaboration within their local networks.

Conclusions Organizations addressing the growing cancer burden in Kenya and Uganda are benefiting from the program's aims to enhance efficiency, transparency, accountability, effectiveness, professionalism, and ability to leverage more resources. The development of strong, sustainable organizations promotes more effective programming and advocacy, better collaboration with other cancer control stakeholders (including government and the private sector), better use of resources, and improves health-related outcomes across the cancer care continuum over time.

POSTER

POSTER SESSION TWO

16:30–18:00
Thursday
9 November

McComb, Heidi Kristie

P355 | PERMA-GARDENING: PRELIMINARY RESULTS FROM AN INTERVENTION TO ENHANCE NUTRITION AND EASE FINANCIAL BURDEN OF CANCER PATIENTS AND CAREGIVERS

Agaba, Nelson¹; Bernacca, Zena¹; Ebusu, Paul³; Jensen, Peter²;
McComb, Kristie¹; Nkusi, Gerald²

¹American Cancer Society; ²Terra Firma Unlimited; ³Uganda Cancer Society

Correspondence kristie.mccomb@cancer.org

Objective The American Cancer Society facilitated the introduction of the Permagardening approach with patient hostels and patient support organizations in Uganda in March 2017. Permagardening is a gardening technique that is home based, climate-smart, organic, and nutrition-focused. The purpose was to offer a practical hands-on TOT to organizations so that they are capable to train cancer patients and their caregivers on the technique which enhances the quality of diets, reduces financial burdens as food can be grown year-round, and supports emotional well-being and healing. For patient hostels, the technique can also assist in reducing operational costs associated with having to continually purchase food for clients.

Methods An intensive three-day training with a two-day training follow up after three months provides participants knowledge and skills in the principles and practice of Permagardening so that they can train cancer patients and caregivers to build permagardens when they return home post-treatment. The training offers a can-do, simple steps approach that is motivational and empowering. Ongoing consultation is also provided in the initial year on an as-needed basis to ensure that organizations are confident to address any challenges that arise as they expand the technique to the populations they serve.

Results This program has inspired and motivated the cancer patient support community in Uganda to provide even more practical, holistic, and sustainable services to their patients. Seven of eight participating organizations developed at least one demonstration permagarden within four weeks of the initial training, and all organizations are developing strategies for expanding the technique with their client population.

Conclusions Permagardening is a practical, low-cost intervention that has multiple benefits to cancer patients, their caregivers, and families (and patient hostels): occupational/stress therapy, enhanced nutrition, and reduced financial burden. Widespread adoption of this technique can promote healthier eating; increase treatment adherence due to greater tolerance of treatments; reduce patients' and caregivers' financial barriers at a time when extra costs are high; impart practical, teachable skills; and ultimately, improve health outcomes.

PRESENTATION

OESOPHAGEAL CANCER RESEARCH

11:00–12:30

Friday

10 November

McCormack, Valerie

OVERVIEW OF CASE-CONTROL STUDIES: RECRUITMENT AND STUDY HARMONIZATION

McCormack, Valerie¹; on behalf of the AfrECC ESCCAPE case-control studies

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The epidemiologic evidence base for squamous cell oesophageal cancer in Africa is thin: other than in South Africa, few aetiologic studies have been conducted since the 1970–80s. Thus, this poor-prognosis disease still dominates the disease burden in East Africa, especially in men. There are few or no targeted primary prevention strategies. Many modifiable risk factors have been well-established elsewhere in the world, but have not been fully investigated in Africa.

Since 2014, multiple efforts are underway in East Africa that will together inform the aetiology of this cancer across the African oesophageal cancer corridor. In this talk we will introduce the ESCCAPE case-control studies of the AfrECC consortium. Through this international collaboration, the studies are being jointly co-ordinated to include a common and broad range of putative risk factors. Recruitment at six sites in Bomet and Eldoret, Kenya; Dar es Salaam and Moshi, Tanzania; and in Blantyre and Lilongwe, Malawi is ongoing, or has already been completed. We will introduce the sites, and showcase the standardization of protocols and data and sample collections. The collaborative effort is already revealing important risk factors for prevention and promises to deliver, in the short-term, an efficient harmonized resource for corridor-wide investigations to maximize insights into risk factors for oesophageal cancer in Africa.

POSTER

McGoldrick, Suzanne

P325 | A PATHOLOGIC MISDIAGNOSIS IN CHILDREN WITH SUSPECTED BURKITT LYMPHOMA IS ASSOCIATED WITH EARLY MORTALITY

Casper, Corey^{1,4}; Geriga, Fadhil²; Krantz, Elizabeth¹; Kussick, Steve³; McGoldrick, Suzanne¹; Mutyaba, Innocent²

¹Fred Hutchinson Cancer Research Center; ²Uganda Cancer Institute;

³PhenoPath; ⁴Infectious Disease Research Institute

**POSTER
SESSION
TWO**

16:30–18:00

Thursday

9 November

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Objective To determine the frequency and impact of an incorrect histopathologic diagnosis in children with suspected Burkitt Lymphoma (BL) presenting to the Uganda Cancer Institute (UCI), using a case-control study design.

Methods Children presenting to the UCI with suspected BL between July 2012 and December 2014 with available baseline tumor tissue were enrolled in a prospective cohort study and followed for a median of 10.2 months. From this cohort, we selected a convenient sample of 20 children who died within 3 months of enrollment (cases) and 29 children who survived for at least 3 months (controls). Formalin fixed and paraffin embedded (FFPE) tumor blocks were obtained from local pathology laboratories. Blocks were sectioned in a local histology lab, and slides shipped to a US-based pathology laboratory where Hematoxylin and Eosin (H&E), immunohistochemistry (IHC, CD20, c-Myc, and TdT), and EBER-1 in situ hybridization (ISH) were performed. We defined a misdiagnosis as a discrepancy between the pathologic diagnosis confirmed by IHC/ISH, and the diagnosis rendered in Uganda based on available workup. Advanced disease stage included Ziegler stage C or D based on physical exam. We used logistic regression with odds ratios (OR) and 95% confidence intervals (CI) to determine associations between misdiagnosis and early mortality.

Results All 49 samples reviewed in Uganda were evaluated with H&E alone. Median age was similar between cases (8.2 years, range 1–17) and controls (7.2 years, range 1–16). Cases had higher proportions of , advanced stage disease (74% versus 56%), and ECOG status of 2–4 (72% versus 46%) compared to controls. The IHC/ISH diagnosis was BL for 65% (13/20) of cases compared to 79% (23/29) of controls. The remaining cases included DLBCL (n=1), PNET (n=1), RMS (n=1), other malignant tumors (n=3), and benign condition (n=1). Remaining controls included RMS (n=2), benign conditions (n=3) and not evaluable (inadequate viable tissue, n=1). Nine (45%) cases and 4 (14%) controls had a misdiagnosis. Misdiagnosis was associated with early mortality in univariate (OR 5.1, 95% CI 1.3-20.2; p=0.02) and multivariate models (OR 13.1, 95% CI 1.9–88.9; p=0.009) adjusted for age, stage and ECOG status.

Conclusions Diagnosing BL remains challenging in resource-limited areas, at least in part due to a lack of IHC/ISH. We observed a significant association between misdiagnoses and early mortality. This result should be confirmed in a larger sample representative of all children presenting with suspected BL, but suggests diagnostic limitations may contribute to the poor survival in low-resource settings.

PRESENTATION

HIV AND
SITE SPECIFIC
CANCER
ABSTRACTS
08:25–09:25
Friday
10 November

McKenzie, Fiona

DELAY INTERVALS IN DIAGNOSIS WITHIN THE MULTI-COUNTRY AFRICAN BREAST CANCER – DISPARITIES IN OUTCOME (ABC-DO) COHORT STUDY

McKenzie, Fiona¹

¹International Agency for Research on Cancer

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Objectives Breast cancer (BC) survival rates in sub-Saharan Africa (SSA) are low, in part due to advanced stage at diagnosis. The African Breast Cancer – Disparities in Outcomes (ABC-DO) study is an m-Health technology-implemented study of breast cancer survival in multiple SSA settings, which includes the mapping of the pre-diagnostic pathway in each setting. Delay intervals in this pathway were examined among ABC-DO participants.

Methods Commencing September 2014, ABC-DO recruitment of newly diagnosed women with BC is completed in Namibia, Nigeria, and Uganda, but is ongoing in Zambia. Face-to-face baseline interviews at diagnosis obtained data on sociocultural factors, healthcare access and beliefs, and self-reported journey to diagnosis. Clinical data were extracted from medical records. Logistic regression was used to estimate odds ratios (OR) of interval delays adjusted for age, site, and ethnicity.

Results To date, 1475 women have been enrolled across these four sites. Median age at diagnosis was 49 years (inter-quartile range (IQR): 40–60). Time from symptom recognition to contact with a health provider was 2.8 months (IQR: 0.5–8.0); time from first health provider to diagnosis was 2.1 months (IQR: 0.3–8.7), and overall time from symptom recognition to diagnosis was 7.5 months (IQR: 3.1–19.2). Delay intervals >3 months to first provider visit were associated with low education (OR=1.30, $p=0.03$), unskilled employment (OR=1.32, $p=0.03$), rural residence (OR=1.27, $p=0.05$), and having no comorbidities (OR=1.27, $p=0.04$). Delay intervals of >2 months from provider to diagnosis were associated with unskilled employment (OR=1.41, $p=0.01$), no health insurance (OR=1.97, $p=0.002$), nulliparity (OR=1.46, $p=0.05$), belief in spiritual medicine (OR=1.49, $p=0.004$), and when the first symptom was a change in shape of the breast (OR=1.73, $p=0.009$).

Conclusions Long delays between symptom recognition and breast cancer diagnosis are present in SSA. Findings indicate that long delay intervals in the pre-diagnostic pathway are more prevalent in disadvantaged groups.

PRESENTATION

Meheus, Filip

COST-EFFECTIVENESS AND AFFORDABILITY IN MAKING CANCER CONTROL DECISIONS

IMPROVING SYSTEMS:

PUBLIC HEALTH & ECONOMICS

(cont.)

14:40–16:30

Tuesday

7 November

Meheus, Filip¹; Ilbawi, Andre²

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The annual number of new cases of cancer is expected to increase from 14.1 million in 2012 to 24 million new cases by 2035. Cancer is also the second leading cause of death worldwide with 8.2 million cancer-related deaths, with the majority occurring in low –and middle-income countries. The increasing burden and costs of cancer control poses considerable challenges to health care budgets, in particular in low-resource settings. Health care budgets are often fixed, and new (and usually more expensive) interventions may be difficult to introduce even if they have been shown to represent good value for money. In this presentation we will discuss the concepts of cost-effectiveness and affordability in the context of cancer control. We will highlight recent work by the World Health Organization that identified a set of interventions considered “best-buys” for the updated appendix 3 of the Global Action Plan for Non-Communicable Diseases 2013–2020.

PRESENTATION

Meheus, Filip RESOURCE MOBILISATION AND ALLOCATION FOR NCCP IMPLEMENTATION

NATIONAL CANCER CONTROL PROGRAMMES

07:15–08:20

Wednesday

8 November

Meheus, Filip¹

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Worldwide, the health and economic burden of cancer is rapidly increasing and results in a significant and growing economic impact of cancer estimated around US\$ 1.16 trillion in 2010. Implementation and maintenance of a national cancer control programme (NCCP) requires strengthening of the health system and adequate resource mobilization and allocation to achieve its objectives. The increasing health and economic burden poses considerable challenges to countries establishing a national cancer control programme, in particular in low-resource settings. In this presentation, we will provide an overview of the different revenue sources for health, including domestic resources, external funding and innovative financing mechanisms. We will highlight the implications in terms of fairness, efficiency and predictability of the different sources of financing, and discuss these with examples from African and other LMIC countries.

POSTER

POSTER SESSION TWO

16:30–18:00

Thursday

9 November

Mendoza, Andre

**P239 | BREAST CANCER INCIDENCE IN KENYA, GHANA AND NIGERIA:
TESTING VALIDITY OF CURRENT ASSUMPTIONS**

Mendoza, Andre¹; Mueller, Borna¹; Laryea, Dennis²; Ngho, Charles¹

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Background Public health officials and other stakeholders in low and middle income countries (LMIC) can often only rely on extrapolating local registry rates to estimate nation-wide breast cancer incidence and understand access to breast cancer care. Depending on the level of quality of the local registries and their setting, this reported burden may be largely imprecise. We applied a consistent methodology to compare expected breast cancer incidence with current incidence assumptions for three countries of Sub Sahara Africa (SSA) – Kenya, Ghana and Nigeria- that have variable registry quality and extrapolation methods.

Methods We first calculated expected breast cancer incidence by applying age-specific incidence rates in African-American female populations in the United States (USA) to the populations in each of the three SSA countries in 2012. Population attributable fraction methods were then used to adjust for prevalence of breast cancer risk factors in each country. To account for difference in access to diagnostic facilities between SSA countries and USA, a previously published impact of the mammography screening program on breast cancer incidence in USA was applied (Beyer et al. 2012). We compared expected incidence with incidence estimated by Globocan for 2012. We conducted several sensitivity analysis assuming different baseline incident rates and adjustments. As validation, we repeated the approach for Australia hypothesizing that the expected incidence should match the reported incidence.

Results There was a total of 4'465, 2'260 and 27'304 breast cancer incident cases reported in Globocan for 2012 in Kenya, Ghana and Nigeria, respectively. After adjusting for risk factors and screening impact, we derived ratios of expected to reported cases of 1.37 for Kenya and 1.89 for Ghana, representing an unaccounted breast cancer incidence in 2012 of 27% in Kenya and 47% in Ghana. For Nigeria the ratio expected-reported was close to one, as calculated for Australia, suggesting good validity of current breast cancer incidence assumptions. Results were similar when other rates and adjustments were assumed in sensitivity analysis.

Conclusions Breast cancer incidence in Kenya and Ghana could be largely underestimated supporting the need for more complete registries in most SSA countries as first step for better resource preparedness and allocation. Using incidence rates from countries with high levels of registry completeness, accounting for ethnicity, risk factors and differences in diagnosis capacity, can be a useful approach to quantify the true burden of breast cancer in LMCI and improve within and across country comparability.

POSTER

**WELCOME
RECEPTION
AND POSTER
SESSION ONE**
16:30–18:00
Tuesday
7 November

Mika, Marissa

**P058 | THE HISTORY OF AFRICANIZING BURKITT'S LYMPHOMA
RESEARCH IN UGANDA**

Mika, Marissa¹

¹University College London

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In 1958, the British Journal of Surgery published an article entitled “A sarcoma involving the jaws in African children” written by an Irish surgeon working for the British colonial medical administration at Mulago Hospital in Kampala, Uganda. Dr. Denis P. Burkitt argued that this disfiguring, fast growing tumor was the commonest childhood malignancy in Uganda. Although the tumor was fatal, unresponsive to surgical excision, and totally puzzling in clinical presentation, the paper went largely unnoticed. Burkitt spent the next decade or so charting the geographic distribution of the affliction and experimenting with nitrogen mustard and other chemotherapy regimens on patients. Using a camera, Burkitt documented extraordinary tumor regressions with chemotherapy treatments. Going on tumor safari, Burkitt and colleagues drove throughout eastern, southern, and central Africa, using these photographs and hospital records to establish a map of the tumor’s geographical reach in sub-Saharan Africa—remarkably similar to patterns seen in yellow fever and malaria.

By the late 1960s, this childhood malignancy was named Burkitt’s lymphoma and the National Cancer Institute opened the Lymphoma Treatment Center in Kampala to do randomized controlled trials of chemotherapy on this pediatric lymphoma. Over the course of two decades, cancer transformed in Uganda from a largely invisible and seemingly rare affliction into an exciting and cutting edge set of diseases to be researched, treated, and understood.

This presentation explains how and why cancer became a visible object of medical care and research in Uganda in the 1950s and 1960s. I show how Burkitt’s discovery of the lymphoma was contingent on the broader culture of medical research in Uganda at the time. I discuss how a fusion of missionary medicine ideals, ongoing hypotheses regarding the linkages between environments, insects, and tropical diseases, and emerging anxieties about postcolonial development and non-communicable diseases converged around the problem of cancer. Burkitt’s lymphoma, with its shocking presentation and remarkable responses to chemotherapy alone, made cancer visible in Uganda. Longstanding inquiry into tropical diseases and infrastructure for medical care in the country made cancer research in postcolonial Uganda possible.

Drawing on a rich photographic archive and ongoing historical and ethnographic research at the Uganda Cancer Institute, this presentation aims to highlight one of the most critical historical contributions to cancer research and care in eastern Africa. These are innovations that continue to shape research and care in the present.

PRESENTATION

**CAPACITY
BUILDING
FOR
PATHOLOGY
IN AFRICA**
11:00–12:30
Wednesday
8 November

Milner, Danny

**PARTNERS FOR CANCER DIAGNOSIS AND TREATMENT IN AFRICA:
AN ASCP PATHOLOGY INITIATIVE**

Milner, Danny¹

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In 2015, in response to the awareness of the cancer crisis in Africa, the ASCP launched the Partners initiative which is a collaboration of multiple partners to address the gaps in diagnosis for cancer across the continent. Through assessment, implementation planning, execution, and ongoing support, telepathology is used as a primary tool to meet the diagnostic needs of patients in LMICs. The story of Rwanda's Butaro District Hospital will be described as a stepwise model for pathology implementation for which the Partners Initiative, learning from this experience, can leapfrog other sites to full functionality in minimum time. The importance of quality for the entire pathology process will be emphasized as well as the role of telepathology beyond providing access to secondary consultants for diagnosis will be described.

PRESENTATION

EPIDEMI- OLOGY

ABSTRACTS

14:40–16:30

Wednesday

8 November

Minas, Tsion

AN IFNL4 POLYMORPHISM PREDISPOSES TO AGGRESSIVE PROSTATE CANCER AMONG THOSE EXPOSED TO SEXUALLY TRANSMITTED AGENT DURING EARLY ADULTHOOD

Minas, Tsion¹; Tang, Wei¹; Smith, Cheryl¹; Dorsey, Tiffany¹; Obadi, Obadi¹; Loffredo, Christopher²; Ambs, Stefan¹

¹National Cancer Institute, National Institute of Health; ²Georgetown University Medical Center

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Objective Prostate cancer incidence and mortality rates are highest among men with African ancestry, both in the U.S. and globally. Socioeconomic status and access to care alone do not explain the disparity. Previously, our group reported that prostate tumors in African-Americans (AA) harbor a distinct immune-inflammation signature absent in European-Americans (EA), suggesting that differential susceptibility to an infectious agent may play a role in the tumorigenesis of prostate cancer in men with African ancestry. IFNL4- Δ G allele (rs368234815), a common germline variant in Africans, is associated with impaired viral clearance. Thus, we hypothesized that increased likelihood of exposure to sexually transmitted agents, as assessed by the number of sexual partners, may increase prostate cancer risk in men of African descent in an IFNL4- Δ G-dependent manner.

Methods Multivariable logistic regression models were used to examine the association between the number of sexual partners and prostate cancer in the NCI-Maryland Prostate Cancer Case-Control Study. The study included 976 prostate cancer cases (489 AA and 487 EA) and 1034 population controls without disease diagnosis (486 AA and 548 EA). Sexual history (pre-diagnosis) was self-reported using a questionnaire.

Results We observed that men who had 10 or more sexual partners in their 20s had an increased risk of diagnosis with aggressive prostate cancer especially in AA men (OR, 2.46; 95% CI, 1.18–5.17; $p=0.018$) while not in EA men (OR, 0.91, 95% CI, 0.46–1.80, $p=0.778$). IFNL4 polymorphism modified this risk. Those with at least one copy of the IFNL4- Δ G allele had the highest risk of developing aggressive prostate cancer (OR, 2.36; 95% CI, 1.27–4.39; $p=0.007$) while those lacking this allele had the lowest risk (OR, 0.74, 95% CI, 0.31–1.80, $p=0.511$). Furthermore, having two copies of IFNL4- Δ G allele was associated with more risk than having one copy of the allele.

Conclusions The more sexual partners men had during early adulthood, the greater their odds of developing prostate cancer, particularly an aggressive type. This association was more prominent in men of African descent and was modified by the IFNL4 locus. IFNL4- Δ G, the variant predominantly present in those with African ancestry, is the functional variant that has previously been linked to impaired spontaneous viral clearance following infection. Taken together, these findings suggest that differential exposure to sexually transmitted agents and inability to clear these agents may promote the pathogenesis of an aggressive prostate cancer. Hence, IFNL4- Δ G may partly explain why men with African ancestry disproportionately bear the prostate cancer burden.

POSTER

POSTER SESSION

TWO

16:30–18:00

Thursday

9 November

Mohamed, Zainab

P266 | NON-HODGKIN'S LYMPHOMA SUBTYPES IN AFRICA: A LITERATURE REVIEW

Mohamed, Zainab¹

¹University of Cape Town

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Introduction Non-Hodgkin's lymphoma is listed as the 6th commonest cancer in Africa as per the 2012 WHO/IARC figures. Africa is presumed to have a different spectrum of NHL subtypes from that occurring in Europe and North America. This study attempts to find data to substantiate this claim and elucidate the common and unique lymphoma subtypes found in Africa.

Method A Pubmed and Google scholar search was performed using the keywords "lymphoma/lymphoma subtypes in Africa". Only studies utilising the WHO Classification of Lymphoid neoplasms were selected

Results The literature search yielded 3 multicentre and 3 single centre studies. A recent study reviewed 467 biopsies from 4 African countries (Uganda, Tanzania, Kenya and Nigeria) using the 2008 WHO Classification of Lymphoid neoplasms. The International Non-Hodgkin's Lymphoma Classification Project conducted 2 studies in Africa. The first was performed in North Africa, the Middle East and India. Results for Algeria and Egypt (327 biopsies) were extrapolated from this study. The second study analysed 487 specimens from South Africa and Zimbabwe. Data from these 3 studies were compared to data from the International NHL Classification Project studies conducted in Western Europe and North America. The studies above were all performed at different time periods from 1985-2012 and did not take the influence of HIV into account. In addition the International NHL Classification Project used the 2001 WHO classification. Diffuse Large B-cell lymphoma is the commonest lymphoma in African countries (38.2-55%). Burkitt lymphoma is more common in African countries (1.6-9%) than in Western Europe and North America (0.8-0.9%); and plasmablastic lymphoma (3.6%) is only noted in the study utilising the 2008 WHO classification. Less aggressive lymphomas like Follicular lymphoma, Mantle Cell, MALT and Marginal zone lymphoma are much less frequently diagnosed in Africa. The rates of CLL/SLL is similar in all regions. Two South African studies noted an increase in the rates of DLBCL, Plasmablastic and Burkitt lymphoma with the increased incidence of HIV.

Conclusion There is a dearth of knowledge on NHL subtypes encountered in Africa. The effect of the HIV epidemic on NHL in Africa has only been investigated in single-centre studies. In order to conduct research in this field, and to ultimately improve patient outcome, accurate diagnosis is required. This necessitates investment into education; as well as diagnostic and therapeutic services.

POSTER

WELCOME RECEPTION AND POSTER SESSION ONE

16:30–18:00

Tuesday
7 November

Mohamed, Zainab

P420 | HIV-ASSOCIATED MULTI-CENTRIC CASTLEMAN'S DISEASE: A CLINICAL REVIEW OF 53 CASES PRESENTING TO A SINGLE INSTITUTION IN SOUTH AFRICA

Mohamed, Zainab¹; Chetty, Dharshnee¹; Opie, Jessica¹; Verburgh, Estelle¹
¹University of Cape Town

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Objectives The advent of HIV led to the emergence of formerly rare disease entities like Multicentric Castleman's Disease (MCD). This study aims to examine the clinicopathologic characteristics and survival of a cohort of HIV-positive patients being managed for MCD in a resource-limited setting.

Patients and Methods This is a retrospective review of 53 patients with HIV-associated MCD seen from July 2005 to December 2016. Demographic and descriptive data were obtained from patient charts. Survival analysis and examination of potential prognostic factors was performed.

Results The cohort was 72% male with a median age of 37 years (22–64). At presentation 53% were ECOG PS 0–1 and 47% were PS 2–4. B-symptoms were reported by 94% of patients. Overall 75% of the group were on ARVs for ≥ 1 month at diagnosis of MCD; and the median period on antiretroviral therapy was 12 months (1–72 months). Median CD4 count was 145 (7–700). All patients were anaemic at presentation with a median Hb of 7.3g% (2–11.3g%) and 56% presented with bicytopenia. Median serum albumin was low at 20.5g/l (12–42g/l).

CT scan results were available for 47 patients (89%) and demonstrated generalised lymphadenopathy in 98%. Splenomegally and hepatomegally was documented in 70% and 60% respectively. Lung involvement was seen in 36% of cases with nearly half of these being suspicious for Kaposi sarcoma. Mucocutaneous Kaposi sarcoma was clinically diagnosed in 10 patients (8 simultaneously with MCD diagnosis). KS was noted in 12 out of 44 lymph node biopsies (27%), however only 2 patients had both lymph node involvement and clinical KS. HHV8 was positive in all but 1 lymph node biopsy (98%). Just under 50% of the group received 5 or more cycles of CHOP. Median survival for the cohort was 3.25 years, however PS 0–1 and receiving ≥ 5 cycles of CHOP were significantly associated with survival (logrank HR=0.23 (0.08–0.6) and HR=0.28 (0.1–0.76) respectively).

Conclusions Rituximab combined with chemotherapy is the international gold standard for the treatment of MCD, however it is not freely available in resource-constrained environments. This study demonstrates that MCD in the HIV-positive population can be treated successfully with Etoposide and CHOP, however ECOG PS² at presentation is an indicator of poor outcome.

PRESENTATION

IMPROVING SYSTEMS: PUBLIC HEALTH & ECONOMICS

11:00–12:30

Tuesday

7 November

Moodley, Jennifer

ACHIEVING EARLIER DIAGNOSIS OF SYMPTOMATIC CANCER

Moodley, Jennifer¹

¹University of Cape Town

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Cancer is a complex disease that places significant burden on women, families and society. In 2012 more than half of the 14.1 million cases and almost two-thirds of the 8.2 million cancer deaths occurred in less developed regions of the world. The global cancer burden is projected to increase by 50% by 2030 and, disturbingly, most of the increase will occur in developing countries, including Africa. Late stage at presentation, with associated higher morbidity and mortality, is a feature of most cancers in Africa.

Worldwide, the majority of are diagnosed on the basis of symptomatic presentation despite cancer screening programmes. Consequently, understanding processes related to cancer symptom epidemiology are important in exploring steps that can be taken to improve timely cancer diagnosis. For people with potential symptoms of cancer, the pathway to cancer diagnosis is complex. Internationally, research has shown that personal, disease and healthcare factors are associated with the timeliness of seeking care for symptomatic disease and can contribute to late stage presentation. The time between first detection of a potential cancer symptom by an individual and subsequent presentation to a health care facility is often the greatest contributor to the total time taken to diagnosis. In most developing countries patients with potential cancer symptoms will initially present to primary health care facilities Primary care providers thus play a pivotal role in cancer diagnosis and referral. A particular challenge facing both patients and primary level providers in Africa may be the overlap between cancer symptoms and symptoms arising from common health conditions. Ease of access to referral diagnostic facilities is another factor affecting stage at presentation, particularly in public sector settings. Understanding the factors influencing the pathway to cancer diagnosis in Africa is vital to the development of effective timely diagnosis interventions.

The Model of Pathways to Treatment provides a useful research framework to explore and understand patient's journeys as it takes into account the complex and dynamic nature of help-seeking behavior. The Model identifies five key events in the pathway to care viz. detection of bodily changes; perceived reasons to discuss symptoms with a health care provider; first consultation with a health care provider; diagnosis and start of treatment, and four important intervals between these events: the appraisal, help seeking, diagnostic and the pre-treatment intervals. The Model will be used to discuss what we know about pathways to cancer diagnosis as well as identify research gaps.

PRESENTATION

Moodley, Jennifer

FROM SYMPTOM DISCOVERY TO TREATMENT: WOMEN'S PATHWAYS TO BREAST CANCER CARE

**HIV AND
SITE SPECIFIC
CANCER
ABSTRACTS**

08:25–09:25

Friday

10 November

Moodley, Jennifer¹; Cairncross, Lydia¹; Naiker, Thurandrie¹;

Constant, Deborah¹

¹University of Cape Town

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Background Breast cancer is the leading female cancer in South Africa (SA). As with most resource-constrained countries SA does not have a national mammography screening program and diagnosis of breast cancer is typically based on symptomatic presentation. Appropriate recognition of breast symptoms, improved access to health facilities and accurate investigation of symptomatic women are essential to down stage breast cancer. The aim of this study was to understand women's pathways to breast cancer diagnosis and factors influencing this journey.

Methods A cross-sectional study was conducted at a tertiary hospital in the Western Cape Province, SA, between May 2015 and May 2016. Using a structured questionnaire, 204 newly diagnosed breast cancer patients were interviewed to determine their socio-demographic profile; knowledge of risk factors, signs and symptoms; habits and beliefs; clinical profile; key time events in the diagnostic journey and associated factors. The Model of Pathways to Treatment Framework underpinned the enquiry and analysis. Factors associated with the median patient, diagnostic and treatment intervals were analyzed using bivariate and Cox regression analysis.

Results The majority of women (73%) presented with a breast lump. Median time from first symptom discovery to treatment was 110 days (IQR 67–178). Overall 22% presented with late stage (III and IV) disease. Median patient, diagnostic and pre-treatment intervals were 23, 28 and 37 days respectively. Predictors of the patient interval were: an initial symptom appraised as possibly breast cancer (HR 1.70, 95% CI 1.07–2.63) and; an increase in lump size serving as a trigger for seeking care (HR 0.52, 95% CI 0.35–0.77). Women with a past history of benign breast disease or a history of other co-morbidities had a significantly longer diagnostic interval compared to those with no co-morbidities (median interval 48, 30 and 20 days respectively, $p = 0.004$). The length of the pre-treatment interval was associated with early stage at diagnosis (HR 1.8, 95% CI 1.11–3.19) and surgery as the first mode of treatment as compared to chemotherapy or radiotherapy (HR 2.8, 95% CI 1.17–6.62).

Conclusion The Model of Pathways to Treatment provides a useful framework to explore patient's journeys to care and identifies opportunities for targeted interventions to promote timely diagnosis of breast cancer.

POSTER

WELCOME RECEPTION AND POSTER SESSION ONE

16:30–18:00

Tuesday

7 November

Moses, Agnes

**P103 | RISK FACTORS FOR COMMON CANCERS IN PATIENTS AT
KAMUZU CENTRAL HOSPITAL, LILONGWE, MALAWI**

Moses, Agnes¹; Gopal, Satsh¹; Stanely, Christopher¹; Chikasema, Maria¹;
Hosseini pour, Mina¹

¹University of North Carolina

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Purpose Little is known about risk factors for different cancers in Malawi. The main aim of this study was to assess risk factors and distribution for common cancers at Kamuzu Central Hospital (KCH), in Lilongwe. The secondary objective was to determine prevalence of the Human Immunodeficiency virus (HIV) infection, in the same population.

Methods We analyzed data from the hospital-based KCH Cancer Registry from June 2009 to September 2012, including data from a nested sub-study on co-infections among cancer patients. Demographics and behavioral variables including smoking, alcohol use, were collected through personal interviews with patients. We assessed HIV prevalence across cancer types. Prevalence of cancer types was reported overall and by gender. Logistic regression was used to assess risk factors associated with common cancer types.

Results Data from 504 registered cancer patients were included. 300 (59.5%) were female and 204 (40.5%) were male. Mean age was 49 (SD=16) years. 343 (71.2%) were HIV-negative and 139 (28.8%) were HIV-positive. The common cancers were esophageal (172, 34.5%), cervical (109, 21.9%), Kaposi sarcoma (KS) (52, 10.4%). Only 18% of cancer cases were pathologically confirmed. At 95% Confidence Interval, Patients with esophageal cancer were likely to be >50 years (OR=2.22), male (OR=1.47) and smoker (OR=2.02). Kaposi Sarcoma patients had the highest (54.4) odds of being HIV-positive, and were more likely to be male (OR=6.02) and smokers. Cervical cancer patients were more likely to be HIV-positive (OR 2.2) and less than 50 years of age.

Conclusions The study describes cancer burden at Kamuzu central Hospital, a referral and teaching hospital in Malawi, and demonstrates that age, smoking, and alcohol are important risk factors for the three commonest cancer types. HIV is an additional risk factor for Kaposi Sarcoma and cervical cancer. HIV prevalence rate is twice as high in cancer patients as in general population. Longitudinal studies are required to confirm associations and to assess trends in cancer burden over time.

POSTER

Moses, Agnes

P228 | ESTABLISHING A NOVEL BREAST CANCER CLINICAL COHORT IN MALAWI

**POSTER
SESSION
TWO**

**16:30–18:00
Thursday
9 November**

Gopal, Satish^{1,2,3,4}; Kumwenda, Wiza¹; Moses, Agnes^{1,2,3,4}; Nyasosela, Richard⁴; Tomoka, Tamiwe^{1,3,4}; Zuze, Takondwa^{1,4}

¹UNC Project; ²University of North Carolina; ³University of Malawi;

⁴Kamuzu Central Hospital

Correspondence amoses@unclilongwe.org

Background Breast cancer is the fourth commonest cancer in Malawi, and associations with HIV are uncertain. Historically at Kamuzu Central Hospital (KCH) in Lilongwe, there are approximately 50 new breast cancer cases per year, with 23% being HIV-positive compared with 11% national HIV prevalence. Additionally, 55% of patients are <50 years. However, there has not been detailed clinical and histologic characterization of breast cancer in Malawi to date.

Objectives The KCH Breast Cancer Cohort aims to develop the first prospective cohort of breast cancer patients who will be comprehensively characterized with respect to clinical, laboratory, and histopathologic features, while receiving care according to local standards. Secondary objectives include assessing if clinical characteristics, treatment tolerance, and outcomes differ by HIV status. The study will also assess feasibility and acceptability of interviewing patients for risk factors and health-related quality of life, and of obtaining tumor blocks suitable for molecular profiling.

Methods The study began enrollment in December 2016. All newly diagnosed breast cancer patients are eligible for enrollment after informed consent. Each subject receives an initial standardized assessment, including sociodemographic data, clinical examination, HIV testing, laboratory investigations, and radiologic studies. Confirmed breast cancer cases are further assessed for histologic grade using the Nottingham scale, and for hormone receptor status and HER2 using immunohistochemistry. Standardized follow-up evaluations are also done during and after treatment for up to two years from the enrollment date.

Results To date, 21 women have been recruited, with median age 51 years (range 27–76). Eight patients (38%) are HIV-positive, all of whom were receiving antiretroviral therapy at breast cancer diagnosis. Nineteen patients (90%) presented with TNM stage IIIB or greater. Pathologically, 33% were grade 3, and 36% were HR-positive. Reflecting disease stage at presentation, initial treatment modalities were neoadjuvant chemotherapy (n=19), surgery (n=1), and palliative chemotherapy (n=1). To date, no grade 3/4 chemotherapy toxicities have occurred in HIV-positive or HIV-negative women.

Conclusion Establishing a novel longitudinal breast cancer cohort was feasible in Malawi. Early experience suggests relatively young age, high HIV prevalence, and adverse disease characteristics including advanced stage and frequent HR negativity. Robust participation by medical, surgical, and pathology departments provides a strong foundation for comprehensive, integrated data, which can be uniquely informative for Malawi and other African settings as the study proceeds. Anticipated benefits also include improved quality and coordination of multidisciplinary care for study participants.

PRESENTATION

Moshokoa, Evelyn

THE ROLE OF PROSTATE SPECIFIC MEMBRANE ANTIGEN IMAGING IN METASTATIC PROSTATE CANCER

**BLADDER
AND**

**PROSTATE
CANCER**

11:00–12:30

Thursday

9 November

Moshokoa, Evelyn¹; Sathekge, Mike¹

¹University of Pretoria

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Introduction Prostate cancer is the most common cancer in men. The diagnosis of prostate cancer is changing, the current improvement is towards targeted biopsies with MRI fusion. In Metastatic disease there is a need for targeted treatment for metastatic lesions. In South Africa most patients have advanced /metastatic prostate cancer (PCa) at initial diagnosis. Prostate Specific Membrane Antigen (PSMA) Is a transmembrane glycoprotein expressed in the secretory cells of prostate epithelium and it is also found in vasculature of many tumors. PSMA radiotracers labeled with a variety of radionuclides for positron emission tomography (PET) imaging applications have been developed and explored in recent studies.

Methods Findings of imaging used for staging PCa depends on morphology of lymph nodes or bone metabolism. In Standard staging procedures, Bone scan is recommended. More studies have to be done to evaluate both soft tissue and bone metastasis. Advantage of imaging techniques that will be for both diagnostic and therapeutic reasons. PSMA-targeted radiotracers have been found to be superior to conventional imaging and other molecular imaging agents for the detection of locally recurrent and metastatic PCa and also for theranostics. There is over-expression in aggressive tumors, androgen-independence, and metastatic/recurrent disease. Imaging with PSMA PET/CT is used Diagnose, stage and monitor patients to tailor and individualize targeted radionuclide therapy. Furthermore, in patients with biochemically recurrent prostate cancer, use of ⁶⁸Ga-PSMA–PET imaging has been shown to increase detection of metastatic sites, even at low serum Prostate specific antigen (PSA) values, compared with conventional imaging or PET examination with different tracers.

Results We present the treatment with ²¹³Bi-PSMA-617 in a patients with PCa that is progressive under conventional therapy. Restaging with ⁶⁸Ga-PSMA PET/CT after months confirming remarkable molecular imaging response. In the case studies where PSMA is used as the targeting (or tracer) medium for staging and treating prostate cancer. Our cases supports the need further exploration on the use and supply of targeted α -radiation therapy.

Conclusion PSMA-RLT with ¹⁷⁷Lu-PSMA together with ⁶⁸Ga-PSMA PET/CT, holds great promise as a safe treatment option in patients with Stage 4 disease, and is an excellent example of theranostic nuclear medicine. Indications and applications for PCa PSMA PET imaging require large, prospective, systematic clinical trials for validation. The costs appear to be a deterrent. The large numbers will define and refine the utility of PSMA-targeted PET imaging to improve the management of PCa patients.

PRESENTATION

Motsuku, Lactatia

TRENDS IN LUNG CANCER INCIDENCE AND SMOKING RATES AMONG SOUTH AFRICAN ADULTS: 1997–2012

MIXED ABSTRACTS

13:30–14:30

Wednesday

8 November

Motsuku, Lactatia¹; Sengayi, Mazvita^{1,2}; Chen, Wenglong^{1,2};

Ndlovu, Babongile¹; Singh, Elvira^{1,2}

¹National Health Laboratory Services, National Cancer Registry;

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Background In South Africa (SA), lung cancer is ranked 2nd and 5th among men and women respectively. Since the Tobacco Products Control Act number 83 of 1993 was enacted, the smoking prevalence decreased significantly, however there are few studies conducted to explore the relationship between the smoking patterns and lung cancer trends. This study aims to estimate the incidence rates of lung cancer in relation to smoking prevalence among South African adults.

Method Incidence data for lung cancer from 1997–2012 was sourced from the National Cancer Registry and smoking prevalence data was sourced from the literature. Data was imported into Joinpoint for trend analysis and calculations of crude rates and age standardized incidence rates (ASIR), using the mid-year South African population as reported by Statistics South Africa as the denominator and the Segi World Standard Population for standardization. Trends in lung cancer incidence rates were plotted alongside smoking prevalence trends to assess if changes in smoking prevalence over time have affected trends in lung cancer incidence.

Results Overall the average age at lung cancer diagnosis was 60 years (SD 11.4). ASIR decreased significantly from 13.86 per 100000 persons in 1997 to 10.8 per 100000 persons in 2000 (AAPC – 7.97%) and two further consecutive declines by 8.81 and 8.55 per 100000 persons in 2004 and 2010 respectively (AAPC -4.97% and -0.49%). ASIR increased from 8.55 per 100000 persons in 2010 to 9.77 per 100000 persons in 2012 (AAPC +6.86%). In females ASIR decreased significantly from 5.44 per 100000 persons population in 1997 to 3.81 per 100000 persons 2000 (AAPC -11.17%) and further decreased in 2005 by 3.21 per 100000 persons (AAPC -3.38%). However, ASIR rose to 3.24 per 100000 persons in 2010 (AAPC +0.15%) and even further by 3.72 per 100000 persons in 2012(AAPC +7.23%).

Over the study period smoking prevalence decreased significantly by 2.97% between 1997 and 2002 for females and another further non-significant decrease by 0.61 between 2002 and 2005. As of 2005, smoking prevalence among females increased significantly by 3.15% for period 2005 to 2008 and 2.53% for period 2008 to 2012.

Conclusions Overall, a reduction in lung cancer incidence was observed as smoking prevalence decreased. Of concern however, is the increase in smoking prevalence in women and the consequent increase in lung cancer incidence. Exploratory studies are needed to understand the factors influencing the increasing smoking prevalence in women.

PRESENTATION

HIV ASSOCIATED MALIGNANCIES

14:40–16:30

Thursday

9 November

Mpunga, Tharcisse

THE BURDEN OF CANCER ATTRIBUTABLE TO HIV IN RWANDA

Mpunga, Tharcisse¹; Aznaor, Ariana²; Uwizeye, Francois Regis²; Uwase, Aline¹; Shulman N., Lawrence³; Clifford, Gary²

¹Ministry of Health, Rwanda; ²International Agency for Research on Cancer;

³Partners In Health / Inshuti Mu Buzima

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Background People infected with the human immunodeficiency virus (HIV) are known to be at increased risk of developing cancers of infectious origin. Furthermore the burden of HIV-related cancer may be increasing following improvements in cART access and survival. However, data on the burden of cancer attributable to HIV infection in sub-Saharan Africa remain limited.

Methods All cancer cases diagnosed from July 2012 to December 2016 at the Butaro Cancer Center of Excellence (BCCOE), a national cancer referral center for Rwanda, were systematically screened for HIV infection. Cases were coded according to International Classification of Disease for Oncology (ICD-O-3) topography and morphology, and converted to the International Classification of Disease version 10 (ICD10). Associations between cancer and HIV are to be estimated using a case:referent approach, in which HIV prevalence in selected cancer types known or suspected to be infection-related are compared to that in a control group of cancers considered non-infection-related (e.g. colorectal, breast, prostate), accounting for age and sex.

Results Of 3,214 diagnosed cancer cases, 2,621 had known HIV status and were included in following analyses. Among female cases (n=1,870), the predominant cancers were breast (n=685, 30%) and cervix (n=675, 29%) cancer. Using breast cancer as reference group (HIV prevalence=8%), Kaposi Sarcoma (90%, OR 104.5 [CI 23.5–465.1]), cervical cancer (20%, OR 2.8 [CI 1.9–4.1]) and vulva cancer (40%, OR 7.5 [3.0-18.2]) were associated with HIV infection. Among male cases (n=751), the most common cancers were leukemia (n=114, 12%) and head and neck (n=83, 11%). Cancers associated with highest prevalence of HIV in males were Kaposi Sarcoma (n=30, 77% HIV-positive), Penis (n=30, 27%) and NHL (n=60, 18% HIV-Positive).

Conclusions High HIV prevalence was confirmed among known AIDS-defining cancers (KS, NHL and cervical cancer) and observed also for some other infection-related sites (vulva and penis) Comprehensive analyses of statistical associations and attributable fractions for HIV by cancer type, including histological sub-types of lymphoma, are ongoing and will be presented in full.

PRESENTATION

Muangala, Maria

ROLE OF NUCLEAR MEDICINE IN PROSTATE CANCER STAGING

Muangala, Maria¹; Alves, Cesar¹; Vaz, Ana M.F.¹

¹Clinica Girassol

PALOP

14:40–16:00

Friday

10 November

Correspondence maria.muangala@clinicagirassol.co.ao

Bone metastases are the second most common site of disease spread, second only to lymph nodes in Prostate cancer. The incidence increases with stage with as high as 65–70% in those with advanced disease.

Bone scan has been the hallmark of bone staging and evaluation especially in prostate cancer, which is most commonly associated with osteoblastic secondaries. In spite of its inferior sensitivity and specificity in small volume disease, it forms an important adjunct with Conventional imaging (CT, MRI).

Moving from the ⁹⁹Tc-MDP, other radiotracer isotopes such as Choline radiolabeled with ¹¹C or ¹⁸F have a slight edge. But till now the inclusion of these radiotracers as sole modality or in hybrid imaging techniques such as PET- CT OR SPECT scanning is yet to become an initial investigation in primary staging. Moreover a clear answer to implication of early detection of bone metastasis, to therapy is yet to be clearly answered.

Bone scintigraphy has been the conventional nuclear medicine technique utilized in prostate carcinoma patient for initial staging and to evaluate the more appropriate therapeutic procedure, once the bone metastases disease is documented. At Clinica Girassol we are currently the only nuclear medicine facility in Angola. Since the inception of Service, we have performed 758 bone scan evaluations in all types of cancers in last 5 years (2012–2017). Of these, prostate cancers constitute 47% of our workload in both primary staging and re- evaluation.

POSTER

WELCOME RECEPTION AND POSTER SESSION ONE

16:30–18:00

Tuesday

7 November

Muchiri, Lucy

P126 | IMPROVING THE QUALITY OF FINE NEEDLE ASPIRATE, BONE MARROW ASPIRATE, AND BONE MARROW TREPINE BIOPSY PROCEDURES AND SPECIMEN PROCESSING AT TERTIARY REFERRAL HOSPITALS IN KENYA

Muchiri, Lucy¹; Sayed, Shahin²; Rajab, Jamilla¹; Githanga, Jessie¹; Field, Andrew¹; Dawson, Sandy³

¹University of Nairobi; ²Aga Khan University; ³University of Notre Dame

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Background Fine-needle aspiration cytology (FNAC) is a very useful, simple and relatively cheap diagnostic test for benign and malignant lesions of the breast, thyroid, lymph nodes and other organs. The correct use of FNAC thus has the potential to improve diagnostic capabilities and provide access to timely and low-cost patient care, especially in places which currently have no pathology. Bone marrow assessment, by both trephine biopsies and bone marrow aspirates (BMA), is also an important technique for evaluating many hematologic conditions and metastatic malignancies. We report the results of a capacity-building project, developed jointly by Aga Khan University, Nairobi (AKU) and the University of Nairobi (UON), to improve the performance and processing of FNAs, BMAs and trephine biopsies at tertiary referral hospitals in Kenya.

Objectives of this project:

- (i) To train pathology residents and technicians from UON and AKU and local pathologists to become “trainers” and teach proper FNA, BMA and BM trephine biopsy procedure techniques to medical officers and technicians at tertiary referral hospitals
- (ii) To improve or set up new FNA/BMA/trephine biopsy clinics in four tertiary referral hospitals outside of Nairobi

Methods Baseline surveys at the selected facilities were conducted to generate information on usage of FNAs, BMAs and trephines. Training modules for both the FNA and BM aspirates and trephines were developed and implemented during a train-the-trainers workshop. Proficiency testing of trainers was then performed and a Stakeholders’ forum was held before the training at the peripheral hospitals was implemented.

Results Six pathology residents from UON and AKU, 9 pathologists from the peripheral hospitals, and 8 technologists attended the initial train-the-trainers workshop in Nairobi. A total of 27 medical officers, 2 clinical officers and 11 Technologists were then trained by these trainers at the four tertiary referral hospitals. Preliminary results and findings will be presented, and challenges and lessons learned will be highlighted.

Conclusion This project exemplifies how task-shifting can address some of the challenges associated with the shortage of specialised health personnel in resource-constrained countries. Such task-shifting in pathology can make more efficient use of available human resources and thus provide broader access to quality diagnostic services.

PRESENTATION

CANCER
ADVOCACY
& OTHER
ABSTRACTS

11:00–12:30

Thursday
9 November

Mugabe, Marcellin Champagnat

COMPARING GENE EXPERT BREAST CANCER STRATIFIER MRNA ESSAY WITH ER AND HER2 IHC (IMMUNOHISTOCHEMISTRY) FOR RAPID BIOMARKER ANALYSIS

Mugabe, Marcellin Champagnat¹; Andrichi, Julina²; Ho, Ken³; Wu, Natalie³; Rizo, Annalizo³; Rugwizangoga, Belson^{1,4}; Brock, Jane E²

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⁴Kigali University Teaching Hospital

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Management of breast cancer patients in the developing world has limitations due to lack of availability of quality ER and HER2 immunohistochemistry (IHC) diagnostic assays to justify therapeutics. Shipping pathology specimens to a central testing site delays therapy and incurs high costs. The Xpert Breast Cancer Stratifier assay makes quantitative measurements of ESR1, PGR, ERBB2, and MKi67 mRNAs using FFPE specimens in ~75 minutes on an easy-to-use automated diagnostic platform, the GeneXpert (GX). 10,000 GX machines are currently in use in 182 countries offering the possibility of a point-of-care solution. We compared concordance between IHC and mRNA in breast tumors processed in Rwanda, with pathology review and immunohistochemistry performed in the US.

Both mRNA and standard ER and HER2 IHC assays were performed on 150 breast cancer FFPE samples with assays tested as whole sections. For equivocal HER2 IHC results, a positive FISH result scored the sample as HER2+. GX measurements for Ki67 were compared with the mitotic rate as an alternative to Ki67 IHC.

Overall percent agreement for 90 cores and 56 excisions was 93% for ER (51 %+) and 97% for HER2 (27 %+). Among ER discrepant cases one STRAT4-positive IHC-negative tumor and nine STRAT4-negative IHC-positive tumors were identified. 89% of discrepant ER results were in tumors $\leq 50\text{mm}^2$ and 56% were in tumors $\leq 25\text{mm}^2$. 78% showed very weak IHC ER staining comprising from 1 to 90% of tumor cells. All were ductal carcinomas, 4 had extensive tumor necrosis present ($>1\text{HPF}$), and 4 were HER2 positive. Tumor cellularity was low in 22% of cases. No ER or HER2 discrepancies occurred in non-ductal subtypes (e.g. lobular or mucinous carcinomas). 96.5% (28/29) of ER IHC- cases with a positive internal control (29/72 total) were appropriately identified as ER- by Stratifier. Comparing mitotic rate with Ki-67 (8.2 mitoses/ mm^2 cut point) gave 100% sensitivity and NPV, but low specificity (13.9%), and PPV (48%).

In a validation study with samples processed in Rwanda, concordance was good for ER and excellent for HER2. Low tumor volume and/or weak expression of ER accounted for most discrepancies. The utility of Ki-67 was limited. The Xpert Breast Cancer Stratifier provides a rapid, cost-effective solution to the problem of obtaining accurate diagnostic results at the point-of-care in low-resource settings.

PRESENTATION

PREVENTION & SCREENING FOR CERVICAL CANCER IN AFRICA (cont.)

14:40–16:30

Tuesday

7 November

Muhimpundu, Marie Aimee

“SEE, NOTIFY, SCREEN, AND TREAT”: INITIAL RESULTS OF CERVICAL CANCER SCREENING AND TREATMENT IN RWANDA

Muhimpundu, Marie Aimee¹; Balinda, Jean Paul¹; Uwimbabazi, Jean Claude¹; Eagan, Arielle³; Harward, Sardis²; Binagwaho, Agnes⁴

¹Rwanda Biomedical Centre; ²Dartmouth Institute for Health Policy and Clinical Practice; ³Harvard Medical School; ⁴University of Global Health Equity

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Introduction Cervical cancer is the leading cause of oncology morbidity and mortality among women in Rwanda. In 2013, Rwanda’s comprehensive cervical cancer program introduced screening at 5 district hospitals and 15 health centres using the QIAGEN careHPV DNA test. Here, we describe the first year’s results of the “Screen, Notify, See and Treat” cervical cancer screening program, including challenges encountered and service delivery improvements.

Methods Public awareness of cervical cancer screening opportunities was raised through public radio, church networks, and women’s groups. Community health workers were enlisted to recruit and inform eligible women of local screening dates. HIV-negative women aged 35 to 45 and HIV-positive women aged 30 to 50 were offered screening using the QIAGEN careHPV DNA test, followed by visual inspection with acetic acid (VIA), and cryotherapy, biopsy and surgical treatment for those who tested positive. Service utilisation data were collected from the program’s September 2013 initiation until October 2013.

Results Of the total 7,520 samples tested, 874 (11.6%) screened positive for HPV, leading 780 (89%) patients to undergo VIA. Cervical lesions were found in 204 patients (26.2%) during VIA; of these, 151 were treated with cryoablation and 15 were referred for biopsies. Eight patients underwent complete hysterectomy to treat advanced cervical cancer. Challenges to service delivery included recruitment of eligible patients and patient loss to follow-up. Uptake of services increased after regular screen days were established at each centre, and loss to follow-up was addressed by confirming contact information during the first appointment. The screening service eligibility minimum age was adjusted to 30 years for all women regardless of HIV status to ensure that earlier screening did not inadvertently reveal patients’ status. The 96-sample testing capacity of the careHPV system occasionally prevented same day VIA and cryotherapy, as technicians would delay test runs until multiple samples were available for testing. Additionally, power fluctuations and outages at 3 hospitals caused approximately 20% of the careHPV test runs to fail, requiring that the tests be re-run with new kits.

Conclusions Providing cervical cancer screening services through public health facilities is a feasible and valuable component of comprehensive women’s healthcare in resource-limited settings. Potential challenges to service delivery include patient recruitment and retention, efficient scheduling of treatment post-screening, and conservation of consumable resources. With strategic programmatic design and a focus on equity, a comprehensive screening program can identify, diagnose, and treat women at risk for cervical cancer.

POSTER

Mukasahaha, Diane

**P357 | INTEGRATING PALLIATIVE CARE INTO HEALTH SYSTEMS:
THE CASE OF RWANDA**

**POSTER
SESSION
TWO**

**16:30–18:00
Thursday
9 November**

Mukasahaha, Diane¹; Uwinkindi, Francois¹; Rwagasore, Edson¹;
Eagan, Arielle²; Muhimpundu, Marie Aimee¹

¹Ministry of Health / Rwanda Biomedical Center; ²Harvard Medical School

Correspondence diane.mukasahaha@gmail.com

Introduction As infectious diseases are better controlled and populations are aging, a growing burden of non-communicable diseases is emerging across developing countries, highlighting the need for Palliative Care (PC). Yet developing, integrating, and coordinating comprehensive PC services across the health care system in a high quality, sustainable manner can present a challenge to health systems. Here, an approach of comprehensive integration is exemplified through the case of Rwanda, showing the strategic steps taken by the Rwanda Ministry of Health (MOH) through Rwanda Biomedical Center (RBC) to develop and integrate PC into its health system.

Methods Led by the MOH, Rwanda's approach in developing and integrating PC into its health system is multifaceted, reaching all levels of the health sector. After Rwanda became one of the first African countries to develop a stand-alone Palliative Care National Policy in 2011, PC was integrated into non-communicable disease strategic planning and chronic care modeling to align the provision of PC alongside chronic care services. In addition, resource mobilization, human resource capacity building and infrastructure development, and the local production of oral morphine and its accompanying supply chain design were initiated.

Results From a policy and planning perspectives, the weaving of PC into Rwanda's National Health Sector Strategic Plan and NCDs policy and strategic planning has allowed the MOH to allocate resources most effectively and avoid the duplication of efforts. Now integrated into care delivery at all health system levels, PC clinical capacity includes: multidisciplinary trained PC teams composed of at least 5 staff at all 34 District Hospitals, PC desks to coordinate referrals and care at all 8 Referral and 4 Provincial Hospitals, 384 Health Center nurses trained in PC, and 211 Home Based Care Practitioners trained in community-based chronic care management and PC. Additionally, to ensure the monitoring and evaluation of PC at facility and national levels, newly developed PC indicators have been built into Rwanda's Health Management Information System (HMIS) and Integrated Supportive Supervision (ISS).

Conclusion The comprehensive integration of PC at all levels of Rwanda's health system has allowed patients to begin to access services countrywide. Through political will, dedicated health policy, strategic planning to enable capacity building, and stakeholder collaboration across the health sector, PC is now beginning to reach those most in need, bringing comfort and dignity to those suffering from chronic illness.

POSTER

Mukasahaha, Diane

P358 | ACCESS TO ORAL MORPHINE; MAPPING PROGRESS IN RWANDA

**POSTER
SESSION
TWO**

**16:30–18:00
Thursday
9 November**

Mukasahaha, Diane¹; Grant, Liz²; Downing, Julia²; Turyahikayo, Jack²; Leng, Mhoira^{2,3,4}

¹Ministry of Health / Rwanda Biomedical Center; ²Makerere University;

³University of Edinburgh; ⁴Cairdeas International Palliative Care Trust

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Objective To provide good palliative care (PC), effective pain control is essential and oral morphine is the gold standard for moderate to severe pain. Consumption per capita and per cancer patient is an indicator of access to pain relief and PC. A partnership led by Rwanda Ministry of Health and Rwanda Biomedical Centre, with University of Edinburgh and technical support from Makerere Palliative Care Unit developed a health systems strengthening approach to improve PC provision in 6 District Hospitals and 3 referral Hospitals. Morphine access and consumption was a key indicator of progress and is linked to training, advocacy and mentorship.

Methodology Interventions were carried out over a 2 year period (April 2015 to March 2017) including national opioid availability and monitoring workshop, training at all levels including pharmacists, training of Link Nurses in referral Hospitals, national provision of oral morphine, clinical placements, mentorship and supervision on-site (Rwandan, UK and Ugandan) focusing on 6 district hospitals (Kabutare, Remera-Rukoma, Nyamata, Kiziguro, Byumba, Kinyihira), 2 teaching hospitals (CHUK, CHUB) and 1 referral hospital (Rwamagana). Data was collected and collated from the different formulations to reflect annual oral morphine consumption reported in mg.

Results Baseline oral morphine consumption was 0mg in the 6 district hospitals and CHUB with a rise to 16,430mg in year 1 and 2,226,710mg in year 2 representing over 1000% increase. CHUK and Rwamagana both had prior access to PC training and oral morphine with baseline consumption of 79,720mg and 408,070mg in year 1 and 299,980mg in year 2 suggesting some leveling off in oral morphine use.

Conclusion The increase in morphine consumption reflects an impressive growth in PC in Rwanda; though challenges remain in access, understanding of formulations, and clinical knowledge. Mentoring for clinical practice on-site translates knowledge into practice and is linked to increased oral morphine consumption. A wider understanding of needs to include all non-communicable disease is suggested for existing services to grow and ongoing support for PC scale up is needed.

POSTER

Mukasahaha, Diane

P359 | ASSESSING THE CAPACITY BUILDING MODEL FOR PALLIATIVE CARE SERVICES SCALE UP: CASE OF RWANDA

**POSTER
SESSION
TWO**

16:30–18:00

Thursday

9 November

Mukasahaha, Diane¹; Uwinkindi, Francois¹; Eagan, Arielle²;

Muhimpundu, Marie Aimee¹

¹Ministry of Health / Rwanda Biomedical Center; ²Harvard Medical School

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Introduction Despite aging populations and the growing burden of non-communicable disease around the world, Palliative Care (PC) continues to be underdeveloped in many developing countries. Performance-based PC training for health care providers is a crucial tool that could catalyze this development. In response to the call for PC development, the Rwanda Ministry of Health through the Rwanda Biomedical Center's NCDs division has designed and implemented strategies for palliative care capacity building for health providers. Strategies include: the training of mentors and supervisors at provincial and referral hospital level; the training of multidisciplinary teams at district level (composed of a medical doctor, two nurses, a social worker, and a psychologist), and the training of on-site training and clinical placement for hospital Link Nurses.

Methods This cross-sectional study evaluated the newly-developed district level multidisciplinary teams and measured their effectiveness in providing PC services at district hospitals. Across 10 hospitals with multidisciplinary teams, medical record and inpatient enrollment register review was conducted to measure the documentation of pain and psychosocial assessment as well as pain medication prescription. 50 staff trained in PC were interviewed, which providing data on health care provider training, sensitization, and turnover.

Results Through the Rwandan health system's efforts to develop and integrate PC services, PC is now increasingly available in district hospitals across the country. 49 PC patients were identified, with 83% documented to have physical pain and 79.7% with psychosocial needs. The use of pain control medications was documented, with appropriate morphine prescription (Proxy indicator) increasing from 27 to 75%. Though a 20% turnover rate was found after one year of training, 95% of health care providers interviewed at the district hospitals reported increased confidence in providing holistic care for PC patients and sensitization to the definition and appropriate use of PC services.

Conclusion Thus far, Rwanda's performance-based training model for Palliative Care has proved its ability to improve the identification of eligible patients and initiation of quality of PC services to assess and support physical pain and psychosocial needs. Combined, Rwanda's alignment of PC with NCDs, implementation of multiple capacity building strategies, and sustainability-focused health systems strengthening has positioned the country to respond and build capacity for PC. Through this, Rwanda is beginning to empower its health professionals to provide pain management and psychosocial support for those in its population who are facing chronic and terminal illness, offering proper assessment, relief and dignity to its people.

PRESENTATION

Mukasahaha, Diane POLICY MAKING FOR SYMPTOMATIC CARE

Mukasahaha, Diane¹
¹Ministry of Health / Rwanda Biomedical Center

**ONCOLOGY
NURSING:
SYMPTO-
MATIC CARE**
13:30–14:30
Wednesday
8 November

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Over the last decade, the Rwanda Ministry of Health has achieved internationally recognized health indicators, including an increase in life expectancy and decreases in child and maternal mortality. Yet as non-communicable diseases rise, the country is faced with the challenge of creating new policies and programs for people living with chronic and terminal illnesses. Though diagnostics and treatments are increasingly available in-country for diseases, many patients present with late-state illness. Delivered alongside continued diagnostics and treatments, Palliative Care offers the opportunity to treat one's symptoms and orient care toward quality of life, bringing dignity to the person regardless of his or her prognosis.

Without underlying policy on a national level though, Palliative Care cannot be developed and delivered in an organized, sustainable, and equitable fashion. Understanding the importance of integration, the Government of Rwanda has worked to create integrated, sustainable policies across all its sectors. It is into this national cross-sector policy structure that health policies are integrated. In 2012, Rwanda was one of the first African countries to establish a National Palliative Care Policy, bringing advocacy and policy guidance for Quality of Life and Symptomatic Care for the first time. Rwanda's Policy and its accompanying national Palliative Care Guidelines and assessment measures created a comprehensive, national framework for the delivery of Symptomatic Care. Using multidisciplinary teams of medical personnel, social workers, and clinical psychologists to assess and support patients' Palliative Care needs, Rwanda's Policy uses a holistic approach. In addition, Rwanda has developed its oral morphine procurement and supply chain, enabling medical teams to gain access to medicines vital for high-quality, evidence-based symptomatic care. The Ministry of Health is now working to develop and implement pain assessment and management trainings for physicians, nurses, and pharmacists to learn how to properly assess symptomatic needs and safely provide morphine and other symptomatic medications to patients.

As Rwanda is exemplifying, sustainable and equitable advances in healthcare are attainable through strategic planning and thoughtful, evidence-based policy making. With national policy bringing Palliative Care to at all tiers of the Health Sector, the Ministry of Health is standardizing and strengthening Symptomatic Care, ensuring its reach to patients throughout the country. Today, backed by political will and the notion that health is a human right, Rwanda's strong link between health policy and care delivery is increasingly enabling its people with chronic and terminal illnesses to live as well as possible for as long as possible.

POSTER

WELCOME RECEPTION AND POSTER SESSION ONE

16:30–18:00

Tuesday
7 November

Muliro, Namaemba

P076 | EPITHELIAL OVARIAN CANCER AT MOI TEACHING AND REFERRAL HOSPITAL, AN INSTITUTIONAL EXPERIENCE: DESCRIPTIVE ANALYSIS OF DATA, 2010–2016

Muliro, Namaemba¹; Odongo, Elly¹; Omenge, Orango¹; Itsura, Peter¹;
Tonui, Philip¹; Ganda, Gregory¹; Rosen, Barry¹
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Background Malignant epithelial tumors (carcinomas) are the most common ovarian cancers and the most lethal gynecological malignancies. In Kenya, information concerning the frequency, pattern and management of ovarian cancer is scant. In the last 6 years since inception, The Gynecologic Oncology program (GOP) at MTRH has provided care to ovarian cancer patients in Western Kenya who in the past were referred to Nairobi and those who couldn't encountered slow and painful deaths at home.

Aim We describe the patient characteristics, stage at diagnosis, distribution of the histopathological types of epithelial ovarian cancers (EOC) and treatment at MTRH, providing an institutional experience.

Materials and Methods We reviewed the data base on EOC cases and files of those who presented and were treated over the 6 year period since the inception of GOP. The patient characteristics, FIGO tumor stage at diagnosis, distribution of the histopathological types and management data was obtained.

Results A total of 73 patient records were reviewed out of which 8(10%) were HIV positive. The mean age at diagnosis was 53.6 years with a mode parity of 5 and a mean hemoglobin level of 11.9g/dl. Majority of the patients (71%) were from outside Uasin Gishu County.

Fifty two (71%) of the patients were classified as Serous EOC, which was followed by Mucinous EOC (14%), Endometrioid EOC (5%), Undifferentiated EOC (3%), and others (5%). Only 23 patients were staged (FIGO) whereby Stage III comprised almost half (49%) of the cases followed by stage I (26%), Stage 4 (17%) and stage 2 (8%). Fifty nine patients (81%) received adjuvant chemotherapy, with over half of them (63%) receiving Cisplatin/cyclophosphamide, 19(32%) received paclitaxel/carboplatin and 3(5%) Cisplatin/Paclitaxel. Fourteen (19%) did not receive treatment with one patient declining and 13 failing to turn up for the scheduled chemotherapy.

Conclusions Serous EOC is the commonest, most being unstaged referrals. Older age, grand multiparity, and advanced FIGO stage, characterize the patients seen at MTRH and HIV status is not a significant factor. Cisplatin/cyclophosphamide is the commonly used regime.

POSTER

WELCOME
RECEPTION
AND POSTER
SESSION ONE
16:30–18:00
Tuesday
7 November

Munatswa, Elvis

**P437 | GAY MEN'S EXPERIENCES IN PROSTATE CANCER DIAGNOSES,
TREATMENT, CARE AND SUPPORT IN SOUTH AFRICA**

Munatswa, Elvis¹

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Background the prevalence of prostate cancer among gay men, as sexual orientation is not usually recorded in national statistics or cancer registries across the world. This has led to various suppositions, for example: that gay men might have higher prostate cancer rates because they have had more sexually transmissible infections; or that gay men on the whole have more sex and are sexually active longer as they age, therefore they have more frequent ejaculation, which has been shown to lower prostate cancer risk.

Methods This is part of a bigger PhD study. The scoping review method follows a secondary data source search, sorting and explanation, where a team of four researchers were involved in the process, three at each stage. 290 sources considered, 25 relevant. Data was organised into latent themes, and a mixture of quantitative and qualitative descriptions of data used to present the findings.

Findings Gay men were 1.9 times more likely to report a cancer diagnosis than heterosexual men. Among men of different sexual orientations, gay men had significantly higher prevalence of cancer survivorship, about 8% or almost double the prevalence of heterosexual or bisexual men ($P < .0001$). For male cancer survivors, gay men have a significantly younger age of diagnosis (mean age, 41 years) compared with other sexual orientation groups. However, gay men reported a significantly lower rate of prostate cancer, with 5%, or about 1/3 of the prevalence in other men.

Discussion Prostate cancer has a profound impact on men's 'personal relationships, body image, social interactions and sense of masculinity'. Body image is a significant contributor to prostate cancer recovery. This may have particular consequences for gay men, given the literature on gay men and the importance of the body and physical appearance. Compounding this issue of relationship effects is the fact that for a gay couple there is a 28% chance that one partner will be diagnosed with prostate cancer over their lifetimes and a 3% chance that both partners will be diagnosed

Conclusion It is particularly important to consider sexual orientation in the diagnoses, treatment, care and support for prostate cancer. For gay men, prostate cancer is more than just a disease, it challenges sexual orientation, and consequently identity.

PRESENTATION

HIV
ASSOCIATED
MALIGNANCIES
14:40–16:30
Thursday
9 November

Murenzi, Gad

PREVALENCE OF HPV INFECTION AND CERVICAL PRE-CANCER AMONG RWANDAN HIV-INFECTED WOMEN SCREENED FOR CERVICAL CANCER

Murenzi, Gad¹; Sinayobye, Jean D'Amour¹; Rurangwa, Theogene¹; Mugenzi, Pacifique¹; Mutesa, Leon²; Anastos, Kathryn³; Castle, Philip³
¹Rwanda Military Hospital; ²University of Rwanda; ³Albert Einstein College of Medicine

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Background Rates of invasive cervical cancer (ICC) and ICC-related mortality are particularly high in Sub-Saharan Africa, which also has the highest rates of HIV infection in the world. Now, over 12 million HIV-infected (HIV[+]) women in Sub-Saharan Africa are living longer because of anti-retroviral therapy, only to increase their likelihood of dying from ICC. However, these women are already exposed to human papillomavirus (HPV), the viral cause of cervical cancer, and will not benefit from or be targeted for prophylactic HPV vaccination. Thus, cervical cancer screening of women, especially HIV[+] women, is needed for the foreseeable future. We are conducting a cervical cancer screening study of ~5,000 HIV [+] women, aged 30–54 years, living in Rwanda to compare different screening strategies.

Methods We are evaluating screening tests (high-risk HPV [hrHPV] testing and visual inspection after acetic acid [VIA]), traditional triage tests (HPV16/18/45 detection and VIA), and promising new biomarkers for triage (E6/E7 oncoproteins, and genotype-specific HPV viral methylation and load, and p16/Ki-67 immunocytochemistry) of screen-positive women. During the screening visit, a nurse administers a questionnaire on demographics and ICC risk factors and a specimen is collected for HPV testing by GeneXpert, and then VIA and digital imaging using the Enhanced Visual Assessment (EVA) system (MobileODT) are conducted. At colposcopy for screen-positive women, two additional specimens are taken for biomarker evaluations followed by rigorous colposcopic evaluation that includes 4-quadrant microbiopsies/biopsies and endocervical curettage (ECC) for those women whose squamocolumnar junction is not entirely visible and/or their lesion extends into the endocervical canal.

Results By early 2017, we had screened 2,250 women with available HPV results. The prevalence of high-risk HPV (hrHPV) infection among our study population is 26.3%, with 6.1% HPV16+, 5.5% being HPV18/45+, and 14.7% other hrHPV+. The trend of hrHPV prevalence differs among age groups and hrHPV prevalence increases with the number of sexual partners. We have noted a decrease in the age-specific hrHPV prevalence compared to previous studies in HIV[+] women in Rwanda.

Discussion Falling hrHPV prevalence in HIV[+] women may be indicative of high coverage and compliance with HIV management with anti-retroviral therapy in Rwanda. More results with pathology as well as E6/E7 oncoprotein testing results will be presented at the conference.

PRESENTATION

OESOPHAGEAL CANCER RESEARCH

11:00–12:30

Friday

10 November

Murphy, Gwen

OESOPHAGEAL CANCER IN AFRICA: OVERVIEW AND AFRECC CONSORTIUM

Murphy, Gwen¹; Van Loon, Katherine²; Kaimila, Bongani³; Matthews, Christopher⁴; Mwachiro, Michael⁵; McCormack, Valerie⁶
¹National Cancer Institute; ²University of California; ³UNC Project; ⁴King's College; ⁵Tenwek Hospital; ⁶International Agency for Research on Cancer

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Background Esophageal cancer is the 6th leading cause of cancer death. It kills 400,000 people every year, most of whom live in distinct geographic bands across central Asia and along the eastern coast of Africa from Ethiopia to South Africa. In these high-risk areas, nearly all cases are esophageal squamous cell carcinoma (ESCC). Many etiologic and genetic studies of esophageal cancer in the Asian esophageal cancer belt have been undertaken, but the African belt remains almost completely unstudied.

ESCC is striking for its distinct etiologic heterogeneity. In low and medium incidence populations ESCC is largely attributable to smoking and alcohol and incidence rates are 3–4 times higher in men than in women. In contrast, tobacco use and alcohol consumption are less common and less intensely practiced and play only a small role in the etiology of ESCC in high incidence areas in Asia. Most high incidence regions also have male:female ratios that approach 1:1.

Research into ESCC is made particularly compelling because of the rapidly fatal course of the cancer, the late stage presentation juxtaposed with the important contribution of modifiable risk factors. Taken together this suggests that primary and secondary prevention are key to reducing mortality from this disease.

Several groups have recently begun high-quality studies of ESCC in Africa, including case-control studies in Dar-es-Salaam, Tanzania (UCSF and Muhimbili University); Eldoret, Kenya (IARC and Moi University); Moshi, Tanzania (IARC and Kilimanjaro Christian Medical Center); Bomet, Kenya (NCI and Tenwek Hospital); and Lilongwe, Malawi (NCI and the UNC-Malawi Project).

AfrECC: In September 2016, these groups formally established the African Esophageal Cancer Consortium (AfrECC), to raise awareness (both in Africa and elsewhere) of the importance of this disease in Africa, to coordinate etiologic and molecular studies of ESCC, and to build capacity for early detection, treatment and palliation of this cancer.

Initial activities have included (1) standardizing questionnaires for new case-control studies; (2) developing an mHealth phone/tablet app to record all data, to increase efficiency, eliminate transcription mistakes, and allow real-time QC and supervision of field activities from abroad; (3) planning coordinated GWAS and genomic studies; and (4) working with partners in China to provide a sustainable supply of affordable stents to palliate late-stage ESCC.

Conclusion The Consortium continues to work to decrease the burden of ESCC across east Africa. Annual meetings will continue to follow-up on progress and to develop new initiatives.

POSTER

POSTER SESSION

TWO

16:30–18:00

Thursday

9 November

Murphy, John

P229 | SMOKING AND HIV IN SUB-SAHARAN AFRICA: A 25 COUNTRY ANALYSIS OF THE DEMOGRAPHIC HEALTH SURVEYS

Liu, Benmei¹; Murphy, John¹; Parascandola, Mark¹

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Background Being HIV positive is associated with higher rates of smoking in high-income countries. This is important to public health because evidence suggests that HIV/AIDS patients who smoke have poorer treatment and survival outcomes. Moreover, both smoking and HIV are risk factors for comorbidities such as tuberculosis, which is highly prevalent in low-and middle-income countries. The HIV-smoking relationship is understudied in sub-Saharan Africa, where tobacco use patterns and HIV prevalence differ greatly from other world regions. This study attempts to fill this gap in the literature.

Methods This study examined cross-sectional data from the Demographic Health Surveys (DHS). Data from 25 sub-Saharan African countries were pooled ($n=286,850$), and the association between tobacco use and HIV status was analyzed through hierarchical logistic regression models.

Findings Overall, men who had HIV/AIDS had a significantly higher smoking prevalence (25.90%) than men who did not (16.09%), as did women with HIV/AIDS (1.15%) compared to women who did not (0.73%). Multivariate logistic regression analysis revealed that people living with HIV/AIDS were 12% more likely to smoke than people living without ($OR = 1.12$, 95% $CI=1.04, 1.21$; $p < 0.001$) when adjusting for socioeconomic, demographic, and sexual risk factors.

Interpretation This study complements evidence from other world regions showing that HIV infection is associated with a higher likelihood of smoking. Further research should be conducted to expand on this relationship with an aim to develop targeted interventions.

Funding Funding for DHS provided by USAID. Data analysis funded by the National Cancer Institute.

POSTER

POSTER SESSION TWO

16:30–18:00
Thursday
9 November

Musaigwa, Fungai

P449 | INVESTIGATING THE USE OF STANDARDISED MULTICOLOUR FLOW CYTOMETRY PANELS FOR THE CHARACTERISATION AND DIAGNOSIS OF CHRONIC LYMPHOCYTIC LEUKAEMIA IN THE TYGERBERG ACADEMIC HOSPITAL, SOUTH AFRICA

Musaigwa, Fungai¹; Nkambule, Bongani²; Bassa, Fatima^{1,3}; Abayomi, Akin^{1,3}; Swanepoel, Carmen^{1,3}; Grewal, Ravnit^{1,3}
¹Stellenbosch University; ²University of Kwazulu Natal; ³National Health Laboratory Service

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Background Flow cytometry (FC) immunophenotyping is crucial in the diagnosis and classification of haematological malignancies. To produce reliable and reproducible results requires standardisation of FC techniques. Reproducibility is important in inter-laboratory studies which are known to be effective for laboratory methodology improvement. The aim of this study was to introduce standardised multicolour FC in the diagnosis of haematological malignancies at Tygerberg Academic Hospital (TAH) using chronic lymphocytic leukaemia (CLL) as a pilot. TAH is the largest tertiary hospital in the Western Cape province of South Africa (SA). In addition, we aim to document the incidence of CLL from the year 2011 to 2016 in the TAH catchment area.

Methods 20 confirmed CLL patients were recruited at TAH. Bio-specimens were prepared and analysed on the Beckman Coulter Navios flow cytometer using EUROFLOW™ standardised FC protocols and multicolour immunophenotypic panels with two tubes for detecting B-cell chronic lymphoproliferative disorders (B-CLPD). Tube 1 included CD20, CD4, CD45, CD8, Ig-Kappa, CD56, Ig-Lambda, CD5, CD19, TCR γ σ , CD3 and CD38. Tube 2 included CD20, CD45, CD23, CD10, CD79b, CD19, CD200 and CD43. Combined, the two tubes identified CLL from other B-CLPD. The CLL immunophenotypic profiles were stored in a database using INFINICYT™ FC software. To describe incidence trends, all CLL diagnoses made within the National Health Laboratory Service (NHLS) business unit of the TAH from 2011 to 2016 were analysed using descriptive statistics. Confirmation of CLL were based on the WHO classification.

Results In comparison with the NHLS results, the EUROFLOW™ standardised multicolour FC panels and protocols are suitable for immunophenotyping CLL in this SA population. For the incidence study, there were generally equal numbers of CLL cases in men and women with no significant difference in incidence between the two genders ($p=0.93$, $p>0.05$, t-test, 95% C.I.). The median age at diagnosis was 67 years. Women were generally older at diagnosis with an average age of 70 years and 63 years in men. There was a significant difference in age at diagnosis between the two genders ($p=0.024$, $p<0.05$, t-test, 95% C.I.).

Discussion Accurate and consistent laboratory techniques and strict standardisation in FC enhances the confidence in inter-laboratory studies. Haematological malignancy immunophenotypic disease databases allow for faster differential diagnoses of new disease cases which is needed within our setting. Furthermore, these databases permit clear identification of atypical cases. Monitoring haematological malignancy trends is a crucial step in the management of the disease.

POSTER

Musiwa-Mba, Patience

P105 | REVIEW OF PENILE CANCER MANAGEMENT AT PARIRENYATWA HOSPITAL, ZIMBABWE

**WELCOME
RECEPTION
AND POSTER
SESSION ONE**

16:30–18:00

Tuesday

7 November

Musiwa-Mba, Patience¹; Kadzatsa, Webster¹; Nyakabau, Anna-Mary¹
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Background Cancer of the penis is a condition which can cause great distress to men through its disfiguring way of presentation and potential loss of function. It is a rare condition worldwide but occurs more frequently in developing countries. It has been linked to HIV-related immuno-suppression.

Objectives This study aimed to assess the patient characteristics, clinical presentation, HIV association and management practices of penile cancer at Parirenyatwa Central Hospital, Zimbabwe.

Methods This was a retrospective study of patients with histologically confirmed penile cancer who presented at Parirenyatwa Hospital from January 2006 to December 2015. Data was collected from the patients' medical files. The sample size of 55 was accepted based on a preliminary local survey and also other studies like the review of penile cancer done at University of Missouri Hospital which accrued 44 patients in 15 years (2001–2014) and the Kenyatta Central Hospital study which reviewed 55 patients over 30 years (1970–1999).

Results This study accrued 55 eligible patients with this rare cancer. There was an upward incident trend of cases from 2006 to 2015. All cases exhibited squamous cell histology. Of these patients, 83.6% presented with locally advanced cancers, stage 3 and stage 4 involving inguinal lymph nodes in 69% (38/55) of cases. The median age at presentation was 46 years and 64.9% of the patients were below the age of 50 years. Of the 49 patients tested for HIV, 40 (82%) were HIV-positive. Mean time-to-presentation was 12.5 months affirming a tendency to delay in presentation. Most men (78.2%) were from low socio-economic backgrounds with low income or no employment and originated from rural areas or high density townships (79%). Of the 22 patients with known smoking habits 12 (48%) were smokers. Partial or complete surgical penile amputation was commonly undertaken, having been performed in 72.7% (40/55) of cases. Radiotherapy was prescribed to 43.6% (24/55) of cases and was mainly palliative. Chemotherapy was prescribed infrequently to only 12/55 cases also in palliation. A 76.3% rate of loss-to-follow-up was noted.

Conclusion Our study revealed an increasing trend of penile cancer cases at Parirenyatwa Central Hospital, Zimbabwe. The patients were mostly HIV positive and presented with locally advanced disease. Cancer of the penis is a disease of older men in their 6th and 7th generations, but in this study it mainly affected a younger patient population below the age of 50 years.

POSTER

WELCOME
RECEPTION
AND POSTER
SESSION ONE
16:30–18:00
Tuesday
7 November

Musoni, Emile

P060 | PUBLIC AWARENESS OF CERVICAL CANCER SCREENING IN RWANDA CASE STUDY OF RUSORORO SECTOR IN KIGALI CITY

Musoni, Emile¹; Ndishimye, Pacifique²; Ilibagiza, Angela²

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Introduction Cervical cancer is a deadly disease, more common in developing countries where it accounts for 80% of new cases diagnosed annually worldwide. Despite the high number, few women in developing nations seek cervical screening services. Fortunately, cervical cancer is preventable if precancerous lesions are detected early through routine screening and then treated early.

Objectives The main objective of this study was to evaluate people's knowledge on cervical cancer, their attitudes and views towards cervical cancer screening.

Methods This study was a cross-sectional, questionnaire-based survey that was carried out in Rusororo sector in October, 2016. Females residing in Rusororo sector, aged between 21 and 65 years and who gave consent for participation in the research were included in the study.

Results Of 240 participants, 88.8% stated having heard of cervical cancer at some point, with media being the major source of information. While 38.8% did not know any risk factor for cervical cancer, some incorrect responses given were abortion, poor hygiene and poor diet cited by 11.3%, 5.4% and 1.7% respectively. 28.3% did not know any clinical feature and some incorrect responses observed were itching, swelling of genitals and fever cited by 12.1%, 5% and 4.2% respectively. Only 10% knew that any female is at risk of developing cervical cancer. Cervical screening awareness was at 7.9%. Cervical screening rate was at 0.8% and all of them reported undergoing screening once. Only 9.2% knew that all female should undergo screening while no one knew the correct timing of screening.

Conclusion The results obtained from this study highlight the lack of knowledge about cervical cancer and cervical screening in women of Rusororo sector. There is a real necessity to increase awareness and encourage utilization of screening services through mass media as it seems to be an **important source of information**.

PRESENTATION

Mustapha, Muhammad Inuwa

FINANCIAL BURDEN OF CANCER ON PATIENTS TREATED AT A TERTIARY HEALTH FACILITY IN SOUTH WEST NIGERIA

**GENETICS/
EPIGENETICS
& OTHER
ABSTRACTS**

13:30–14:30

Friday

10 November

Mustapha, Muhammad Inuwa¹

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Background Breast cancer is the most common cancer in women worldwide. In Nigeria, where most of the patients belong to low socio-economic class and pay out of pocket, financing Breast cancer treatment has become a serious burden on the patients and their Caregivers.

Aims and objectives To estimate medical and non-medical costs (direct) incurred by Breast cancer patients during the course of treatment.

Materials and Method The study was conducted between 1st June, 2014 and 31st March, 2015 at the Radiation Oncology Department, University College Hospital Ibadan, South West Nigeria. All histologically diagnosed Breast cancer patients that have received treatment and were on follow up were considered. The patients were interviewed using a set of questionnaire which addresses medical and non-medical costs. . All cost were expressed in naira and converted to prevailing rate of the United States dollar as of 2nd, January 2014. The data was analysed using the Statistical Package for the Social Sciences (SPSS) version 21.0.

Results Seventy-nine (79) Breast cancer patients participated in the study. The mean age of patients was 50.6 (SD=9.7) years and ranged between 32–78 years. Almost half were civil servants (46.8%) followed by traders (36.7%), teachers (6.3%), farmers (1.3%) and other occupations (8.9%).

Majority of the patients perceived the financial burden as a result of Breast cancer to be significant (84.8%). Also none of the patients had any health insurance that covered their treatment. Their mean annual income was \$695.9 (SD=\$6004.0).

The mean total cost incurred by patients was \$6222.1(SD=\$3021.3) with mean medical costs accounting for \$4732.1 (SD=\$2431.7); Chemotherapy \$2007.8 (SD=\$1601.5) had the highest mean cost followed by Investigations \$801.6(SD=\$429.4), Surgery \$797.2(SD=\$365.8), Radiotherapy \$554.9(SD=\$375.7), and Consultation fees \$269.2(SD=\$240.0). While the mean non-medical cost was \$1490.0 (SD=\$1063.2); Lodging \$794.1(SD=\$404.5) had the highest mean cost followed by transportation \$404.6 (SD=\$291.0), feeding \$400.2(SD=\$279.9), and domestic services \$389.4(SD=\$279.7).

Conclusion Financing cancer management is a major challenge for both patients and their caregivers. There is need for a comprehensive health insurance program that will incorporate cancer care and help reduce the burden on our patients.

POSTER

POSTER SESSION TWO

16:30–18:00
Thursday
9 November

Mutumbo Baleka, Alex

P230 | CERVICAL CANCER SCREENING AND HPV GENOTYPES FOUND IN KINSHASA, DEMOCRATIC REPUBLIC OF THE CONGO

Bogers, Johannes²; Jacquemyn, Yves²; Mutumbo Baleka, Alex^{1,2}; Ramokone, Lisbeth³; Simoens, Cindy²; Tozin, Rahma¹; Van Geertruyden, Jean-Pierre²
¹University of Kinshasa; ²University of Antwerp; ³Sefako Makgatho Health Science University / National Health Laboratory Service

Correspondence alexmutumbo@gmail.com

Objectives To determine the prevalence of cervical precancerous abnormalities, HPV infection and genotypes in a resource-constrained community of Kinshasa.

Methods Women aged 25 years and more were invited to attend a cervical cancer screening programme organized at the Mont-Amba Health Centre. After informed consent was obtained, cervical specimen for Liquid-based cytology (LBC), HPV testing and genotyping were first collected using standard cytobrushes and stored in PreservCyt® solution. Then after Visual inspection of the cervix with acetic acid (VIA) was performed.

Results Preliminary data are presented for the period from July 2015 to August 2016. VIA was positive in 261 (16,9%) women out of the 1544 who were examined.

On 545 LBC specimens analyzed, we found 8 (1.5%) with ASCUS, 22 (4%) with LSIL and 1 (0.2%) with HSIL. HPV testing was positive on 115 (21,1%) of these LBC specimens. HR-HPV genotypes were isolated in 111 HPV positive specimens. In order of frequency, the most prevalent HR-HPV genotypes were HPV 53, 68, 45, 67, 18, 52, 58, 35, 66, 16, 51, 31, 39, 59.

Conclusion Prevalence of HPV infection is 21.1 %. Cervical lesions were present in 16.9% of cases on VIA whereas their frequency was 5.7% on cytology, demonstrating large discrepancies between screening methods. Further analysis of our data will enable to develop the optimal screening strategy in our setting. HPV 53 and 68 are the most prevalent HR-HPV types found and this situation may compromise the effect of vaccination with current bivalent vaccine targeting HPV 16 and 18.

POSTER

WELCOME
RECEPTION
AND POSTER
SESSION ONE
16:30–18:00
Tuesday
7 November

Mutyaba, Innocent

P026 | PERSISTENT EPSTEIN-BARR VIRUS VIREMIA, ELEVATED INFLAMMATORY CYTOKINES, AND FREQUENT MALARIA INFECTIONS MAY CONTRIBUTE TO THE HIGH INCIDENCE OF BURKITT LYMPHOMA AMONG CHILDREN IN UGANDA

Byakika-Kibwika, Paulin²; Casper, Corey^{3,4}; Kamy, Moses²; Mutyaba, Innocent^{1,2}; Phipps, Warren^{3,4}

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Objective Infection with malaria is hypothesized to contribute to Burkitt lymphoma (BL) by inducing lytic replication of Epstein Barr Virus (EBV) by either loss of host immune response or B cell stimulation. To understand the impact of malaria on the inflammatory cytokine response and EBV replication (as measured by plasma viremia), we measured these factors during no parasitemia, asymptomatic parasitemia, and clinical malaria among children in a region endemic for BL.

Methods We studied children enrolled in a well characterized malaria cohort (Kamy et al. 2015). We quantified malaria parasitemia using blood smears, EBV viremia using PCR and cytokines by Luminex assay. Generalized estimating equations assessed the relationship of malaria parasitemia and cytokines with EBV viremia.

Results Among the 103 children studied, baseline median age was 5.3 years (3.6–6.9); 58 (56%) were males, and 31 (30%) reported fever. EBV viremia was detected in 24% of 263 episodes studied, including 22% (20/90) of no parasitemia episodes, 29% (28/95) of asymptomatic parasitemia episodes, and 19% (15/78) of clinical malaria episodes. Compared to no parasitemia, there was no difference in detection of EBV viremia during asymptomatic parasitemia ($p=0.16$) and clinical malaria ($p=0.59$). Comparing episodes without parasitemia to those with asymptomatic parasitemia and clinical malaria, median log₁₀ levels of cytokines were as follows: IL-5(0.24, 0.24, and 0.24), IL-6(1.07, 1.02, and 1.43), IL-8(2.73, 2.52, and 2.11), IL-10(0.68, 1.27, and 1.56), IL-13(2.15, 2.12, and 2.15), IP-10(2, 1.98, and 2.27), MIP-1 α (2.90, 2.81, and 2.67), MIP-1 β (2.73, 2.79, and 2.67), and TNF- α (0.94, 0.90, and 1.11). In a multivariate model, EBV viremia was significantly associated with age (IRR=0.9 per 1 year increase, 95% CI: 0.81 – 0.99, $p=0.03$), IL-6 (IRR=0.36 per 10 fold increase in IL-6, 95% CI: 0.2 – 0.65, $p=0.001$), IL-5 (IRR=1.76 per 10 fold increase in IL-5, 95% CI: 1.03 – 2.98, $p=0.04$), and IL-8 (IRR= 2.14 per 10 fold increase in IL-8, 95% CI: 1.05 – 4.37, $p=0.04$). There was no association with sex ($p=0.3$), fever ($p=0.5$), malaria parasitemia ($p=0.6$), IL-10($p=0.08$), MIP-1 α ($p=0.28$), MIP-1 β ($p=0.7$), and TNF- α ($p=0.08$).

Conclusion Children in a region endemic for BL expressed high levels of pro-inflammatory cytokines and frequent detection of EBV plasma viremia, with no apparent effect of malaria parasitemia. EBV viremia was inversely correlated with age and IL-6, but directly correlated with IL-5 and IL-8. Future studies are necessary to examine whether the relationship between EBV replication and inflammatory cytokines is causal, and to explore the relationship between these factors and the development of BL.

POSTER

POSTER SESSION TWO

16:30–18:00
Thursday
9 November

Muvugabigwi, Gaspard

P297 | IMPROVING CANCER PATHOLOGY TURNAROUND TIME THROUGH STEPWISE ADVANCEMENT IN TECHNOLOGY AND HUMAN CAPACITY AT THE BUTARO CANCER CENTER OF EXCELLENCE IN RURAL RWANDA

Fehr, Alexandra²; Greenberg, Lauren³; Milner, Dan⁴; Mpunga, Tharcisse¹; Muvugabigwi, Gaspard¹; Ruhangaza, Deo¹

¹Butaro District Hospital / Ministry of Health; ²Partners in Health / Inshuti mu Buzima; ³Partners in Health; ⁴American Society for Clinical Pathology

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Background Limited access to local pathology diagnosis is one of the most critical challenges to achieving quality cancer management in sub-Saharan Africa. One option in such resource-limited settings is the transportation of specimens to a distant reference laboratory. However, this process contributes considerably to the delay in pathology turnaround time and affects patients' treatment and outcomes. To combat this challenge, the Butaro Cancer Center of Excellence (BCCOE) in rural Rwanda implemented pathology diagnostic capacity in a stepwise evolution of advancing technology and human resource capacity over time.

Methods We conducted a retrospective observational study comparing the turnaround times of the three diagnostic methods used at BCCOE from 1 July 2012 to 31 December 2015. They include: 1) blocks and slides generated from BCCOE and physically sent to Brigham and Women's Hospital in Boston, United States for diagnosis; 2) images of slides prepared at BCCOE, uploaded to telepathology software (iPath), and diagnosed remotely; and 3) pathologists diagnose cases on-site at BCCOE. We evaluated the individual patients' turnaround times and the median turnaround time for each method. Differences in median turnaround times across the three methods and between each of the methods were assessed using a Kruskal-Wallis test, and a Wilcoxon Mann-Whitney test

Results 3,514 samples were included. During the given time period, there were 2,695 patient samples from Method 1, 279 from Method 2, and 540 from Method 3. Method 1 had the highest median turnaround time for all three years, with a median of 30 days (IQR: 22–43 days). For Method 2, the total median turnaround time was 14 days (IQR: 7–27 days), and for Method 3 it was 5 days (IQR: 2–9 days). A Kruskal-Wallis test showed a statistically significant difference in median turnaround times across the three diagnostic methods (chi-squared with ties=1378.78; $p<0.001$). When comparing the individual methods to one another, Wilcoxon Mann-Whitney tests revealed that the median turnaround times for Method 1 v. Method 2, Method 1 v. Method 3, and Method 2 v. Method 3 were all statistically significantly different ($p<0.0001$ for all).

Conclusions Moving from only sending specimens for review out-of-country to using telepathology and on-site diagnosis has made it possible for a rural cancer center to significantly decreased pathology reporting turnaround times within 3.5 years, providing patients and their clinicians with faster, essential results. Monitoring for quality assurance continues and data will be updated through 31 December 2016.

POSTER

WELCOME RECEPTION AND POSTER SESSION ONE

16:30–18:00

Tuesday
7 November

Mvungi, Nanzoke

**P106 | HIV INFECTION AND CARCINOMA OF THE CONJUNCTIVA AT
OCEAN ROAD CANCER INSTITUTE**

Mvungi, Nanzoke^{1,2}; Maunda, Khamza^{1,2}

¹Ocean Road Cancer Institute; ²YES

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Incidence of conjunctiva carcinoma in developed countries has been increasing despite of the introduction of anti-retroviral therapy, Conjunctiva carcinoma as one of the AIDS defining disease is a significant contributor of top ten cancers at ORCI (ORCI cancer trend). Peak incidence occurs in the economically and most sexually active age group. Enucleation, radiotherapy and ARVs is the major treatment modality at ORCI. Studies on the association of between HIV infection and carcinoma of the conjunctiva are available in developed and developing countries but this information is scant in Tanzania. The association of HIV infection and conjunctiva carcinoma is high (significant) in our settings but has not been systematically documented. This study address these gaps.

Objectives The study aimed at determining the association between HIV infection and carcinoma of the conjunctiva at Ocean Road Cancer Institute.

Methodology A hospital based crosssectional study was conducted at Ocean Road Cancer Institute. Participants were enrolled consecutively as they presented to the hospital for follow up. Demographic characteristics, Histology, HIV status, ARV status and treatment modalities that they received were clearly documented in a standardized structured questionnaire.

Results A total of 80 patients (41 males, 39 female) conjunctiva carcinoma were enrolled into the study. Most of the patients,61.3%, were between 20 and 39yrs of age,Squamous cell carcinoma being the major histology seen by 68.8%,62.5% being seroconverted (ie HIV positive), 50% were already on ARV, 57.5% had CD4 <200 and 51.3% received Enucleation,radiotherapy and ARVs.

Conclusion and Recommendation Squamous cell carcinoma of the conjunctiva is strongly associated with the human immunodeficiency virus. It is recommended that all patients presenting with Squamous cell carcinoma of the conjunctiva should be tested for HIV seropositivity.Patients should be educated or encouraged to present early to the hospital to enable early and prompt treatment of the condition (tumour) and so improve prognosis.

PRESENTATION

OESOPHAGEAL CANCER RESEARCH

11:00–12:30

Friday

10 November

Mwachiro, Michael

EARLY DETECTION AND PALLIATION FOR OESOPHAGEAL SQUAMOUS CELL CARCINOMA IN AFRICA

Mwachiro, Michael¹; Burgert, Stephen¹; Chepkwony, Robert¹; Parker, Robert¹; White, Russell¹; Dawsey, Sanford²

¹Tenwek Hospital; ²National Cancer Institute

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Overview Esophageal squamous cell carcinoma (ESCC) shows marked variation in incidence and poor survival rates. Although relatively uncommon in some areas of the world, it is common in Eastern and Southern Africa and the most common malignancy seen at Tenwek Hospital in western Kenya. There are many challenges to care because of late presentation and late diagnosis. This makes it difficult to treat and many patients can only be offered palliative care via self expanding metal stents (SEMS).

Early detection for ESCC Based on the hypothesis that esophageal squamous dysplasia (ESD), the precursor lesion of ESCC, is common in our region, we designed a study to determine the feasibility of screening for ESD and determining the prevalence of ESD in our area. We recruited asymptomatic adults to undergo trans-oral videoendoscopy of the esophagus with Lugol's iodine staining and biopsy of identified lesions. Participants also completed a detailed questionnaire and provided blood and urine samples. Overall, the prevalence of ESD was 14.4% (95% CI: 10–19%), including 2.9% high grade dysplasia and 11.5% low-grade dysplasia.

Palliation for ESCC Dysphagia is a late sign and is a common presentation. We highlight our experience with SEMS stents for palliation of ESCC. This enables the patients to have nutrition, and also have dignified end of life. The average survival post stenting is around 8 months. SEMS stents can be placed without fluoroscopy and this technique is easily reproducible and has been shown to be safe. Efforts are currently underway to have affordable stents available.

Conclusions Endoscopic screening of asymptomatic adults for ESD and early cancer with Lugol's iodine is feasible, safe, and patient-acceptable. SEMS stenting offers good palliation for advanced ESCC.

PRESENTATION

SITE SPECIFIC CANCERS & OTHER ABSTRACTS

13:30–14:30

Friday

10 November

Mwachiro, Michael

HIGH URINARY POLYCYCLIC AROMATIC HYDROCARBON CONCENTRATIONS IN BOMET COUNTY, KENYA, A REGION WITH A HIGH INCIDENCE OF OESOPHAGEAL SQUAMOUS CELL CARCINOMA

Mwachiro, Michael¹; Pritchett, Natalie²; Etamadi, Arash²; Abnet, Christian²;
Dawsey, Sanford²; Mwachiro, Michael¹

¹Tenwek Hospital; ²National Cancer Institute

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Background Polycyclic aromatic hydrocarbons (PAHs) are a group of over 100 compounds that are formed during incomplete combustion of organic materials, and many have been classified as known carcinogens. Exposure to PAHs has been suggested as an important risk factor for developing esophageal squamous cell carcinoma (ESCC) in several high incidence areas such as China and Iran, but corresponding PAH assessments have not been conducted in East Africa, another ESCC hot spot. The internal uptake of PAH due to external exposures can be monitored in body fluids and tissues.

Aim The primary aim of this study was to quantify the concentration of seven PAH urine metabolites in a cross-section of subjects from Bomet, Kenya, an endemic area for ESCC. An additional aim was to assess demographic and lifestyle factors that may be associated with the PAH metabolites.

Methods A community-based sample of 294 asymptomatic adults collected spot urine specimens and completed a questionnaire. The urine specimens were analyzed at the National Center for Environmental Health, CDC; the same lab has performed similar analyses on urine samples from the US National Health and Nutrition Examination Survey (NHANES). The seven PAH analytes were hydroxylated metabolites of naphthalene, fluorene, phenanthrene, and pyrene. Median creatinine-adjusted PAH metabolite concentrations (ng/g creatinine) were compared with potential correlates to PAH exposure.

Results All seven measured PAH metabolites in the study population were markedly elevated compared to the US population. For example, the median value for 1-hydroxypyrene in Bomet was 1190ng/g in males (vs. 106ng/g in NHANES), and 2840ng/g in females (vs. 133ng/g in NHANES). Age (< 50 years), sex (female), and indoor cooking (yes) were significantly ($p < 0.01$) associated with higher PAH concentrations for all measured metabolites. Regular tobacco use was not reported by many participants (19%), and was not associated with PAH concentrations.

Conclusion PAH metabolite concentrations in Bomet were very high when compared to the US population. Elevated PAH concentrations were associated with age, sex, and indoor cooking. Further assessment is needed to determine the sources of PAH exposure in this high-risk population. Additional studies should also aim to define the association between high PAH exposure and risk of developing ESCC.

PRESENTATION

Mwachiro, Michael

METHODS FOR ASSURING COLLECTION OF HIGH-QUALITY BIOLOGIC SAMPLES

CANCER EPIDEMIOLOGY

14:40–16:00

Friday

10 November

Mwachiro, Michael¹; Burgert, Stephen¹; Chepkwony, Robert¹; Kiniga, Emmanuel¹; White, Russell¹; Dawsey, Sanford²
¹Tenwek Hospital; ²National Cancer Institute

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Overview The link between the study of disease and excellent data is the collection of high quality biologic samples and other bio- data. This process is a continuum from subject screening, enrolment and specimen accrual. Tenwek Hospital is a tertiary referral facility in South Western Kenya that is in an endemic area for esophageal squamous cell carcinoma (ESCC). We share our experience with sample collection in epidemiological and early detection studies for ESCC. The process involved sample collection of blood, saliva, urine and endoscopic biopsies. We shall highlight the process of sample labelling, storage, transportation and the quality control process. All of the steps in this chain need to have appropriate monitoring and standard operating procedures.

Conclusions Quality research is directly connected to high quality designs and collection of high quality samples.

POSTER

POSTER SESSION TWO

16:30–18:00
Thursday
9 November

Mwachiro, Michael

P231 | TEA (CHAI) AND OESOPHAGEAL CANCER: EXTREMELY HOT TEMPERATURE, BUT NOT THE PAH CONTENT, MAY BE A RISK FACTOR IN WESTERN KENYA

Mwachiro, Michael¹; Parker, Robert¹; Chepkwony, Robert¹; Abnet, Christian²; Dawsey, Sanford²; White, Russell¹

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Objective Esophageal squamous cell carcinoma (ESCC) is common in certain areas worldwide. One such area, western Kenya, has a high risk of ESCC, including many young cases (< 30 years old), but has limited prior study of potential risk factors. Thermal injury from hot food as well as beverages and exposure to polycyclic aromatic hydrocarbons (PAHs) have been proposed as important risk factors for ESCC in other settings. In western Kenya, the consumption of hot milky black tea (chai) is almost universal.

Methods We performed an observational study of the preferred temperature of tea consumption in healthy adults. The preferred temperature was measured by questionnaire and then by digital thermometer. Comparisons of these results were assessed by kappa statistics.

Results One hundred subjects participated, including 78 men and 22 women. The mean preferred temperatures were 72.1°C overall, 72.6°C in men, and 70.2°C in women ($p < 0.05$). These temperatures were higher than the mean temperatures of hot beverages previously reported from any other population. Kappa values demonstrated moderate agreement between questionnaire responses and measured temperatures. Samples of 11 brands of commercial Kenyan tea leaves were collected and analyzed by gas chromatography/mass spectrometry to quantify the concentrations of 26 selected PAHs. The PAH levels were uniformly low (total PAH < 300 ng/g of leaves).

Conclusions People in western Kenya drink extremely hot chai, which may be related to their high risk of ESCC. This tea is not, however, a source of significant PAH exposure. Hot tea consumption should be further evaluated as a risk factor for ESCC in Kenya.

POSTER

WELCOME RECEPTION AND POSTER SESSION ONE

16:30–18:00

Tuesday
7 November

Mwaiselage, Julius

P421 | IMMUNE RESPONSES BETWEEN EPIDEMIC AND ENDEMIC
KAPOSI'S SARCOMA PATIENTS AT OCEAN ROAD CANCER INSTITUTE,
DAR ES SALAAM

Mwaiselage, Julius^{1,2}; Lidenge, Salum^{1,2}; Richard, John¹; Minhas, Veenu³;
Wood, Charles³; West, John³

¹Ocean Road Cancer Institute; ²Muhimbili University of Health and Allied
Sciences; ³University of Nebraska

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Background Mechanisms underlying Kaposi's sarcoma (KS) development are unclear. The high incidence of KS in HIV-1 individuals implicates immune dysregulation in epidemic KS (EpKS) development. In African endemic KS (EnKS), the immune response is uncharacterized.

Objective To longitudinally characterize the KSHV nAb response and its correlation to KSHV viral load and to HIV-1 or KS treatment.

Methods A sample size of 200 subjects was estimated for this study and the recruitment started in May 2015. Standardized questionnaire was used to collect socio-demographic and disease information of the subjects. Skin punch biopsy, 10ml blood and buccal swab specimens were collected from the subjects. A total of 20 non-cancer controls (HIV- = 10, HIV+ = 10) were recruited for a sub-study. After differential detection of KSHV nucleic-acids in the specimens, neutralizing antibody (NAb), levels of cytokines/chemokines, and T-cell differentiation subsets were quantified. The Mann-Whitney U-test was used to assess median differences between groups. All tests were 2-tailed and P-values <0.05 were considered significant.

Results A total of 183 were recruited for the study period of May 2015–April 2016. For this initial analysis, randomly selected 25 EpKS and 14 EnKS as well as 20 non-cancer controls were used. The mean age of the of the epKS, enKS, HIV- controls and HIV+ controls were 38.1 years, 46.7 years, 43.3 years and 38.8 years, respectively. Similarly, the mean CD4 counts in cells/ μ L for epKS, enKS, HIV- controls and HIV+ controls were 290, 808, 684, 447, respectively. KSHV was significantly more frequently detected in EpKS patients than in EnKS. While all EpKS, and some EnKS patients mounted NAb responses, the EpKS patients had higher prevalence and titer of NAb compared to EnKS patients ($P=0.001$). Levels of the cytokines IP-10 and IL-10 were higher in EpKS versus EnKS patients ($P=0.006$ and $P=0.005$ respectively), whereas, IL-4 was lower in EpKS versus EnKS patients ($P=0.004$). The levels of all 14 cytokines/chemokines measured were comparable between EnKS patients and HIV- controls. The distribution of CD4+ and CD8+ T-cells was similar between EpKS and EnKS such as naïve and effector T-cells were depleted while central memory T-cells were elevated in both KS forms.

Conclusions The detection of similar abnormalities in T-cell differentiation subsets in both EpKS and EnKS as compared to controls, suggests that KSHV-induced T-cell dysfunction plays a major role in the disease, and that HIV-1 co-infection is only exacerbating and accelerating KSHV pathogenesis and KS development.

POSTER

Mwamba, Peter

P422 | CANCER BURDEN IN HIV/AIDS INFECTED PATIENTS AT THE KENYATTA NATIONAL HOSPITAL

**WELCOME
RECEPTION
AND POSTER
SESSION ONE**

16:30–18:00

Tuesday

7 November

Mwamba, Peter¹; Mudeny, Mark²; Yihan, Lu³; Muiruri, Peter²
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Background Cancer as a disease ranks third as a cause of death in Kenya after infectious and cardiovascular diseases. Although population based data does not exist in the country, it is estimated that the annual incidence of cancer is about 28,000 cases and the annual mortality is over 22,000 people. Among HIV/AIDS patients the cancer incidence and spectrum of cancer diagnosis in HIV affected patients has shifted. There is scarcity of data on the frequency and survival of malignancies in cancer patients from Kenya.

Objectives The objective of this study was to determine the spectrum of malignancies in HIV infected individuals attending a National Referral Hospital in Kenya.

Study setting, Design and Methods This was a retrospective analysis of data of all HIV infected individuals with a cancer diagnosis from January 2004 to December 2016. Data was extracted from existing records and tabulated for analysis.

Results Top ten cancer diagnoses in male and female. An overall variation in the cancer frequencies was observed over the years 2004–2006, 2008–2010 and 2014–2015. A total of 756 cases were linked between the cancer diagnosis and HIV diagnosis of which 218 were males and 538 females. Cancer in HIV affected persons showed a perfectly normal distribution with a peak at 30–50 years the age of most sexually active. Females at the reproductive age showed a higher cancer burden than their male counterparts. The cancer types in females were: cervical cancer (41.6%), Non Hodgkins lymphomas (10.2%), Breast cancer (8.6%), cancer of the vulva (5.9%) were the commonest; In Males; Non-Hodgkins lymphomas (15.6%), Cancers of eye and adnexia (10.6%), Liver (10%), Nasopharyngeal (4%), Esophagus (3.7%). Common cancers associated with HIV/AIDS like Kaposi Sarcoma are reducing in incidence partly due to medication (HAART) but also because some of these are treated as outpatient and may not necessarily be admitted in the wards.

Conclusion Better understanding of the epidemiology and survival outcomes cancer in HIV infected patients and also in non-HIV infected will contribute significantly to the overall benefit to the care of these patients in Kenya. In Kenya in particular factors that influence outcome of treatment and prognosis such as CD4 counts, treatment regimen and other socio-demographic information and their impact on prognosis and influence on treatment outcomes should be studied further.

PRESENTATION

PALLIATIVE CARE & OTHER ABSTRACTS

14:40–16:30

Wednesday

8 November

Mwebesa, Eddie

LOWERING THE COST OF PHARMACEUTICAL MANUFACTURE OF ORAL LIQUID MORPHINE RESULTS IN MORE OPTIMAL MANAGEMENT OF CANCER PAIN IN UGANDA

Mwebesa, Eddie¹; Ntege, Christopher¹; Nanonno, Monica¹;

Zirimanya, Ludoviko¹

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Globally cancer patients suffering with severe pain require opioid pharmaceutical formulations to manage the pain. Over 69,000 patients in Uganda require morphine annually for the management of moderate to severe pain. A 500mL bottle of oral liquid morphine 20mg/5mL in many Western countries costs over 38 US dollars. These formulations are therefore unaffordable in resource limited settings like sub-Saharan Africa where disease prevalence is highest and patients are impoverished by their illnesses.

The Treat the Pain Program of the American Cancer Society and Hospice Africa Uganda (HAU) undertook to study the factors which influence the cost of oral liquid morphine and develop a model through which the cost could be kept affordable for Uganda's Ministry of Health.

The model included the use of a simple formula to reconstitute morphine powder into an aqueous solution preserved with bronopol and coloured with confectionery dyes to differentiate strengths.

Morphine powder is imported without unbudgeted profits levied by middlemen and made into solutions using locally trained pharmacy technicians using Standard Operating Procedures agreed by the National Drugs Authority. Morphine is bottled in locally manufactured plastic vessels onto which pre-printed labels are affixed. With a weekly average production of 1,500 bottles HAU is able to optimally utilize its human resource to cover both the dispensing and the production pharmacies and therefore save costs.

The morphine production unit focuses on only two formulations 5mg/5mL and 50mg/5mL which cost 2.9 and 10.5 US Dollars per 500mL respectively.

This model allowed Uganda to nearly quadruple its morphine consumption between 2011 and 2016, and the Government to afford free oral liquid morphine for all citizens who need it.

POSTER

Mwebesa, Eddie

P280 | PREVALENCE AND BURDEN OF SYMPTOMS DURING THE NURSING OF CANCER PATIENTS AT AN OUTPATIENT HOSPICE IN UGANDA

Mwebesa, Eddie¹; Zirimanya, Ludoviko¹; Musoke, Charles¹
¹Hospice Africa Uganda

**POSTER
SESSION
TWO**

**16:30–18:00
Thursday
9 November**

Correspondence emwebesa@hospiceafrica.or.ug

The prevalence of cancer and that of HIV/AIDS is increasing in Uganda and throughout sub Saharan Africa. Unfortunately, little is known about the prevalence and burden of symptoms in patients with Cancer alone, and those who have cancer and concurrent HIV/ AIDS at first referral to a palliative care service.

Objective This study aimed to compare the prevalence and symptom burden between patients with Cancer only and those with cancer and HIV co-morbidity referred to the palliative care setting of a free-standing Hospice in an urban area.

Method This was a retrospective point prevalence survey of 150 randomly selected charts of patients referred to Hospice Africa Uganda (HAU) from 2013. Of the 471 eligible patients' charts, 168 were randomly selected and only 150 were included in the study. A chart review instrument was used to extract information from the charts. Data were entered into Epidata version 3.1, cleaned and analysed using Epidata Analysis and Excel

Results Of the 150 patients' records: 78 (52%) had Cancer only diagnosis and 72 (48%) had both AIDS and cancer diagnosis. Pain was prevalent in 91.7% of the AIDS patients while was present in 100% of those with cancer only. Three quarters reported pain as moderate to severe in both groups of patients. The five most prevalent symptoms in the AIDS with cancer group were pain (91.7%), social distresses (38.9%), body swelling (27.8%), Anorexia (22.2%) and skin eruption (16.7%) while in the Cancer alone group were pain (100%), body swelling (25.6%), Anorexia (23.1%), social distresses (20.9%) and fatigue (17.9%). The average number of symptoms was 4.8 (2.3) in the Cancer group and 4.7 (2.3) in the AIDS–Cancer group.

Conclusion Pain is highly prevalent in both Cancer only and patients suffering both a malignancy and HIV/AIDS. The four most prevalent symptoms namely pain, social distresses, body swelling and anorexia are similar in both groups of patients. Social distresses occur highly in AIDS with Cancer patients. The mean symptom burden is similar across both groups of patients. Symptom control remains central in nursing and the holistic management of patients with cancer, and is equally as important with HIV co-morbidity.

POSTER

POSTER SESSION TWO

16:30–18:00
Thursday
9 November

Mwebesa, Eddie

P361 | FROM THE KITCHEN SINK TO AUTOMATION: HOW THE MODERNIZATION OF PHARMACEUTICAL MANUFACTURE OF ORAL LIQUID MORPHINE HAS REVOLUTIONIZED THE MANAGEMENT OF CANCER PAIN IN UGANDA

Mwebesa, Eddie¹; Nanonno, Monica¹; Ntege, Christopher¹;
Zirimanya, Ludoviko¹
¹Hospice Africa Uganda

Correspondence emwebesa@hospiceafrica.or.ug

Over 65% of the cancer patients in Uganda require opioid medications for the management of severe pain. Oral liquid morphine, the medication of choice for patients in their homes, has been reconstituted at Hospice Africa Uganda (HAU) from powder into a solution using a simple formula. Simple Palliative Care was introduced into the country in 1993. Morphine powder was dissolved in a bucketful of tap water, coloured with cake dyes and preserved with bronopol. The product was then packaged in recycled plastic mineral water bottles and the entire process was carried out by 1 or 2 pharmacy technicians in a modestly-controlled environment and without standard operating procedures.

In order to achieve its goal of improving availability and access to essential pain medication HAU entered a private-public partnership with the National Medical Stores and the Ministry of Health to escalate morphine production five-fold so that the medication is available for free for all patients in need in Uganda.

Because of the need to ensure that morphine is of good quality and that large scale manufacture is adherent to current Good Manufacturing Practices (cGMP) HAU made infrastructural modifications to its morphine unit. Through American Cancer Society's Treat the Pain Program, pharmaceutical grade manufacturing equipment was procured to enable a more efficient manufacturing system. A reverse osmosis water purification system provides pharmaceutical-grade water. An automated machine ensures quick and accurate filling and capping of bottles.

These changes will increase the production rate a further 8-fold and eradicate nationwide opioid stock outages so that there is universal access to oral liquid morphine for all patients in need in Uganda. This upgrade means Uganda can safely produce high-quality, efficacious medicines according to WHO cGMP standards, and that all citizens who need relief of severe pain can now receive it.

POSTER

POSTER SESSION TWO

16:30–18:00
Thursday
9 November

Mwebesa, Eddie

P362 | ASCERTAINING THE NEED FOR PALLIATIVE CARE SERVICES FOR CHILDREN SUFFERING FROM ADVANCED CANCER IN WESTERN UGANDA: FINDINGS OF A BASELINE SURVEY

Mwebesa, Eddie¹; Kamate, Antonia¹; Mucunguzi, Jackson¹; Kimbowa, Musa¹; Masereka, Mackay¹
¹Hospice Africa Uganda

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This situation analysis was conducted in June 2014 for a UK Department for International Development (DFID) project to expand access and scope of paediatric Palliative Care (PPC) services in Western Uganda. The study established a baseline against which the project is benchmarked, and guided how needs of children with cancer seeking PC services would be met.

The cross-sectional study employed mixed methods The study covering 3 districts met Organization for Economic Co-operation and Development and Development Assistance Committee (OECD/DAC) and DFID Evaluation policy guidelines for objectivity, impartiality and transparency. Respondents included 16 children with cancer and their families, 2 officials of the Health Ministry, faculty from 2 medical schools, 10 managers from 6 partner institutions and 17 Community Volunteer Workers (CVWs).

There are 3,779 children in Western Uganda with cancer in need of PPC services in a setting where very few health facilities are offering only a limited PPC service. 2.6% of children suffering from cancer are accessing PPC services. The curriculum for medical students did not have PPC components within it and doctors were graduating without knowledge and skills managing the needs of children suffering from cancer. The CVW curriculum was deficient in PPC topics. 17 CVWs completed self-administered questionnaires which highlighted they needed to be trained to become competent in identification of PPC needs, basic nursing, counseling, and Children's Rights and Protection issues. PPC for children with cancer is not integrated into the general health services of hospitals at district level.

Western Uganda has a huge unmet need for PPC services for children with cancer. Curriculums of university students and CVWs need to be revised so that professionals emerging from these institutions are competent in PPC. District health services have not integrated PPC into their health services delivery.

POSTER

POSTER SESSION TWO

16:30–18:00
Thursday
9 November

Mwebesa, Eddie

P363 | ASSESSMENT OF THE READINESS AND AVAILABILITY OF PALLIATIVE CARE SERVICES FOR CANCER AND OTHER PATIENTS IN HOSPITALS IN KAMPALA, UGANDA

Mwebesa, Eddie^{1,2}; Atuhairwe, Christine²; Sempeera, Hassard²; Alege, John Bosco²; Akugizibwe, Pardon Akugizibwe²; Odoch, Richard²

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In Uganda, there are approximately 350,000 patients with illnesses needing palliative care and among whom 210,000 persons in pain are in urgent need of Palliative care. Further, palliative care was introduced to improve the quality of life of patients and their families who are facing problems associated with life-threatening illness, whether physical, psychosocial or spiritual. More still, palliative care reduces unnecessary hospital admissions and the use of health services.

However, the use of morphine and other controlled medicines that are essential for palliative care are overly restricted by regulations thereby hindering access to adequate pain relief and palliative care. Furthermore, palliative care has been incorporated into the Uganda's Health Sector Strategic and Investment Plans but has been hampered by minimal resources and huge shortages of health workers.

Further, Uganda has one of the most rapid growth of palliative care in Africa as well as the only country in sub-Saharan Africa graded as having "Stage 4" comprehensive palliative care according to the Global Atlas of Palliative Care (Worldwide Palliative Care Alliance, 2014). Additionally, Uganda was ranked 35th out of 80 countries for the Quality of death Index (Economist Intelligence Unit, 2015). Despite these accolades, hospital-based palliative care is not universally available throughout the country. In 2014 the Ministry of Health provided only 103 million Uganda shillings for development of Palliative care in its national budget. This is a small amount to share, and as most hospitals received very little funding for palliative care, it is likely that hospital medical superintendents used discretionary funds to provide the service.

The objective of this study was to assess the readiness and availability of palliative Care services in hospitals in Kampala, Uganda from April 2016 to June 2016.

Methods A cross sectional study design was used.

Results The study found that 7 of the 27 hospitals (26%) were offering palliative care, 6 (22%) had a specialized staff offering palliative care and only 5 (19%) had a staff designated to coordinate palliative care services. Overall, the level of readiness to provide palliative care was found to be very low with only 3 of the 27 hospitals (11%) demonstrating readiness as per the set criteria (availability of pain medication in stock, availability of morphine in stock and availability of a healthcare worker to provide palliative care).

Conclusion Readiness and availability of palliative care services is very low among hospitals in Kampala.

POSTER

WELCOME RECEPTION AND POSTER SESSION ONE

16:30–18:00

Tuesday

7 November

Mwebesa, Eddie

P405 | ADVOCACY AND NETWORKING AT STAKEHOLDERS MEETINGS TO STREAMLINE PRODUCTION, DISTRIBUTION AND ACCESS OF ORAL MORPHINE FOR THE MANAGEMENT OF CANCER PAIN IN UGANDA

Mwebesa, Eddie¹

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In addition to the “cancer divide” there are regional and local disparities in access to pain medications in Africa. While over 69,000 patients in Uganda, most of them suffering from cancer, require morphine annually for the management of moderate to severe pain only 10% of them receive appropriate pain treatment.

In order to systematically address the factors which conspire to limit availability and access of essential pain medicines in Uganda the Ministry of Health and the Palliative Care Association of Uganda built consensus among key stakeholders in the areas of morphine production, distribution and consumption to convene every quarter, examine and manage the bottlenecks limit morphine availability and accessibility.

The Morphine Stakeholders Meeting (MSM) is regularly attended by 7 institutions. Challenges to morphine availability and accessibility identified included insufficient consumption data, inability to forecast demand for timely ordering of stocks, poor book-keeping, uncoordinated medication delivery cycles, bureaucratic documentation and insufficient trained opioid prescribers.

Innovative interventions from the MSM included quarterly reporting by all stakeholders, direct and improved communication from the National and Joint Medical Stores during ordering for manufacture of morphine, creating of buffer stocks, establishing a minimum monthly morphine production level, the removal of unnecessary bureaucracy and redundant paperwork, accrediting hospitals to have morphine, and advocating that more nurses are trained to prescribe morphine.

The MSMs have markedly improved availability and accessibility, and contributed to a 6-fold increase in morphine consumed in Uganda between 2011 and 2016.

POSTER

WELCOME RECEPTION AND POSTER SESSION ONE

16:30–18:00

Tuesday

7 November

Nabweteme, Julie

P107 | VIRAL HEPATITIS AND SCHISTOSOMIASES; RISK FACTORS FOR HEPATOCELLULAR CARCINOMA IN UGANDA

Nabweteme, Julie^{1,2}; Ocama, Ponsiano^{1,2}; Kirk, Gregory D^{2,3}

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Background Hepatocellular carcinoma (HCC) is among the most common cancers in sub-Saharan Africa. Most HCC in sub-Saharan Africa has been attributed to endemic Hepatitis B Virus (HBV) infection. HIV infection accelerates the progression of liver disease in the setting of HBV co infection. HCC incidence is increasing in North America and other regions with prolonged Anti Retro viral Treatment (ART) interventions. The direct and virally-mediated impact of HIV infection on HCC remains unclear, particularly in African setting. In this study, we aim to define HCC risk factors in Uganda, emphasizing the independent role of HIV infection and to contrast the etiology of HIV-associated HCC compared to non-HIV HCC

Methodology This is a hospital-based case control study identifying HCC cases from the gastroenterology service and the Uganda Cancer Institute; Controls recruited from the orthopedic wards of Mulago hospital. HCC cases are defined based on the Ultrasound examination showing liver mass(es), clinician's suspicion of HCC based on history and clinical exam, AFP as tumor marker (≥ 100 ng/ml) and histopathology on $\sim 20\%$ particularly done at UCI and if AFP is non-diagnostic. Controls are free of clinical liver disease and are frequency matched to cases on age and gender. Data is collected using a standardized questionnaire to assess various exposures on history and clinical exam. Ultra sound scan is done for cases only. Laboratory markers assessed include HIV markers, HBV and HCV serology, aflatoxin biomarkers, liver panel and AFP.

Results Two-thirds of HCC cases are male, median age is 40 yrs. Most present with weight loss, hepatomegaly and abdominal pain. Majority presented with multifocal disease ($>80\%$) $<10\%$ would be potentially eligible for potentially curative treatment (<3 lesions; <3 cm diameter) The odds of having HCC among HBsAg+ cases is up to 39 [P-value <0.001], Schistosomiasis positive cases have 3.3 [CI 1.9–5.7] increased odds of HCC [P-value 0.00]. Not coming from the central region increased odds of having HCC by 0.6 [P-value 0.04]. Out of the 237 HCC cases that were recruited in first 2 years, only 49 were alive at 6months follow up.

Conclusion HCC cases in Uganda present at advanced stages with significant early mortality. A majority of HCC is attributable to chronic HBV infection. HIV potentially increases risk, even after adjusting for HBV infection. Schistosomiasis may represent an additional important and potentially modifiable risk factor. Improving mortality from HCC will likely require reducing risk factors and earlier HCC identification

PRESENTATION

HIV
ASSOCIATED
MALIGNANCIES
14:40–16:30
Thursday
9 November

Nakalembe, Miriam

PREVENTION AND EARLY DETECTION OF CERVICAL CANCER THROUGH SELF-ADMINISTERED SCREENING IN THE COMMUNITY

Nakalembe, Miriam¹; Makanga, Philippa¹; Swanson, Megan¹; Martin, Jeff¹; Huchko, Megan²

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Background Sub-Saharan Africa (SSA) bears the world's highest incidence of high risk HPV infection (hrHPV) and cervical cancer. To address the lack of widespread screening and treatment that contributes to this burden, the World Health Organization recommends that low-resource countries adopt simplified protocols for screening directly coupled with treatment. We evaluated the feasibility of a community-based program featuring self-administered HPV screening and mobile treatment provision.

Methods In a rural district in western Uganda, we first trained Village Health Team members (VHTs, also known as Community Health Workers) in a 1-day session in the fundamental aspects of cervical cancer and its prevention. We then provided guidance to the VHTs to mobilize adult women from different communities within the district to attend a one-day HPV screening fair at a central location in their respective community. On the day of the fair, the study team and VHTs provided educational talks and instructions for self-collection of a vaginal sample for hrHPV. The samples were subsequently tested for hrHPV mRNA using the APTIMA® platform. Participants who tested positive for hrHPV were contacted and referred for treatment with cryotherapy by a mobile treatment unit which came to their community. Prior to treatment, women underwent visual inspection with acetic acid and cervical biopsy for final cervical disease ascertainment.

Results Between March 2016 and April 2017, a total of 1035 women were enrolled from 16 communities, and 1030 (99%) provided a self-collected vaginal sample. The median age of the participants was 34 years (interquartile range 23–40), 13% reported being HIV-infected, and only 6% reported being previously screened for cervical cancer. Based on mRNA detection, the prevalence of any hrHPV was 22% (HPV-16, 3.7%; HPV-18/45, 2.9%). Among the women with detectable hrHPV, 85% were successfully contacted about their results, of which 87% obtained treatment by a mobile treatment team. Age, parity, marital status and HIV seropositivity were associated with presence of hrHPV in unadjusted analyses. When adjusted for age, marital status, parity, pregnancy and HIV serostatus, we found that only older age (odds ratio=1.03, 95% CI 1.01–1.05) and HIV seropositivity (OR=2.8; 95% CI: 1.83–4.29) remained significantly associated with hrHPV.

Conclusion A community-based screening program administered by VHT's and featuring self-collected vaginal swabs and mobile treatment was feasible. Prevalence of hrHPV was substantial and similar to other estimates in SSA. The findings support further optimization and evaluation of this community-based screening program as a means of cervical cancer control.

POSTER

POSTER SESSION TWO

16:30–18:00
Thursday
9 November

Nakku, Salimah

P281 | FACTORS AFFECTING UPTAKE OF CERVICAL CANCER SCREENING SERVICES AMONG WOMEN OF REPRODUCTIVE AGE IN BUWOLYA VILLAGE, MAYUGE DISTRICT

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Introduction Cervical cancer screening is an early strategy to prevent cancer of the cervix by finding and treating early anatomical changes that may occur at the neck of the uterus called the cervix (WHO 2015). This intervention can help to control the escalating numbers of women reporting to health facility with advanced cervical cancer and the associated financial and psychosocial issues. This study assessed the factors influencing uptake of cervical cancer screening services among women of reproductive age in Buwolya Village, Mayuge District.

Methods The study adopted a descriptive cross sectional study design in which quantitative approaches of data collection and analysis were used. Information was derived directly from respondents by use of face-to-face interviews using structured interviewer guided questionnaires. The study population for this study comprised of women of reproductive age (18 years and above) who had resided in Buwolya village for at least one year.

Results Four socio-demographic factors had a statistically significant influence on the up take of screening of cervical cancer among women of reproductive age in Buwolya Village. The Age of respondents influenced cervical cancer screening uptake ($p = 0.021$, $X^2 = 7.117$), and so did the Marital status ($p = 0.000$, $X^2 = 15.784$), Education level ($p = 0.000$, $X^2 = 27.249$), and the number of children the respondent had ($p = 25.465$, $X^2 = 0.000$).

Recommendations Results from this study indicated that uptake of cervical cancer screening by women in their reproductive age stands at 5%. For that reason therefore, it was recommended that the District Health Team and the Local leadership institute urgent and drastic measures to launch a health education campaign in this community in order to demystify any myths and misconceptions that may be existing and to create demand for the service.

POSTER

POSTER SESSION TWO

16:30–18:00
Thursday
9 November

Nalwoga, Angela

P232 | AGE OF INFECTION WITH KAPOSI SARCOMA ASSOCIATED HERPESVIRUS AND SUBSEQUENT ANTIBODY LEVELS AMONG CHILDREN FROM UGANDA

Nalwoga, Angela^{1,2}; Miley, Wendell³; Labo, Nazzarena³; Elliott, Alison^{1,2};
Cose, Stephen^{1,2}; Whitby, Denise³; Newton, Robert^{1,4,5}

¹MRC/UVRI Uganda Research Unit; ²London School of Hygiene & Tropical
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High antibody titres against Kaposi sarcoma associated herpesvirus (KSHV) are associated with increased risk of Kaposi sarcoma (KS) and with viral shedding in saliva. We investigated the association between age at KSHV seroconversion and KSHV antibody levels among children aged six years in Uganda.

We tested plasma samples from children enrolled in a birth cohort on whom plasma samples were collected yearly; at age six, 176/535 children were seropositive for KSHV. In these children, we measured antibody levels to the KSHV K8.1 (lytic) and ORF73 (latent) antigens using a bead-based assay. We retrospectively tested the serum/plasma of the 176 seropositive children, from ages five to one to estimate their seroconversion age.

We found that KSHV seroprevalence increased with age. Using sex adjusted linear regression modelling, for every year of delay in seroconversion age, we observed a 16% decrease in K8.1 antibody levels (adjusted Geometric Mean Ratio/aGMR of 0.84, 95% CI (0.75 – 0.93), $p=0.001$) and a 27% decrease in ORF73 antibody levels (aGMR of 0.73, 95% CI (0.66 – 0.83), $p<0.0001$). These findings suggest that early infection with KSHV leads to higher subsequent antibody levels.

Since high KSHV antibody levels have been associated with KS disease and viral reactivation, an early infection may be an important risk factor for KSHV pathogenesis, as well as for viral shedding in saliva, leading to increased transmission.

POSTER

Ndayisaba, Marie Claire

P298 | A RARE AGGRESSIVE GASTROINTESTINAL STROMAL TUMOUR ORIGINATING FROM PERITONEUM: A CASE REPORT AND THE DIAGNOSTIC CHALLENGES IN LIMITED RESOURCE SETTING

Ndayisaba, Marie Claire^{1,2}; Vuhahula, Edda^{1,2}; Mtaturu, Gabriel Francis²
¹Muhimbili University of Health and Allied Sciences; ²Muhimbili National Hospital

POSTER

SESSION

TWO

16:30–18:00

Thursday

9 November

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Introduction Gastrointestinal Stromal Tumors (GISTs) constitute the most common mesenchymal tumor of the gastrointestinal (GI) tract arising from the interstitial cells of Cajal. Very rarely, GISTs may originate outside the GI tract. The diagnosis is made by histomorphology, positive c-Kit immunoexpression and molecular studies. However, for extragastrointestinal stromal tumor (EGIST), histomorphologic diagnosis by routine staining only may complicate the reaching of correct diagnosis and therefore jeopardize the management of the patient.

Case Report We report a 37-year-old female followed at Muhimbili National Hospital (MNH), Tanzania, since 2013. She reported right nephrectomy in 2010 at another hospital that concluded to poorly differentiated renal cell carcinoma by Hematoxylin and Eosin (H&E) stain. In December 2013, during elective twin cesarean section at MNH, peritoneal masses were incidentally discovered. In early 2014, the masses were initially removed at MNH (diagnosed as metastatic RCC). Later at another hospital abroad she was subjected to GIST therapy confirmed by immunostain panel. In 2016 she developed abdominal symptoms and was referred for Positron Emission Tomography (PET) and Computed Tomography imaging. Multiple deposits were found in the peritoneum and pelvis. Debulking surgery was performed, histopathology with ancillary tests concluded to epithelioid leiomyosarcoma, where chemotherapy was provided. Six months later she developed acute renal injury and received hemodialysis at MNH. In January 2017, she came back with abdominal distention. Abdomino-pelvic imaging revealed disseminated masses with cysts involving small bowel, omentum, abdominal wall and retroperitoneum. Debulking of the tumors was done including the jejunum.

Results Grossly, 8 partially encapsulated masses of variable sizes were received. They were gray, soft, cystic and hemorrhagic. A part of small bowel was included and showed a solid, white-gray, soft tumor destroying the serosa. Microscopically, jejunal, mesenteric tumors and the 2014 slides review, showed similar histomorphology: diffuse neoplasm with cellular and hypercellular areas with cystic degeneration. Cells were highly pleomorphic and epithelioid with vacuolated cytoplasm, hyperchromatic nuclei exhibiting coarse chromatin, conspicuous nucleoli and high mitotic activity. At the jejunum, the tumor involved only the serosa. Immunostains: neoplastic cells showed strong positivity to c-kit and were negative to estrogen, smooth muscle actin and cytokeratins. The conclusion was malignant epithelioid GIST. The patient was referred for adjuvant chemotherapy.

Conclusion The diagnosis of GISTs especially those involving non-GIT sites may be challenging in cases of ambiguous epithelioid histomorphology and limited ancillary tests. The use of advanced diagnostic techniques is paramount to differentiate it from the mimickers.

POSTER

Ndiaye, Fatou Samba Diago

**P272 | PROFIL DES ANOMALIES CYTOGENETIQUES RENCONTREES
AU COURS DE LA LEUCEMIE MYELOÏDE CHRONIQUE A DAKAR
(SENEGAL)**

**POSTER
SESSION
TWO**

16:30–18:00

Thursday

9 November

Ndiaye, Fatou Samba Diago¹

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Introduction Le caryotype conventionnel, identifie le chromosome Philadelphie (9;22) (q34;q11) au cours de la leucémie myéloïde chronique dans 95% des cas, mais également d'autres anomalies cytogénétiques dont certaines sont de mauvais pronostique. Cette étude vise à décrire le profil cytogénétique au diagnostic des malades atteints de leucémie myéloïde chronique.

Matériels et méthodes Une étude rétrospective (janvier 2006–juin 2016), descriptive, multicentrique (CHU Le Dantec, Centre National de transfusion Sanguine, Hôpital Principal de Dakar), a porté sur les dossiers de leucémie myéloïde chronique. Pour chaque observation, nous avons analysé les données du caryotypage conventionnel au diagnostic.

Résultats ont été colligés 297 dossiers de malades d'âge médian 39 ans [8-82 ans]. Le sex-ratio est de 1,23. Les analyses cytogénétiques ont été la technique FISH dans 33% des cas (n=98), et le caryotypage conventionnel couplé à la FISH dans 67% des cas (n=199). Le caryotype conventionnel a identifié le chromosome (Chr) Philadelphie seul dans 135 cas, une anomalie surajoutée dans 36 cas et un échec de culture dans 28 cas. Les anomalies cytogénétiques additionnelles structurales sont : 11 cas de del Chr 22 , 6 cas de duplication Chr Philadelphie, 2 cas d'inversion péricentrique Chr 9, 2 cas de fusion BCR-ABL sur Chr 22q. Les anomalies cytogénétiques additionnelles numériques sont les translocations : 1 cas t (6-8), 1 cas t (2;11) +del partielle du Chr 6q (1cas), 2 cas t (20;9;22); 1 cas t (9;22;2), 1 cas t (3;7;11) ; 1 cas t (9;22;11), 3 cas de trisomie 8, 1 cas de conservation du BCR résiduel, 2 cas de dérivé du Chr 13 et présence de matériel du Chr 7p sur les dérivés 9/16.

Conclusion Dans notre étude, les anomalies chromosomiques surnuméraires sont nombreuses et diverses. La trisomie 8, la duplication du Ph font partie des anomalies identifiées par les auteurs comme étant de mauvais pronostique. Leur impact impose une réalisation systématique du caryotypage au diagnostic et au cours du suivi. Dans notre région, il faut une plus grande accessibilité des explorations cytogénétiques.

POSTER

WELCOME RECEPTION AND POSTER SESSION ONE

16:30–18:00

Tuesday
7 November

Ndiaye, Ramatoulaye

P034 | PROFIL EVOLUTIF DES TAUX PLASMATIQUES DE GALECTINE-3 AU COURS DE LA CHIMIOThERAPIE ANTICANCEREUSE: INTERET PRONOSTIQUE DANS LE CANCER DU SEIN

Ndiaye, Ramatoulaye¹; Mbengue, Babacar^{1,2}; Diouf, Doudou³; Ka, Sidy³;
Ndiaye, Rockaya²; Dem, Amadou³; Dieye, Alioune^{1,2}

¹Institut Pasteur de Dakar; ²Service d'Immunologie, FMPO, UCAD;

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Pour échapper aux défenses immunitaires, les cellules cancéreuses secrètent des substances comme la galectine-3 (Gal-3). La forte expression de cette protéine serait largement associée à une croissance tumorale accrue et à une métastase. Plusieurs travaux antérieurs ont rapporté l'existence de ce phénomène dans le cancer du sein (CS) dont la prise en charge reste encore difficile en raison de l'absence de biomarqueurs de suivi.

L'objectif de notre étude a été de déterminer le profil évolutif des taux plasmatiques de Gal-3 chez des patientes atteintes de CS, afin d'apprécier la valeur pronostique du dosage de la protéine au cours d'une chimiothérapie. Ce travail a reposé sur le dosage immuno-enzymatique de la Gal-3 (ebioscience®) chez 70 patientes sous chimiothérapie (3 cures) au service de cancérologie de l'HALD et chez 42 femmes contrôles indemnes de tumeur diagnostiquée.

Le taux médian de Gal-3 était significativement plus élevé chez les patientes avant le traitement comparées aux contrôles (6,58 versus 1,58ng/ml ; $p < 0,001$). Aucune variation des concentrations de la protéine n'a été retrouvée entre les groupes de patientes obtenus suivant le grade SBR ($p = 0,385$). Cependant, la taille de la tumeur était positivement corrélée aux taux de Gal-3 circulante ($\rho = 0,571$; $p = 0,021$). Cette liaison a été confirmée par une analyse de régression logistique tenant compte de l'âge et de données clinicobiologiques ($p = 0,002$). Au cours du traitement, le dosage de Gal-3 avant chaque séance de chimiothérapie a permis de montrer une baisse significative des concentrations de la protéine chez les patientes au stade SBR I ($p < 0,035$). A l'issue du traitement, la régression tumorale apparaît marquée par un faible taux de Gal-3 chez les patientes concernées.

Nos résultats sont en faveur d'un rôle pronostique du dosage de la Gal-3 lors de la prise en charge du CS. Cette protéine étant souvent décrite comme impliquée dans l'angiogenèse tumorale et l'apoptose lymphocytaire, il serait opportun d'évaluer cette implication dans nos formes de CS à évolution rapide.

POSTER

WELCOME RECEPTION AND POSTER SESSION ONE

16:30–18:00

Tuesday

7 November

Ndiaye, Ramatoulaye

**P035 | EVALUATION DES TAUX SERIQUES DE CD25 LIBRE DANS LE
CANCER DU SEIN SOUS CHIMIOTHERAPIE: INTERET PRONOSTIQUE**

Ndiaye, Ramatoulaye¹; Mbengue, Babacar^{1,2}; Diouf, Doudou³; Ka, Sidy³;
Ndiaye, Rockaya³; Dem, Amadou³; Dieye, Alioune^{1,2}

¹Institut Pasteur De Dakar; ²Service d'Immunologie, FMPO, UCAD;

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Introduction Le cancer du sein (CS) est l'une des premières causes de mortalité par cancer chez la femme en Afrique subsaharienne. Les moyens de traitement disponibles ne permettent pas une efficacité thérapeutique parfaite chez les patientes. L'influence néfaste des lymphocytes T régulateurs (Treg) a été évoquée et l'influence de la chimiothérapie sur le comportement de ces cellules reste inexplorée.

Objectif En vue de mettre en évidence des biomarqueurs immunologiques à valeur pronostique, notre présente étude a porté sur l'évaluation de l'activité des cellules Treg à travers le dosage de l'IL-R α ou CD25 libre et sur l'analyse de son profil sérologique suivant l'état de rémission des patientes.

Méthodologie Trente quatre 34 patientes avec CS, soumises à une chimiothérapie à trois séances par patiente et 42 femmes indemnes de toute tumeur ont été concernées. Un prélèvement de sang périphérique a été fait sur tube EDTA avant les trois cures de chimiothérapie et les taux sériques de CD25 ont été évalués par ELISA.

Résultats Nos résultats ont montré l'absence de variation discriminante des taux de CD25 sériques entre les témoins et les patientes (221,33 vs 223,87 pg/ml, $p = 0,363$). Chez les patientes, les taux de CD25 augmente globalement après la première cure. Cette variation concerne essentiellement les patientes à rémission nulle en fin de chimiothérapie. En effet, comparées aux malades à rémission partielle ou totale, les patientes à évolution défavorable ont montré des taux l'IL-R α croissant au cours du suivi ($p = 0,034$). Dans le groupe des patientes à rémission totale, aucune variation significative n'a été retrouvée.

Conclusion Une étude antérieure ayant concerné le même marqueur et rapportant une augmentation de ses taux sériques chez les patientes victimes de récidives à la suite d'une radiothérapie, consolide nos résultats qui orientent vers une exploration plus approfondie des cellules T suppressives de type CD3+CD4+CD25+Foxp3+ ainsi que des cytokines qu'elles produisent dans le CS.

POSTER

Ndiaye, Rokhaya

P258 | MUTATION RECURRENTTE DU GENE BRCA1 DANS LE CANCER DU SEIN HEREDITAIRE AU SENEGAL

**POSTER
SESSION
TWO**

16:30–18:00

Thursday

9 November

Bourdon-Huguenin, Violaine³; Dem, Ahmadou¹; Dièye, Alioune^{2,4};

Diop, Jean Pascal Demba^{1,2}; Ndiaye, Rokhaya^{1,4}; Sobol, Hagay³

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Introduction La majorité des cancers du sein sont sporadiques, cependant 5 à 10% sont des formes héréditaires. Le mécanisme de la carcinogénèse dans les formes héréditaires implique plusieurs gènes suppresseurs de tumeurs comme les gènes BRCA1 et BRCA2. Plusieurs mutations conférant une prédisposition génétique au cancer du sein ont été décrites chez les populations caucasiennes, asiatiques et américaines mais rarement chez les populations africaines. L'objectif de cette étude était d'identifier les mutations du gène BRCA1 dans le cancer du sein héréditaire au Sénégal.

Méthodes Quinze cas index ayant chacun une histoire familiale de cancer du sein ont été recrutées après consentement éclairé à l'Institut Joliot Curie de l'Hôpital Le Dantec de Dakar. Une enquête familiale a été réalisée afin d'établir un pedigree et un prélèvement de sang veineux sur tube EDTA pour l'extraction de l'ADN. La recherche de mutation du gène BRCA1 a été réalisée par PCR suivi de séquençage de tous les exons du gène.

Résultats Une duplication de 10 nucléotides (934_943dupAGCCATGTGG, p.Thr276Alafs*14) a été identifiée chez 6 cas index sur les 15 recrutés. Il s'agit d'une mutation rapportée comme étant d'origine Africaine avec un effet fondateur. Cette mutation a également été retrouvée chez plusieurs apparentées saines de chaque cas index mutée. Un test génétique de la mutation a été mis en routine au laboratoire de Cytologie de l'Hôpital Aristide Le Dantec pour les femmes ayant des antécédents familiaux de cancer du sein ou de l'ovaire.

Conclusion Nous avons identifié une mutation délétère récurrente du gène BRCA1 impliquée dans la prédisposition au cancer du sein héréditaire chez les femmes Sénégalaises. Le test génétique mis en place permettra une meilleure prise en charge des patientes et une prévention chez les porteuses saines.

PRESENTATION

CANCER CONTROL AND PREVENTION

13:30–14:30

Tuesday

7 November

Ndikom, Chizoma

NURSE-LED CERVICAL CANCER SCREENING PROGRAMS

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Cervical Cancer (CC) is one of the most common cancers in women worldwide with magnitude of the deaths among women living in less developed countries. These women usually present with invasive CC at the very late stage. Studies in most Sub-Saharan African countries have reported very low uptake of CC Screening Services (CCSS) despite the fact many studies showed that the women were willing to be screened but the major barrier observed was the non-availability of CCS services. Nurse-led CCS is an area of practice in which the expertise of the nurse is required as she can function autonomously with the required training. Moreover, nurse led CCS clinics will help to increase coverage because of the vantage position of nurses and their close contact with women.

Cervical cancer screening is the systematic application of a test to identify cervical abnormalities in an asymptomatic population. There are now three major alternatives for cervical cancer screening: cytology, HPV testing, and cytology-HPV co-testing while in developing countries, visual inspection with Acetic Acid (VIA) has been found suitable for CCS. Currently recommended triage strategies for primary HPV screening include HPV genotyping for HPV16 and HPV18 and cytology.

Most developed countries have established Nurse-led CCS programmes using call-recall methods to ensure structured coverage for women ≥ 25 years while opportunistic method is being used in most developing countries. Also, it is generally accepted that organized screening is more cost-effective than opportunistic screening. Countries with established protocol for screening have achieved decrease in the incidence of CC.

The United States and United Kingdom have nurses at the fore front of their CCS programmes. Even in Africa, Kenya has implemented a model CCS programme led by clinical nurse experts. Nurses have also functioned effectively in the colposcopy service which is a key component in the UK Cervical Screening Programme as well as the United States of America. Nurses also spearheaded the implementation of the Kenya CCS project. The clinical care was based primarily on screening of women at the health-centre level by nurses using VIA and visual inspection with Lugol's iodine (VILI) being added to the screening algorithm later in the project. Nurses were also trained to carry out both cryotherapy and loop electrosurgical excision procedure in less complicated cases using screen and treat approach. This paper will focus on the need to empower nurses in developing countries to lead CCSS in order to improve access to care.

POSTER

Ndiok, Akon

P450 | COMMUNICATION ABOUT CANCER DIAGNOSIS AND MEDICATION SIDE EFFECTS: PATIENTS' PERCEPTION

**POSTER
SESSION**

TWO

16:30–18:00

Thursday

9 November

Ndiok, Akon¹; Ncama, Busisiwe¹

¹University of KwaZulu-Natal

Correspondence akonndiok157@gmail.com

Aim This paper reports a study to examine patients' perception of nurses' communication about cancer diagnosis and medication side effect and benefit of such information.

Background Communication is an important component in cancer care. Therefore, effective communication by nurses improves patients' outcome, and decreases their psychological distress, and possibly betters their coping in the disease trajectory. However, research has shown that a lot of patient do not wish to know much about the disease after the diagnosis.

Methods This study was situated within the post-positivism paradigm and took a quantitative research approach to data collection and analysis, this was to help in generalising the outcomes to the population of study and beyond. Census method was employed to select respondents for the study and 429 cancer patients (aged 18 and above) diagnosed between January, 2014 to September, 2016 participated from two settings. Structured questionnaire was the major instrument use to elicit responses. Descriptive statistics was used to sum up the socio-demographic characteristic, while, multiple linear regression was employed to investigate the relationship between communication by nurses and perceived benefits.

Results The result of the analysis shows that variables statistically significantly predict Patients' perceptions, $F(7, 429) = 2712.219, p < 0.001$ with the adjusted R square of 0.763 However, from the value of adjusted R square (0.790), it shows that the observable variables explain 0.761 per cent of the variability of the dependent variable. In addition, the size of the Beta (β) suggests that perceived benefits have the largest (0.489) impact of communication between nurses and patients.

Conclusion This study demonstrates that good patient-nurse communication provision has the prospect to benefit patients' information needs and so, enhance patients' response to check-up appointment, medication compliance and even recommendation of the hospital service to other people.

POSTER

POSTER SESSION TWO

16:30–18:00
Thursday
9 November

Ndiok, Akon

P456 | A QUALITATIVE STUDY OF HOME VISITING AS A PALLIATIVE CARE STRATEGY TO FOLLOW-UP CANCER PATIENTS BY NURSES IN CLINICAL SETTING IN A DEVELOPING COUNTRY

Ndiok, Akon¹; Ncama, Busisiwe¹

¹University of KwaZulu-Natal

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Aims/Objectives To examine the views and barriers of home visiting as a follow-up strategy and integration of palliative care into daily clinical practice for cancer patients by nurses in Nigeria and how it can be used to improve the care for cancer patients

Background Home visiting by nurses has been used in the follow-up care of maternal and child health care globally. Most cancer patients default after diagnosis, as such home visiting program can also be used as a strategy for cancer patients.

Methods A qualitative study which employed focus group discussion of nurse managers and interview of cancer in-patients in two teaching hospitals in Nigeria was conducted. A total of 19 nurse managers who are directly involved with the care of cancer patients and their family members and 11 cancer patients were recruited. Thematic content analysis was employed.

Findings Nine major themes were identified as views and benefits of home visiting services and six as resources/barriers of instituting the program. Both the focus group discussions and interview with patients had same outcomes. They agreed that, visiting cancer patients would ease a lot of problems usually encountered by patients following diagnosis of cancer which include: psychological, financial, emotional etc. Perceived barriers/resources were: hospital policies, staff shortage/ commitment lack of funding among others.

Implication for nursing and health policy Key implication that emerged from study is setting up policies for establishment of palliative care team that would oversee the home visiting program and accurate documentation of records of all patients diagnosed with cancer.

Conclusions Justifiable home visiting services can only be achieved by setting up the palliative care team and institution of hospital policy to direct its activities. Achieving this aim will be in line with the World Health Organization (WHO) advocacy of palliative care integration for chronic diseases of which cancer is inclusive.

POSTER

Ndlovu, Ntokozo

**P388 | TRAINING OF RADIOTHERAPY PROFESSIONALS –
EXPERIENCES AND CHALLENGES AT AN AFRICAN INSTITUTION**

**POSTER
SESSION**

TWO

16:30–18:00

Thursday

9 November

Ndlovu, Ntokozo¹

¹University of Zimbabwe

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Introduction Radiotherapy treatment facilities in the African continent are grossly inadequate and there is a shortage of radiotherapy personnel. Provisions for training of professionals in this field are scarce. Radiotherapy is a critical and inseparable component of comprehensive cancer treatment and care. For many of the most common cancers in Africa, radiotherapy is essential for effective treatment in more than half of cases, to cure, palliate symptoms, and to control disease that is incurable. In planning of interventions for cancer control and management, radiotherapy is frequently the last resource considered and even less so the training of radiotherapy personnel. Consequently, access to radiotherapy in Africa is unacceptably low.

Lessons Learnt Radiotherapy is technically intensive and training has to introduce unusual concepts such as radiobiology and physics of radiotherapy adding challenges to teaching radiotherapy where resources are limited. Extra effort has to be made to address such areas of training if a high standard of professionals able to work independently and deliver quality radiotherapy services is to be achieved. The University of Zimbabwe College of Health Sciences (UZ-CHS) is one institution in Zimbabwe that trains radiotherapy personnel in radiation oncology and radiation therapy technology. This paper will address the experience of the UZ-CHS over the last 3 decades in running these programs, challenges faced and impact that these training programs have had on the delivery of radiotherapy services in the country. The future of radiotherapy education and contribution to regional African capacity building in will also be discussed.

Recommendations Local training is the recommended way to achieve and sustain adequate staffing levels that allows for the planning of future expansion. The quality of training is important. There are many challenges for training in radiotherapy in the low resource settings. To overcome these, there is need for collaboration regionally and beyond. Staff retention initiatives are encouraged. Emphasis on quality management, continuous staff development and planning for equipment maintenance, upgrades and timeous replacement are equally important.

PRESENTATION

Ndlovu, Ntokozo

RADIOTHERAPY IN ZIMBABWE – ENHANCING ACCESS AND QUALITY OF CARE FOR CERVICAL CANCER

**IMPROVING
QUALITY OF
RADIOTHER-
APY DELIVERY
IN AFRICA**

07:15–08:20

Wednesday

8 November

Ndlovu, Ntokozo¹

¹University of Zimbabwe

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The growing burden of cancer as a leading cause of early death places substantial pressure on health systems to provide effective treatment services. In Zimbabwe the National Cancer Registry recorded a steady increase in annual cancer incidence over the last two decades. The number of new cancer cases among Zimbabweans in 2014 was 7018. The 4 most frequently occurring cancers in that year were cervix uteri (19%), prostate (9%), breast (7%) and Kaposi sarcoma (7%). In Zimbabwean women, cervical cancer constituted 35.5% of all cancers. In the same period and the leading cause of death was cervical cancer (12%), followed by prostate (10%), liver (8%) and oesophagus (8%).

It is therefore justified that a focus on cervical cancer as the major contributor to morbidity and mortality in Zimbabwe be made. Radiotherapy, surgery, and drug treatment in an integrated approach are in current and growing demand, which necessitates investment in these services to save lives. Radiotherapy still plays a major role in treating cervical cancer in low and middle-income countries where this disease is seen at the later stages and surgery will have a limited role. In Zimbabwe cervical cancer is the most frequently treated cancer in the radiotherapy departments with the majority of patients in stage 3.

The Government of Zimbabwe has in recent years invested significantly into radiotherapy infrastructure in the form of modern external beam, brachytherapy and planning equipment. The last two decades have seen a transformation of services to quality service provision especially for cervical cancer patients. Human resource capacity has been steadily replenished through strengthening and setting up training programs for radiation oncologists, medical physicists and therapy technicians

This transformation has also enabled the transition from 2D to 3D conformal radiotherapy treatment and modern high dose rate (HDR) brachytherapy facilities. Possibilities for further advancement in radiotherapy treatment techniques to include IMRT, interstitial and 3D brachytherapy are in process.

Sustainability of these services can be a major concern due to several factors, the main factor being that of equipment maintenance and replacement. Challenges in human and financial resources need also to be addressed as they have an impact in ensuring quality service provision.

POSTER

Ndumbalo, Jerry

P389 | INCIDENCE AND TREATMENT OF HYPERCALCEMIA IN CANCER PATIENTS RECEIVING RADIOTHERAPY – A RETROSPECTIVE REVIEW OF PRACTICE AT CHARLOTTE MAXEKE JOHANNESBURG ACADEMIC HOSPITAL (CMJAH) FROM JANUARY 2010 TO DECEMBER 2015

**POSTER
SESSION**

TWO

16:30–18:00

Thursday

9 November

Ndumbalo, Jerry¹

¹Ocean Road Cancer Institute

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Background Cancer induced hypercalcemia is the most frequent metabolic oncologic emergency and occurs in 10–30% of all cancer patients at some time in their disease course. It occurs in patients with both solid and hematologic malignancies. CIH occurs mostly in patients with advanced cancer and is an indicator of poor prognosis. Timely diagnosis and intervention is lifesaving and also may enhance patient compliance with primary and supportive treatment. This study aimed to describe the incidence, clinical patterns and treatment outcomes of hypercalcemia in cancer patients receiving Radiation therapy in Charlotte Maxeke Johannesburg Academic Hospital, Johannesburg.

Materials and Methods This was a retrospective descriptive study, 125 patients who were admitted at the Radiation oncology ward CMJAH for hypercalcemia management from January 2010 to December 2015, were analyzed. Demographic data, relevant clinical information such as stage of the disease, type of cancer, level of hypercalcemia, toxicity and Response to the treatment were recorded. Statistical analysis was performed using the (SPSS_version 23). The incidence of hypercalcemia, clinical patterns, treatment and outcomes were evaluated.

Results Of the 125 patients analysed, males to females ratio was 1:1. The most frequent site of primary cancer diagnosis in patients with hypercalcemia were gynaecological malignancies (24.8%), head and neck (18.4%), prostate (15.2%), breast cancer (13.6%), gastrointestinal malignancies (9.6%), multiple myeloma (4%) and lung cancer (2.4%). Most patients had metastatic disease and uncontrolled primary disease (62.4%) compared to primary controlled disease (37.6%). Bone metastasis were present in (41%) of patients. Clinical presentation of patients with hypercalcemia was mainly Neuromuscular (32.8%), nausea/vomiting (29.6%), Polyuria (16%), mental (12.8) and Polydipsia (7.2%). Most of patients had severe hypercalcemia with pre-treatment serum calcium level of > 2.9mmol/l (61.6%). Eighty three percent and 16.8% of patients received hydration + bisphosphonates and hydration alone respectively. After 1 week and 1 month of treatment (73.6 %) and (88.8%) respectively of patients had serum Calcium level <2.7 mmol/l and symptoms relief. Forty four patients (35.2%) had relapse in 33 days (median) time and were subsequently treated with hydration and bisphosphonates. As the patients were enrolled from radiation oncology ward, most were treated with either radiation alone (57.6%) or Concurrent chemo radiation (12.0%) as treatment modalities for their primary cancer. Patients who received chemotherapy alone as their sole treatment for their primary cancer were (29.6%).

Conclusion Cancer induced hypercalcemia still remains as most frequent oncological emergency, treatment with hydration and bisphosphonates is a standard of care to these patients.

POSTER

WELCOME
RECEPTION
AND POSTER
SESSION ONE

16:30–18:00

Tuesday

7 November

Ngendahayo, Edouard

**P190 | PROFILE OF PROSTATE CANCER AT KING FAISAL HOSPITAL,
RWANDA: DEMOGRAPHICS AND GLEASON SCORE**

Kalengayi Mbowa, R.; Ngendahayo, Edouard; Nyirimodoka, A.;
Rudakemwa, E.; Rwamasirabo, E.; Umurangwa, F.

Correspondence ngenedouard@gmail.com

Introduction Prostate cancer is the most common cancer in males. In the era of PSA, most of cases of prostate cancer are diagnosed at early stage and treated with a curative intent in developed countries. In contrast, in low income countries patients tend to present rather with an advanced disease, and diagnostic and therapeutic modalities are a challenge.

Objective The aim of this study is to provide with baseline data on demographics, diagnosis and Gleason score of prostate cancer at King Faisal Hospital, Rwanda.

Methods From 2010 to 2016, all patients diagnosed with prostate cancer were enrolled. All patients who did their PSA test at King Faisal Hospital, Rwanda were identified in the hospital electronic record system. Then those with a confirmed prostate cancer were retained. Logs from histopathology unit were also reviewed, and both lists of patients were merged and de-duplicated. Patients' slides were reviewed by two pathologists and reported according to the contemporary prostate cancer grading system.

Results From August 2010 to September 2016, the total number of 95 patients consulted at King Faisal Hospital with a diagnosis of prostate cancer. The age ranged from 53 to 90 years, with the pick age group of 70-80 years representing 42.1%. The PSA varied widely from 2.4 to 8,158 ng/ml. The majority of patients were in the poorest prognostic grade groups 4 and 5 (52.6%). The most prevalent treatment modality was androgen deprivation therapy in 43.2% of patients. A large proportion of patients were lost of follow up after treatment.

Conclusion Prostate cancer is common at King Faisal Hospital. Most patients present with an advanced disease with a high Gleason score and poor prognostic group. Raising awareness of the disease may lead to early presentation of patients. Initiation of a cancer registry is highly needed for quality data on cancer and a proper follow up of patients.

POSTER

Ngendahayo, Edouard

P191 | PATTERN AND MANAGEMENT OF PENILE CANCER IN RWANDA

Ngendahayo, Edouard

**WELCOME
RECEPTION
AND POSTER
SESSION ONE**

16:30–18:00

Tuesday

7 November

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Background Penile cancer is believed to be rare in developed countries with higher prevalence in some developing countries. Surgery including inguinal lymphadenectomy remains the mainstay treatment of the disease. This study reports on the profile of penile cancer and management options in Rwanda.

Methodology From January 2015 to June 2016, a multicenter cross sectional and prospective cohort study was conducted involving all male patients presenting with penile cancer after two nation-wide radio campaigns and Ministry of Health instruction to all district hospitals. All patients with positive biopsy were included. Clinical characteristics and perioperative data were collected. The management referred to pre-designed guidelines.

Results Over 18 consecutive months, 30 male patients were enrolled. The mean age was 60[33–83] years. All patients were uncircumcised until puberty, 50% had phimosis and 20% were HIV positive. Preliminary prevalence estimation was 0.37 for 100,000 men in Rwanda. At presentation, 93.4% of patients had a T2-3 disease and 43.3% were cN0. After penectomy, bilateral inguinal lymphadenectomy was performed in 10 (33.3%) patients (modified and radical respectively in 16 and 4 limbs). Complications included surgical site infection (10%), lymphocele (10%), urethral meatus stenosis (6.7%), skin necrosis (3.3%) and two (6.7%) in-hospital deaths for patients with metastatic disease.

Conclusion Penile cancer is not uncommon in Rwanda. Patients present with advanced disease. Modified inguinal lymphadenectomy is a safe way of staging for clinically impalpable lymph nodes. Our early results are satisfactory.

POSTER

POSTER SESSION TWO

16:30–18:00
Thursday
9 November

Niane, Khadidiatou

P259 | PENETRANCE DES MUTATIONS DE LA D-LOOP ET DU CYTOCHROME B DANS L'OCCURRENCE DES CARCINOMES OVARIENS CHEZ LES FEMMES SENEGALAISES

Niane, Khadidiatou¹

¹Institut Pasteur de Dakar/UCAD

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Introduction au Sénégal, les pathologies cancéreuses sont aujourd'hui au sommet des causes de décès. Le cancer de l'ovaire est responsable de 5,8% des décès par cancer et est au 5ème rang des causes de mortalité par tumeur maligne. Les plus forts facteurs de risque actuellement impliqués dans l'éthologie de ce cancer sont ceux d'ordre génétique, avec des mutations spécifiques.

Objectif Le but de cette étude est d'analyser l'incidence des mutations de la boucle de déplacement (D-loop) et du cytochrome b (Cyt b) dans l'occurrence du cancer de l'ovaire au Sénégal.

Méthodologie Nous avons étudié la variabilité des deux gènes (D-Loop et Cyt b) par PCR-Séquençage chez trente patientes sénégalaises, atteintes d'un cancer de l'ovaire. Pour chaque patiente nous avons travaillé avec l'ovaire sain et l'ovaire cancéreux. La recherche de mutations, l'évaluation du degré de variabilité des gènes mitochondriaux et de la différenciation génétique a été effectuées avec la base de données MITOMAP et les logiciels BioEdit version 7.2.0, MEGA 6 version 6.05, DnaSP version 5.10.01 et Arlequin Version 3.1.

Résultats Il est à noter dans cette étude que, la D-Loop est plus variable que le Cyt b avec 81 nouvelles variations dont 41.28% présentant des différences significatives ($P < 0,05$) pour la D-Loop contre 19 nouvelles variations pour le Cyt b dont 19.23% présentent des différences significatives. Nos résultats ont également montré une augmentation significative du tryptophane dans les tissus cancéreux, une légère hausse des taux d'alanine et d'arginine mais aussi que le Cyt b était sous sélection positive.

Conclusion Toute augmentation du taux de Tryptophane, d'arginine et d'alanine dans les tissus cancéreux pourrait être corrélée à une augmentation du risque d'apparition du cancer de l'ovaire d'un côté et de l'autre l'arginine et l'alanine pourraient jouer un rôle important dans le traitement du cancer de l'ovaire.

PRESENTATION

Nichols, Scott

SUPPORT FOR FAMILIES OF CANCER SUFFERERS

Nichols, Scott¹

¹Enloe Medical Center

**CARE FOR
FAMILIES
OF CANCER
SUFFERERS**

07:15–08:20

Thursday

9 November

Correspondence snichols.md@gmail.com

The goal of this round table discussion is to provide an opportunity to discuss, explore, observe, practice, and adapt therapeutic interventions from disciplines of psychotherapy to the specific context of families of cancer patients in Africa.

We will start with the use of circular and other types of questioning which are likely familiar to people trained in marriage and family therapy. These questioning/interviewing techniques have been adapted to discussions with families of cancer patients and in clinical practice, have increased understanding, reduced perceived isolation, increased mutual support within family relationships, and resulted in harmful beliefs and actions being replaced by more helpful beliefs and actions.

The specific goal of this discussion is for participants leave the conference with an understanding of when these techniques are appropriate and with the ability to use these techniques with their patients.

This discussion is open to all participants, without regard to previous level of training in family therapy or other types of psychotherapy.

POSTER

POSTER SESSION TWO

16:30–18:00
Thursday
9 November

Ninsiima, Jailet

P282 | ASSESSMENT OF KNOWLEDGE, ATTITUDE AND PRACTICES OF NURSES HANDLING CYTOTOXIC ANTICANCER DRUGS AT UGANDA CANCER INSTITUTE

Ninsiima, Jailet¹; Osinde, Godfrey¹; Mulumba, Yusuf¹; Afayo, Robert²; Mutyaba, Innocent^{1,3}; Namala, Allen¹
¹Uganda Cancer Institute; ²International Health Sciences University; ³Makerere University

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Introduction Cytotoxic anticancer drugs (CADs) are carcinogenic, mutagenic and teratogenic on additional of other side effects to human thus occupational exposures to them is a potential risk. Healthcare workers especially nurses who prepare and administer CADs may experience cytotoxic effects through skin contact, respiratory and oral exposure.

General objective The purpose of this study was to assess the knowledge, attitude and practices of nurses handling anticancer drugs at Uganda Cancer Institute.

Methods This was an analytical cross sectional study. This study design allowed collection of data on knowledge, attitudes and practices simultaneously at a point in time. A study group of 75 nurses working at Uganda Cancer Institute were assessed. Two tools were used in the study: a self administered questionnaire and a performance checklist to assess the practice of the nurses.

Results The majority of the participants 61 (81.3%) were females of reproductive age (median age 31yrs) with the diploma as the main nursing qualification with a nursing experience and chemotherapy handling experience of less than 10 years. Almost half 37 (49.3%) reported not confident to use PPE (Personal Protective Equipment) properly, 40 (53.3%) reported that PPE makes them feel hot and uncomfortable. In regard to perceived barriers items with highest ratings were related to unavailability of PPE (60%), lack of policy that require use of PPE (58.7%), poor quality of PPE (84%), lack of supervision (85.3%) and co-workers observed not using PPE (77.3%). Poor practices were reported as almost all participants (99%) used non-chemotherapy gloves, 65.3% used provided uniforms as chemo gowns and 84% used surgical masks. In regard to exposure, 80% of the nurses reported having had direct contact to CADs and 64% reported having experienced side effects after exposure. The most prominent reported side effects were hypersensitivity 27.2%, skin rash 20.4% and mouth ulcers 10.7%.

Conclusion Generally the participants had moderate levels of knowledge and a moderate positive attitude. Despite these moderate levels of knowledge and positive attitude they reported poor practices due to lack of training, unavailability of safety precautions and PPE.

Major recommendation Provision of proper PPE, implementation of safety guidelines and systemic training programs could demonstrate the institutional supports and reduce the concerns of nurses when handling CADs.

POSTER

Niyonzima, Jean Pierre

P283 | CERVICAL CANCER PREVENTION KNOWLEDGE AND ATTITUDES: SURVEY OF MIDWIVES AND NURSES IN RWANDA

**POSTER
SESSION
TWO**

**16:30–18:00
Thursday
9 November**

Niyonzima, Jean Pierre^{1,2}; Ghebre, Rahel^{1,4}; Ntasumbumuyange, Diomed^{1,2}; Rulisa, Stephen¹; Bazzett-Matabele, Lisa^{1,3}

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Introduction The plan for cervical cancer control in Rwanda includes expansion of cervical cancer screening via Visual Inspection with Acetic Acid (VIA) into all health clinics and District Hospitals (DH). The initial step of cervical cancer screening is conducted by nurses and midwives within the context of routine health care visits, and positive cases are referred to colposcopy clinic. The aim of this study is to evaluate knowledge, attitudes and practices of midwives and nurses regarding cervical cancer prevention.

Methods A descriptive cross sectional study was conducted among midwives and nurses working in three DH and one tertiary hospital in Kigali, Rwanda. From October 2016 to December 2016, a self-administered questionnaire was distributed to nurses and midwives in the department of obstetrics and gynecology at each hospital. A total of 587 midwives and nurses were invited to participate, 527 (89.7%) agreed and consented for this study. Data was analyzed using SPSS.

Results Human Papillomavirus (HPV) as a cause of cervical cancer was correctly identified by 76.5% (n=404) of participants, HIV as a risk factor for cervical cancer by 56.9% (n=300) and HPV vaccine as protections against cervical cancer by 86.7% (n=457). Some nurses misidentified IUD (39.1%), poor personal hygiene (35.5%) and use of herbal remedies (19.5%) as risk factors for cervical cancer. Most nurses reported that cervical cancer screening is an essential part of women's health care 92.4% (n= 487) and 89.2% (n= 470) would recommend the cervical cancer vaccine. Nurses reported lack of time (33.8%), or that patients have other more pressing medical concerns (51.2%) as reasons for not counselling patients about cervical cancer prevention. Only 32.9% (n=153) of the respondents had undergone cervical cancer screening themselves. However, there was no statistical difference in knowledge of cervical cancer and attitude toward prevention among nurses who had or had not undergone cervical cancer screening themselves.

Conclusion Nurses and midwives surveyed in this study showed a high level of knowledge around cervical cancer screening and vaccination. Translating this knowledge into practice may be challenging as a minority of nurses (33.8%) are themselves undergoing screening. Further studies will need to explore barriers to undergoing cervical cancer screening within the setting of routine health care in Rwanda.

POSTER

WELCOME RECEPTION AND POSTER SESSION ONE

16:30–18:00

Tuesday
7 November

Njoroge, Richard Ndung'u

**P428 | AN ASSESSMENT OF PATHOLOGY SERVICES FOR CANCER
DIAGNOSIS IN THE PUBLIC HEALTH SECTOR IN KENYA, 2017**

Njoroge, Richard Ndung'u¹; Karagu, Alfred^{1,2}; Brand, Nathan^{3,4}

¹Ministry of Health, Kenya; ²National Cancer Institute of Kenya; ³Leidos Biomedical Inc.; ⁴Columbia University

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Background Cancer is the third leading cause of mortality in Kenya. Whereas pathology services are fundamental to effective cancer diagnosis and treatment, currently the capacity of the country's pathology laboratories remains unknown. A national survey was conducted among selected public sector pathology laboratories at county and national referral hospitals to assess their capacity to accurately diagnose cancer.

Objectives The survey set out to assess the diagnostic capacity, current usage, turn around time, and referral patterns of selected public pathology laboratories in order to assess effectiveness in cancer diagnosis

Methods Between April and June 2017, we identified all public sector hospitals that provide pathology services in Kenya. In total, 2 national and 13 county referral hospitals met inclusion criteria and were sent a standardized, pre-tested, self-administered questionnaire.

Results A total of 11 (73%) hospitals completed the survey. The national caseload of histology, bone marrow aspirate and fine needle aspirate interpretations per year was 26,472. All the facilities staffed a pathologist and were providing cancer related diagnostic services. 9 (82%) of the hospitals maintain a register of diagnosed cancer cases but only 1 (11%) use an electronic system. 6 (55%) of the surveyed hospitals were able to perform histology with a median turn-around time of 14 days. 6 (55%) laboratories referred specimens elsewhere for interpretation on a monthly basis with 5 (83%) reporting that patients were responsible for the transportation the specimens to the other referral institution. None of the laboratories surveyed were accredited by an external organization, however, 10 (91%) of the laboratories were working towards ongoing accreditation.

Conclusions The study illustrates the current status of the pathology capacity in Kenya's public sector in respect to cancer diagnosis, and provides useful baseline information needed for the Ministry of Health to develop necessary capacity building and referral strengthening interventions. The high participation in ongoing accreditation illustrates commitment to providing quality cancer diagnosis to the Kenyan public.

PRESENTATION

PALLIATIVE CARE & OTHER ABSTRACTS

14:40–16:30

Wednesday

8 November

Ntege, Christopher

THE SHELF LIFE STUDY OF THE RECONSTITUTED ORAL LIQUID MORPHINE SOLUTION IN UGANDA FOR PALLIATIVE CARE PATIENTS: STRENGTHENING THE SUPPLY CHAIN AND INCREASING ACCESS

Ntege, Christopher¹; Zirimenya, Ludoviko¹; Akowa, Charles¹; Opio, Samuel²; Kamili, John²

¹Hospice Africa Uganda; ²JSA Pharmaceutical Consult

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Hospice Africa Uganda (HAU) started reconstituting small amounts of oral liquid morphine solution extemporaneously for patients that visited the site. This preparation was assigned a shelf life of 14 days. In 2010, HAU was awarded a contract to reconstitute the oral liquid supply the product to all accredited health institutions in Uganda. Upgrades at HAU (use of amber coloured bottles, use of a preservative and institution of GMP (good manufacturing practices) necessitated the assignment (with no scientific data) of a new shelf life from 14 days to 6 months which seemed adequate at that time. With time, distribution of the products through the National Medical Stores (NMS) resulted in lots of wastage through expiries due to the limited shelf-life and strain on the distribution chain. Medicine regulation guidelines required the conduction of stability studies in order to have an extension of shelf-life.

In November 2015, with funding from the American Cancer Society, a stability study on the 1mg/ml 500ml Liquid oral morphine solution was conducted. The purpose of the study was to ascertain the stability of the product and thereby increase the shelf-life from 6 to 12 months and ease on the supply chain strain. The study was done at Kampala Pharmaceutical Industries Limited with JSA Pharmaceutical consults acting as the principal investigators. Parameters relating to the stability of the product were assessed, and these included, assay for morphine sulphate, specific gravity, pH and microbial limits. The study design was based on the stability requirements of the ICH (International Committee on Harmonisation) guidelines for stability testing specific for the region.

Results from the study showed that the oral liquid morphine solution was stable in both the accelerated and real-time stages of the study up to 12 months for all the 4 parameters that were assessed, and as such a shelf-life of 12–24 months was warranted for the product.

The increase in the shelf-life of the oral morphine solution will go a long way to improving access of this essential medicine through the country while also minimizing on the wastage that have for many years been experienced.

POSTER

WELCOME RECEPTION AND POSTER SESSION ONE

16:30–18:00

Tuesday

7 November

Ntekim, Atara

P192 | SURVIVAL IN PATIENTS WITH PROSTATE CANCER IN NIGERIA: AN INSTITUTIONAL REPORT

Bamgboye, Eniola¹; Folasire, Ayorinde¹; Ntekim, Atara¹; Ogunbiyi, Olufemi¹; Shittu, Olayiwola¹
¹University of Ibadan

Correspondence kimata2000@hotmail.com

Background Prostate cancer (PCa) is the most common male malignancy in Nigeria with high mortality. Although the incidence is lower compared with Western countries, the mortality is greater. This is due to the pattern of presentation and ethnic differences in tumour characteristics of the disease with poor prognostic features associated with the disease among indigenous black Africans. Regular screening programs for PCa are nonexistent, and access to optimal therapy is poor due to unaffordability. There is a need for a report on the stage of presentation, type of interventions given and survival rates of these patients. These will guide our oncologists on the pattern of presentation and effectiveness of current management methods and indicate where improvements are needed.

Objectives The objectives of the study were to determine the pattern of disease presentation, describe the overall survival rates in patients with PCa in Nigeria and to compare the histopathological features at diagnosis with survival rates.

Methods A retrospective study was carried out using data extracted from case records of all prostate cancer patients seen at the University College Hospital Ibadan, Nigeria between 2006 and 2010 (5 year period) with follow-up data up to 2016. Ethical approval was obtained from the Institutional Ethics Committee. Data of interest included socio-demographic data, tumour characteristics, clinical features, treatment received, and survival. Descriptive statistics was used to present sociodemographic and clinical data while Kaplan Meier estimates were used to determine survival.

Results A total of 245 patients with PCa were seen during the period with age ranging between 45–90 years, and peak age between 71–80 years 97 (39.6%). All the patients had adenocarcinoma with risk score using D'Amico risk classifications of PCa as follows: Low Risk 78 (31.8%), Intermediate Risk 39 (15.9%), High Risk 75 (30.6%), while 53 (21.6%) had no information on risk classification. Twelve (5%) patients had prostatectomy as primary treatment. 148 (60%) received hormonal therapy (orchiectomy and or hormonal drugs) while 85 (35%) had hormonal treatment with palliative radiation therapy as their primary therapy (both groups indicating palliative care as a result of late presentation). The overall survival at five years was 95%, and at ten years was 20% using Kaplan-Meier estimates.

Conclusion The peak age for prostate cancer in this population is between 71–80 years. Most patients only received palliative therapy. Long-term survival was noted to be low indicating that there is high mortality associated with PCa in the study population.

POSTER

Nwachukwu, Chika

P299 | A PILOT STUDY TO EVALUATE A NEWLY-DEVELOPED NEEDS ASSESSMENT TOOL FOR IMPROVING GENERAL ONCOLOGY MANAGEMENT IN NIGERIA

**POSTER
SESSION
TWO**

**16:30–18:00
Thursday
9 November**

Nwachukwu, Chika¹; Qamoos, Hope¹; Sheth, Shruti¹; Million, Lynn¹; Bhatt, Ami¹
¹Stanford University

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Purpose/Objectives Cancer mortality in low- and middle-income countries is rising rapidly, especially in countries where screening programs are scarce and resources are limited. Fragmented infrastructure, as well as limited human resources hinder access to appropriate cancer care in these regions. However, it is not known which are the greatest barriers to care. The purpose of this study is to develop a tool that assesses the gaps in cancer care, with emphasis on barriers to accessing treatment.

Methods Stanford University has developed a detailed needs assessment tool, in collaboration with the American Cancer Society (ACS) and Clinton Health Access Initiative (CHAI). A cross sectional study at two teaching hospitals in Nigeria, using the newly developed cancer assessment instrument, semi-structured interviews and onsite visits was conducted to assess gaps in cancer care including radiotherapy infrastructure. In collaboration with key hospital personnel, the results of this study will be used to finalize the assessment tool to ensure the local cancer care needs are adequately addressed.

Results The two hospitals sites, Ahmadu Bello University Teaching Hospital (ABUTH) and Lagos University Teaching Hospital (LUTH), were identified by the Nigerian ministry of health as two sites to be developed into comprehensive cancer centers. Both centers currently have chemotherapy delivery capacity, radiotherapy capacity and are staffed by radiation oncologists, medical oncologists, and a small set of non-specialist clinical staff. Stanford experts were paired with collaborators at ABUTH and LUTH. The needs assessment tool had two main components, a cancer assessment section and a human capacity section. The cancer assessment section has 6 broad areas ranging from summary and health status of the population to cancer specific needs. The different specialist from LUTH and ABUTH completed the tool along the Stand and CHAI team. There were 100 cancer specific needs questions, 20 of which focus directly on radiotherapy. The radiotherapy issues addressed include the demographics of patients receiving treatment (palliative or curative intent), referral patterns for patients, and barriers to care, such as cost of treatment. Finally, the human resource section has 20 broad questions, ranging from continuing education to the availability of staff, their respective roles, as well as their work flow.

Conclusions The needs assessment identified key findings across five thematic areas including systems; human resources, infrastructures, technology and patient engagement. The results of the needs assessment identified short term, medium and long term actionable ways to improve cancer care in Nigeria.

POSTER

Nwogu, Chukwumere

P233 | LOW UPTAKE OF BREAST CANCER SCREENING IN LAGOS, NIGERIA

**POSTER
SESSION
TWO**

16:30–18:00

Thursday

9 November

Nwogu, Chukwumere^{1,2}; Sanni, Joseph¹; Masika, Martin²; Akinyemiju, Yinka¹; Chugani, Bindiya¹; Ilegbune, Oge¹

¹Lakeshore Cancer Center; ²Roswell Park Cancer Institute

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Background Breast cancer is the most common cancer in women worldwide, with nearly 1.7 million new cases diagnosed in 2012. Breast cancer survival rates vary greatly worldwide, ranging from over 80% in North America to around 60% in middle-income countries and below 40% in low-income countries. The low survival rates in less developed countries can be explained mainly by the lack of early detection programs, resulting in a high proportion of women presenting with late-stage disease, as well as by the lack of adequate diagnosis and treatment facilities. Prior to a formal study to determine the precise reasons for decisions on breast cancer screening and the effectiveness of a tailored educational intervention, we undertook a survey of women who attended community cancer outreach programs to assess their uptake of mammography.

Methods Over a period of 19 months, eleven community cancer outreach programs were organized. These took place in a variety of settings including churches, community centers, banks, clubs and corporate work places. The presentations included explanations about the definition of cancer, its causes, prevention, early detection and treatment. The attendees voluntarily provided their date of birth, marital status, residential address, and mobile telephone number for follow-up calls.

Results A total of 700 individuals, ranging in age from 15 to 78 years, attended the outreach programs and 90 (13%) were male. Of the 143 women eligible for screening mammography, 38 (27%) could not be contacted and 22 (15%) had the recommended mammogram. The commonest causes for not getting the mammogram were lack of funds, remote residence from the mammogram location, fear of diagnosis and indifference to the disease.

Conclusion Despite general community cancer education, only 15% of women in this informal community outreach program complied with recommended mammograms. A more detailed study of the reasons for this low uptake of breast cancer screening is planned. Pilot testing of an intervention tailored specifically to the common reasons for non-compliance will be very helpful.

POSTER

POSTER SESSION TWO

16:30–18:00
Thursday
9 November

Nwogu, Chukwumere

P300 | LOGISTICAL CHALLENGES WITH INTERNATIONAL REMOTE ONCOLOGY CONSULTATIONS

Nwogu, Chukwumere^{1,2}; Uwabor, Emmanuel¹; Ajoku, Ugonna¹; Gaudioso, Carmelo²; Adewale, A.¹; O'Connor, Tracey²
¹Lakeshore Cancer Center; ²Roswell Park Cancer Institute

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Background Modern oncology care is markedly multidisciplinary. With the growing complexity of the field, there is ever-increasing sub-specialization. Thus, it is common for single institutions, or even an entire low to middle income country, to lack the expertise to handle peculiar oncology problems. Therefore, international oncology consultations are becoming important to offering optimum care to patients. We undertook a retrospective review of such international oncology consultations from a single Center in Lagos, Nigeria.

Methods This was a retrospective chart review of patients requiring consultations over a period of 24 months. The patients we identified from hospital administrative records, as well as the e-mail records of several in-house physicians. Subsequently, the paper charts of the patients were reviewed to obtain information about the consultations.

Results During the study period, 27 consultations were obtained from United States-based oncologists. 21 consultations (78%) were from Roswell Park cancer Institute oncologists and 6 consultations (22%) were from oncologists in other US institutions. 26 consultations (96%) were done via e-mail exchanges while one was done via Skype. The reason for consultation was uncertainty about management in 10 patients (37%), the need for validation of treatment plans in 14 patients (52%) and unusual clinical scenarios in 3 patients (11%). Encountered challenges included missing records of consultant recommendations in 5 patients (18.5%); unavailable diagnostic testing in 7 patients (26%) and unavailable therapies in 3 patients (11%).

Conclusion Despite the potential benefit from international oncology consultations, several logistical challenges impaired the benefits to patients. The challenges related to inadequate information and poor record-keeping could be overcome by using electronic health record systems and virtual tumor board applications.

POSTER

Nwogu, Chukwumere

P301 | AN INTERNATIONAL VIRTUAL MULTIDISCIPLINARY TUMOUR BOARD TO IMPROVE QUALITY OF CANCER CARE – A PILOT STUDY

**POSTER
SESSION
TWO**

16:30–18:00

Thursday

9 November

Nwogu, Chukwumere^{1,2}; Masika, Martin²; Saunders, Aaron²; Nwogu, Ifeoma³; Jimoh, Mutiu¹; Gaudioso, Carmelo²

¹Lakeshore Cancer Center; ²Roswell Park Cancer Institute; ³Rochester Institute of Technology

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Objectives The primary purpose of this study is to test the feasibility of the implementation of a mobile health (mHealth) technology – a phone application (app) designed to support asynchronous virtual multidisciplinary conferences with the goal of improving the quality of oncology diagnostic and treatment plans provided in Low to Middle Income Countries (LMICs). We hypothesize that virtual multidisciplinary cancer conferences (MCCs), involving clinical providers in LMICs and subject matter clinical experts in High Income Countries (HICs), using an mHealth platform to facilitate reliable communications and shared decision making among all participants of the MCC, will improve cancer care planning and result in patient treatment choices that are consistent with resource-stratified, evidence-based guidelines.

Methods This pilot study will include quantitative and qualitative analyses. Physicians from Roswell Park Cancer Institute (RPCI) in Buffalo, New York; Lagos University Teaching Hospital (LUTH), Lagos State University Teaching Hospital (LASUTH) and Lakeshore Cancer Center (LCC) in Lagos, Nigeria will be the study subjects. Twenty de-identified patients diagnosed with cervical, prostate, and breast cancer being treated at these institutions during the study period will be the subject of consultations by RPCI tumor boards. A mobile health technology – Mobile Application for Multidisciplinary Oncology Knowledge Sharing (MAMOKS) will be used to provide secure, scalable, robust, searchable, education-focused, synchronous and asynchronous decision support and joint decision-making for providers involved in the management of these oncology cases.

Results We anticipate that the MCC will include medical, radiation and surgical oncologists, radiologists, pathologists, nurses, and several allied health professionals. Topics of discussion include diagnosis, staging, and treatment options. The final treatment recommendations are often based on consensus but sometimes dissenting opinions exist. A successful case will be defined as one in which all designated respondents have provided input to the discussion and a consensus recommendation has been provided within a 72-hour period. We will subsequently measure quality of cancer care in terms of compliance with established resource-stratified treatment guidelines.

Conclusion We anticipate that this virtual tumor board discussion will be successful in over 60% of cases. That will give us an indication of technical feasibility and permit us to study its impact on quality of care.

POSTER

WELCOME RECEPTION AND POSTER SESSION ONE

16:30–18:00

Tuesday
7 November

Odedina, Folakemi

P193 | GLOBAL BEHAVIOURAL, CLINICAL, AND EPIDEMIOLOGICAL MEASURES FOR PROSTATE CANCER RESEARCH IN BLACK MEN: THE CAPTC-AC3-MADCAP GLOBAL ALLIANCE FOR BLACK MEN'S HEALTH

Odedina, Folakemi¹; Ragin, Camille²; Rebbeck, Timothy³; Moser, Richard⁴; Martin, Damali⁴; CaPTC-AC3-MADCaP-CWG, CAM^{1,2,3}

¹Prostate Cancer Transatlantic Consortium; ²African-Caribbean Cancer Consortium; ³Men of African Descent and Carcinoma of the Prostate;

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Background The complexity of prostate cancer (CaP) disparity and the need for a unique approach to better understand and address this complex disease underscores the need for team science research that is multilevel, collaborative, translational, and global. Additional challenges are the inconsistency of measures and methodology employed for CaP research in Black men (BM) and the need to harmonize and pool existing data to facilitate global data sharing for multiethnic studies of BM. Three cancer consortia supported by the US National Cancer Institute (NCI) Epidemiology & Genomics Research Group (EGRP) – the Prostate Cancer Transatlantic Consortium (CaPTC), African-Caribbean Cancer Consortium (AC3) and Men of African Descent and Carcinoma of the Prostate (MADCaP) – formed an alliance to address these issues.

Objective Our primary objective was to develop culturally tailored, reliable, valid and standardized data elements and tools for CaP research in BM globally.

Methodology Study objective was achieved by a Consensus Working Group (CWG) that drove consensus using: (1) the NCI-Grid-Enable Measures (GEM) platform, (2) nominal group technique (NGT) and (3) a consensus development meeting. Employing participatory research with full engagement of all the CWG members, the following steps were achieved:

1. Web conferencing to finalize the methodology for the consensus development and educate CWG members on GEM and the NGT process. In addition, CWG were assigned to 3 Special Interest Groups (SIGs): (i) behavioral; (ii) epidemiology and genetics; and (iii) clinical SIGs.
2. Using the discussion boards within the GEM workspace and Go ToMeeting platform, CWG members worked within their SIGs to rate and provide critical feedback that drove consensus.
3. The SIGs met face-to-face on Nov 8, 2016 during the Science of Global Prostate Cancer Disparities (SGCaPD) conference in the US. A ranking sheet based on a scale ranging from 1 (inappropriate) to 9 (appropriate) was used to finalize consensus decisions.
4. The NGT was followed by a presentation to the scientific community for public input during the SGCaPD conference in November.

Results and Impact: The Global Behavioral, Clinical, and Epidemiological Measures are publicly available on the NCI-GEM website. The measures are currently being used as standard data collection tools in over 10 countries and will be made available at the AORTIC conference. The long-term impact of this project is catalyzed progress for CaP disparity research through the availability of common measures and common methods, which will foster team and transdisciplinary research within the CaP research community.

PRESENTATION

Odedina, Folakemi

THE NIGERIA GLOBAL PROSTATE CANCER FAMILIAL PROJECT: A PROSTATE CANCER TRANSATLANTIC CONSORTIUM (CaPTC) PROGRAM

SITE SPECIFIC

**CANCERS
& OTHER
ABSTRACTS**

13:30–14:30

Friday

10 November

Odedina, Folakemi¹; Chinegwundoh, Frank²; Popoola, Ademola^{3,5}; Iweala, Emeka^{4,5}; CaPTC-Investigators, CaPTC⁵; Kaninjing, Ernest¹
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⁴Covenant University; ⁵Nigeria CaPTC Regions

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Background Prostate Cancer (CaP) continues to be the most significant cancer that has disproportionately overburdened men of African ancestry, especially Black men (BM). Although, all BM are at risk for CaP, there are within-group differences when African-born BM are compared to American-born and Caribbean-born BM. Since 2005, the Prostate Cancer Transatlantic Consortium (CaPTC) has documented differences in CaP-related behavioral factors, health-seeking behaviors and experiences among these three groups. Unfortunately, there continues to be paucity of data on the etiology of CaP among African-born BM. The CaPTC implemented a familial prostate cancer study of Nigerian men globally to address this problem.

Objective The long-term goal of CaPTC's research program is to eliminate the CaP disparity experienced by BM globally. In line with this goal, this project focused on understanding the genetic, environmental and behavioral etiology of CaP in Nigerian men. The primary research objective was to create a cohort of Nigerian Black men in Nigeria, United States, England, to be followed prospectively and longitudinally to better understand the bio-behavioral etiology of CaP among Nigerian men.

Methodology A cross-sectional study design was employed to recruit participants in Nigeria, US and UK. Data was collected from participants who met the selection criteria: (i) all Nigerian men regardless of history of CaP diagnosis between the age of 35 and 70; (ii) men willing to provide objective anthropometric measures; (iii) men who consent to completing the study survey and authorize the collection of their saliva; and (iv) men willing to provide consent to access their medical records for clinical annotations. The methodology steps were to:

1. Recruit a minimum of 2,000 indigenous Nigerian men and Nigerian men in the Diaspora at clinics and in the community, including the male relatives of participants.
2. Assess baseline behavioral, clinical, epidemiological, and environmental variables using standardized measures.
3. Assess baseline biological/biochemical variables from saliva samples.
4. Access and link past and future clinical data of participants to the cohort database.

Multiple data analyses will be employed to determine the biological, behavioral, clinical, epidemiological, and environmental variables implicated in CaP in Nigerian men globally.

Results Collaborating sites for this project include 14 institutions in Nigeria, 5 institutions in the US and 1 institution in UK. The oral abstract will focus on discussing the rigorous methodology, lessons learnt in establishing collaboration among the institutions, preliminary results, and possible adaptation of project by other African countries.

POSTER

Odetunde, Abayomi

P254 | BUILDING A SUSTAINABLE RESEARCH INFRASTRUCTURE IN WEST AFRICA THROUGH PUBLIC PRIVATE PARTNERSHIPS

**POSTER
SESSION
TWO**

16:30–18:00

Thursday

9 November

Odetunde, Abayomi¹; Okedere, Babajide¹; Akinyele, Odunayo¹; Sanni, Ayodele²; Ademola, Adeyinka¹; Oluwasola, Olayiwola¹
¹University of Ibadan; ²Lagos State University Teaching Hospital

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Objective We established a Four-Way agreement between the University of Chicago (UChicago), Novartis Institutes for Biomedical Research (NIBR), University College Hospital of the University of Ibadan (UCH/UI) and Lagos State University Teaching Hospital (LASUTH) to enhance research capacity of staff and investigators in West Africa to conduct breast cancer research in 2011. Our goal was to transfer technology for genomic analysis from laboratories in the US to Nigeria to facilitate identification of genomic alterations that are potential drug targets.

Methods Associates from both the UChicago Olopade laboratory and NIBR visited each Nigerian site to assess their research capacity and to analyze the institutional structure. Based on the knowledge obtained, strategic investments were made on key infrastructures to upgrade the facility and equip the laboratories with modern research equipment. Recommendations were made to restructure the research team for improved efficiency. Skilled specialists were also invited from the United States (US) to host workshops in Nigeria on modern pathology techniques. Project managers, pathologists, and lab technicians were invited for a two-month long research boot camp at NIBR to teach all the skills relevant to Exome and Transcriptome sequencing, including: sample collection in PAX Gene preservation technology; preparation and sectioning of tumor blocks; nucleic acid extraction from blood and tissue specimens; quality control tests of isolated analytes; histopathological techniques for Immunohistochemistry; basic modern biochemical assays such as PCR; library preparation and Next-Generation Sequencing (NGS); and bioinformatics analysis of NGS data.

Results After initial hiccup of industrial action that slow down enrollment, We successfully recruited 295 patients to meet and surpass our initial target of 250 patients. Quality DNA and RNA samples from patient tissue and blood were collected and prepared at each site in Nigeria, and transferred to NIBR and UChicago for sequencing. Some notable findings include somatic alteration patterns in certain genes and genomic regions that seem to be more prevalent in Nigerians and to a lesser degree, in African Americans. Such new insights indicate potential druggable targets effective for women of African ancestry.

Conclusion Proper sample preparation and extraction of high quality DNA and RNA are paramount to successful genomic studies. Research scientists in Lagos and Ibadan sites are well equipped to perform genomic studies. With provision of adequate resources, teams of African researchers stand ready to participate in International studies to accelerate progress in cancer research and bring more effective therapies to cancer patients in Sub-Saharan Africa.

PRESENTATION

CERVIX AND GYNAECOLOGICAL CANCERS

14:40–16:30

Wednesday

8 November

Odida, Michael

THE BURDEN OF GYNAECOLOGICAL MALIGNANCIES IN AFRICA

Odida, Michael¹

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Background A number of hospital based studies in some African countries have shown a high prevalence of some gynaecological malignancies, especially cervical carcinoma. However, the burden of gynaecological malignancies in Africa remains scanty.

Aims The aim of the study was to give an overview of the burden of gynaecological malignancies in Africa.

Methods The study was based on review of data from cancer registries in Africa from 2003 to 2007.

Results Data were available from seven cancer registries in seven countries, namely South Africa, Malawi, Uganda, Libya, Algeria, Egypt and Tunisia. The burden of gynaecological malignancies varied from 11.1% in Algeria to 38.5% in South Africa, with higher rate being common in sub-Saharan region and lower rate in northern Africa. A high burden of cervical carcinoma was observed in sub-Saharan areas, while in northern Africa carcinomas of ovary and uterus were relatively high.

Conclusion The exact burden of gynaecological malignancies is not clear, but appears to vary within Africa, with high rates of cervical carcinomas in sub-Saharan areas and relatively higher burden of uterine and ovarian carcinomas in the far north. More studies are needed to get a clear picture.

POSTER

POSTER SESSION TWO

16:30–18:00
Thursday
9 November

Odunyemi, Funmilola

P284 | EFFECT OF NURSING INTERVENTION ON MOTHERS' KNOWLEDGE OF CERVICAL CANCER AND ACCEPTANCE OF HUMAN PAPILLOMAVIRUS VACCINATION FOR THEIR ADOLESCENT DAUGHTERS IN ABUJA, NIGERIA

Odunyemi, Funmilola¹; Ndikom, Chizoma¹; Oluwatosin, Abimbola¹
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Background Cervical cancer remains a global threat to women's health. It is the commonest killer cancer, causing a major havoc among women. HPV vaccination at an early age has been found to be effective in preventing cervical intraepithelial neoplasia. However, the rate of utilization of this cardinal preventive measure remains low among Nigerians, possibly due to sociocultural factors among others.

Objective This study evaluates the effect of nursing intervention on mothers' knowledge of cervical cancer and acceptance of HPV vaccination for their adolescent daughters in Abuja.

Methodology This was a quasi-experimental study that utilized two group pre- post-test design. The study was carried out among civil servant mothers in Bwari (Experimental Group) and Kwali (Control Group) Area Council of Federal Capital Territory, Nigeria. A total of one hundred and forty four (146) women were purposely selected for this study. EG consist of 69 women while 77 were from CG. The intervention consisted of two day workshop on cervical cancer and HPV vaccination. Descriptive and inferential analysis of the data was done using SPSS 20 version.

Result The mean age of the respondents was 35years +6.6 in the experimental group and 41years \pm 8.2 in the control group. The mean knowledge score of cervical cancer was low at baseline in both interventions (9.58 ± 7.1) and control groups (11.61 ± 6.5). However, there was a significant rise to $21.45 + 6.2$ after the intervention in experimental group ($P < 0.0001$). The baseline acceptance of HPV vaccination was high in the EG after intervention from 74% to 99%. Association between Exposure to Nursing intervention and acceptance of HPV vaccination was statistically significant ($P < 0.0001$). Utilization of HPV vaccination was low in both groups at baseline (1.4% and 5.4%) respectively.

Conclusion Mothers' knowledge of cervical cancer and acceptance of HPV vaccination significantly increased after nursing intervention. It is therefore recommended that nurses should use every available opportunity in mothers' clinic to educate them on cervical cancer and HPV vaccination.

PRESENTATION

Oduor, Margaret

CASE-CONTROL STUDY IN WESTERN KENYA: DOES ALCOHOL AND TOBACCO CONTRIBUTE?

ESOPHAGEAL CANCER RESEARCH

11:00–12:30

Friday

10 November

Oduor, Margaret; Meny, Diana; Kigen, Nicholas; McCormack, Valerie; Schuz, Joachim

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Esophageal cancer is the eighth most common cancer worldwide with an age-standardized rate (ASR) of 5.9 per 100,000. In Kenya it is the commonest cancer with an ASR of 17.6 in both sexes. It is characterized by a unique worldwide geographic distribution with high incidence rates in China, Northern Iran and South Africa. In certain regions in East Africa including Kenya there is an increased incidence rate of esophageal cancer with variable geographic distribution. Kenya bears Africa's second largest esophageal cancer burden, and the predominant histological type esophageal squamous cell carcinoma. Tobacco and alcohol consumption have been identified as main risk factors for esophageal squamous cell carcinoma in Europe, North America and South Africa with a multiplicative joint effect when both are consumed. High prevalence of alcohol consumption and tobacco consumption have been reported in rural areas of Kenya where alcohol abuse is associated with the availability of cheap homemade alcohol. A 2012 survey showed that overall, 13.3% of Kenyans were currently using alcohol, 9.1% tobacco while 30% had ever consumed alcohol. Despite this no well-designed analytical studies have been conducted to determine factors associated with the increasing incidence of this cancer in western Kenya.

We therefore conducted a case-control study in 2 phases: the pilot phase was from August 2013 to September 2014 and the main study from October 2015 and is still ongoing. The data collection methods were almost identical in the two phases. Incident cases were derived from ongoing case control study to investigate environmental, behavioral, nutritional and genetic associated with esophageal cancer in western Kenya. All adults with a history of progressive dysphagia or clinical features suggestive of an esophageal tumor presenting to the Moi Teaching and Referral Hospital for endoscopy were enrolled into the study. Those who fulfilled the inclusion criteria, were asked to participate in the study whose objectives were clearly explained and confidentiality assured. Controls were age-frequency matched mainly hospital-patients, avoiding those with other cancer diagnoses. Biological specimen collection and questionnaire administration was conducted by well-trained research assistants. Questions regarding alcohol and tobacco use included types of substance, frequency, quantity and length of consumption. We will present odds ratios to show the association between esophageal cancer and tobacco and alcohol consumption separately and when used in combination.

POSTER

POSTER SESSION TWO

16:30–18:00
Thursday
9 November

Ofosu-Poku, Rasheed

P365 | EXPERIENCES OF PALLIATIVE CARE NURSE RESIDENTS

Adu, Barbara¹; Ahmed, Ayesha Adjoa Boateng²; Anyane, Gladys¹; Ofosu-Poku, Rasheed¹; Opare-Lokko, Edwina Addo²; Quaidoo, Tabitha Gyanewaa¹

¹Ghana College of Nurses and Midwives; ²Palliative Care Team

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Background Transition in role from a General Nurse/Midwife to a Clinical Nurse/Midwife Specialist is a rather challenging process. Nursing residency is a new development in Ghana towards training clinical nurse specialists in various fields, who will not only be clinicians, but also educators, researchers and leaders. This paper explores the experiences of nurse residents in a Palliative Care program as they face the reality of taking responsibility as specialist nurses.

Method There are four residents under training in the Palliative Care Nurse Specialist Program at the Ghana College of Nurses and Midwives – two each in the first and second year. Residents discussed their experiences as a group. The experiences were documented.

Results Experiences highlighted four main themes: knowledge, attitude, skills and challenges. Residents stated an improvement in their knowledge on what actually a holistic assessment entails, the realization of how important it is to include family/caregiver(s) in care, advanced planning, and care of the caregiver. They have acquired skills in carrying out the above activities, including the art of prescription. They reported transformation in their attitudes to and communication with patients and their families, seeing patients more as persons with social and spiritual aspects in addition to their physical being, maintaining hope whilst helping them prepare towards death.

Challenges Second year residents stated being unaware of scope of program before they started. All residents shared in the how challenging a shift in role from a general nurse/midwife to a clinical nurse specialist who is also a prescriber is. They also mentioned acceptance by their colleagues and other specialists, and not having access to a job description stating what exactly they will be required to do in their facilities will be.

Conclusion This brief study throws more light on the perspective of residents of how the role transition is experienced. It will assist educators gain a better understanding of their experience in the early stages of training.

PRESENTATION

**CAPACITY
BUILDING
FOR
PATHOLOGY**
11:00–12:30
Wednesday
8 November

Ogunbiyi, Olufemi

BASIC STEPS FOR IMPLEMENTING QUALITY CONTROL/ QUALITY ASSURANCE IN A LOW RESOURCE SETTING

Ogunbiyi, Olufemi¹

¹University of Ibadan / University College Hospital

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Background Quality control and quality assurance are terms that relate to systems of checks at all stages of a process to ensure that the said process is working to produce acceptable outcomes. For pathology, this is the provision of timely reliable results that impact appropriate patient management by the attending physicians, leading to the avoidance of uncompleted planned actions and the use of wrong plans to achieve a treatment goal. Increasing populations and workload due to inadequate numbers of pathologists, as well as poor financing, dictate that innovative methods to assure quality practice be put in place in low resource settings.

Materials and Methods Significant expansion in knowledge and technological development continue to constitute challenges to pathology practice as they impact patient management. Publications on testing diagnostic errors from pre-analytical through analytical and post analytical phases have shown interesting results in higher income countries. Only a few studies on quality control and assurance in Low-income countries are known. Important observations are prolonged turn-around times and unavailability of ancillary techniques to guide appropriate and specific clinical management of patients. Proposed methods for improving and sustaining QA/QC in low resource countries will be explored and recommendations made.

Discussion Accuracy, timeliness and completeness are monitors that must be focused on in designing a quality assurance and improvement plan. However, all phases of the test cycle, turnaround time, and customer (clinician) satisfaction are important quality assurance and improvement monitors. Inadequate numbers of pathologists may require the employment of telepathology services and setting up regional diagnostic facilities where specialist referrals with ancillary techniques can be made to cut out delays. Poor financing is often responsible for insufficient materials and close monitoring of quality of supplies is necessary. Internal quality checks also need to be set up especially for signing out malignant diagnosis, which are the main problems found to affect patient management in pathology training centers. Subscribing to External quality assurance programmes should be mandatory.

Conclusion There is a need to emphasize pathological services as the key component that direct proper patient management and properly plan these services if healthcare is expected to improve in low resource countries. Training of specialists to breach the gap of inadequate numbers should also be top on the agenda.

PRESENTATION

Ogundiran, Temidayo

CONFLICTS OF INTEREST IN ONCOLOGY PRACTICE AND RESEARCH

Ogundiran, Temidayo^{1,2}

¹University of Ibadan; ²University of Sierra Leone

ETHICS IN
GLOBAL
ONCOLOGY
PRACTICE &
RESEARCH

11:00–12:30

Friday

10 November

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The world of oncology is a huge one, consisting of many interrelated components. Cancer care and cancer research are two major components that are intensely linked and interconnected. The products of one provide the basis for the other, while the feedback from the other provides the impetus for the first. Both involve inputs from multiple professionals. Both singly and together generate, mobilize and expend vast resources- financial, academic, professional, investments, opportunities, etc. The primary and common goal in both is the patient. However, often times, the interests of the involved parties are diverse and in conflict. A conflict of interest has the potential to result in an abuse of the trust and respect that patients and the society have for oncology practice and research.

When interests conflict, there is conflict of values and conflict of commitments. Competing interests engender dual loyalty, and attention to a primary or superior interest is often unduly influenced by commitment to a secondary or subordinate interest. Given the nature of clinical practice and research, conflicts of interests are not inherently evil and may be unavoidable in certain circumstances. However, competing interests create potentials for misconduct for the involved individual, people or institution. What conflicts of interests are peculiar to oncology practice and research? How can they be avoided, minimized, or handled? What moral compass is available to navigate the terrain of conflicts when the practitioner is the researcher, and when the researcher has to relate with the industry or funding agencies? Is the policy of disclosure of conflicts of interests in presentations, publications and other writings sufficient to mitigate the potential for misconduct, and thereby preserve patients' confidence and assurance? These and related issues will be discussed in this presentation.

PRESENTATION

GERMLINE GENETIC CANCERS: BREAST & OVARIAN

14:40–16:30

Thursday

9 November

Ogundiran, Temidayo

HOW TO IDENTIFY HIGH RISK WOMEN IN YOUR PRACTICE: RESULTS FROM THE NIGERIAN BREAST CANCER STUDY

Ogundiran, Temidayo^{1,2}; Huo, Dezheng³; Adebamowo, Clement⁴;

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¹University of Ibadan; ²University of Sierra Leone; ³University of Chicago;

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The Nigerian Breast Cancer Study is a multi-institutional collaborative research network to investigate the genetic epidemiology of breast cancer in Blacks, and to understand the basis for the rising incidence and mortality from breast cancer in indigenous African women. The collaboration began as a case control study in Ibadan, Nigeria, and has grown and expanded to other collaborating centres within Africa. Over the years, our studies have documented the contributions of anthropometric measures to the aetiology of breast cancer in a purely indigenous African population. For example, it was shown that attained height is a significant risk factor for breast cancer regardless of menopausal status, with a suggestion that energy intake in childhood may be important in breast carcinogenesis in indigenous Africans. Moreover, central adiposity, measured as waist circumference and waist/hip ratio, in both obese and normal weight individuals, is positively associated with breast cancer risk in African women.

We have also studied environmental factors including lifestyle and reproductive factors and how they interact with genetic factors to contribute to the rising incidence of breast cancer in women of African ancestry. Beyond confirming the protective role of parity and breast feeding against breast cancer in Nigerian women, we further examined the opposing effect of a transient risk in the immediate period following pregnancy and concluded that parity may have different roles in the development of pregnancy associated breast cancer versus other premenopausal breast cancer in Nigerian women.

Our main pursuit was exploring the genetic basis for breast cancer in Africans. Breast cancer is a genetically heterogeneous disease characterized by different penetrance, complex phenotypes and a polygenic pattern of inheritance. We analyzed the frequency and mutational spectra of BRCA1 and BRCA2 germline mutations in Africans. These and other known high-penetrance genes confer a moderate disease risk and account for a small proportion of breast cancer risk. The major genetic component of breast cancer risk remains uncharacterized. In collaboration with others, we have sought to identify some of these low-risk alleles of genetic variants by genome wide association studies (GWAS). Analyzing our findings of about two decades, and correlating them with Caucasian breast cancer literature, we have developed a model for predicting breast cancer risk in Nigerian women. This model is a potential tool for identifying African women with high risk for breast cancer.

POSTER

Ogunnorin, B. Olutoye

P302 | PSYCHOLOGICAL DISTRESS IN PATIENTS WITH GYNAECOLOGICAL MALIGNANCIES – IBADAN EXPERIENCE

**POSTER
SESSION
TWO**

16:30–18:00

Thursday

9 November

Ogunnorin, B. Olutoye^{1,2}; Adewale, S. Abiola³; Adenipekun, Adeniyi^{1,2}; Asuzu, Chioma^{1,2}; Mustapha, Mohammed I.⁴

¹University of Ibadan; ²University College Hospital; ³Lakeshore Cancer Centre;

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Introduction Distress in patients with cancer affects their personal satisfaction on the grounds that the disease influences the physical aspects of life, as well as the social, financial and psychological aspects of both patients and their families. The diagnosis and treatment of a gynecologic cancer may undermine a woman's personality and interpersonal connection since many social orders have credited unique and complex implications to female reproductive capacity and organs.

Objectives To assess the psychological distress and its psychosocial predictors among patients with gynecological cancers in the Radiotherapy Clinic of the University College Hospital Ibadan, Nigeria.

Methods Cross-sectional study of patients with different gynecological cancers seen within the six months of the study period using Socio-demographic data Questionnaire, Hospital Anxiety and Depression scale (HADS) and a Social Support Survey specifically for Medical Outcome survey. Sexual adjustment was assessed with Sexuality and Body Image Scale for gynecologic cancers (SABIS-G). Data were analyzed using the Statistical Package for Social Sciences (SPSS) software version 21.0.

Results A total of one hundred and fifty patients were studied. The mean age was 52.6 yrs. Nine (6.0%) respondents were single, 127 (84.7%) were married while 120 (80.0%) of them were employed. Cervical cancer was the most prevalent gynecological cancer -97 (64%). Others included endometrial cancer 23 (15.3%), ovarian cancer -16 (10.7%), vulva cancer -8 (5.3%) and vaginal cancer -6 (4%). Combination therapy with chemotherapy and radiotherapy was commonest treatment modality received by 96 (64%) of the women. One hundred and three (68.7%) of respondents presented with advanced disease while 20 (13.3%) presented with recurrent diseases. Eighty (53%) of the women had abnormal anxiety levels while abnormal depression level was noted in 59 (39%) of the women. A quarter of the women were however normal with no depression. Significant predictors of depression included place of residence, occupational status, income, body image, sexual adjustment and total social support received.

Conclusion Psychological distress is common among patients with gynecological cancers. Cervical cancer retained its position as the most prevalent gynecological cancer in Nigeria with most women presenting in the advanced stage. Socio demographic, medical and psychosocial factors correlated with distress in women with such cancers. Importance therefore should be attached to giving sufficient information and essential support to patients undergoing gynecological cancer treatment.

PRESENTATION

CULTURAL PERSPECTIVES IN CANCER

07:15–08:20

Friday

10 November

Ohaeri, Beatrice

CULTURAL INFLUENCES ON CLIENTS' COMPLIANCE WITH CANCER TREATMENT REGIMES

Ohaeri, Beatrice¹

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Cancer is the leading cause of death all over the world, with many more cases being diagnosed annually. It is estimated that 38.5 % of individuals are at the risk of developing cancer at a point in their lifetime. In 2017, it is estimated that 1,688,780 new cases of cancer will be diagnosed and about 600,920 people will die from it in the United States. There are predictions that this burden is expected to rise, with over 75 million prevalent cases, 27 million incident cases and 17 million cancer deaths expected globally by 2030. Evidence suggests that most new cases of cancers are now found in Africa, and low and middle income countries (LMICs), increasing from 15% in 1970, to 56% in 2008, and projected to reach about 70% by 2030. These figures may be seen as the tip of an iceberg, especially in these regions where records on cancer registry are insufficient. Advances in early detection and treatment methods could positively affect prognostic outcome in cancers. Despite these successes, studies in some parts of Africa have reported an unacceptably low level of compliance to screening and treatment for cancers. Among the factors identified, cultural influences stands out. Therefore, this paper examined the influence of culture on compliance with screening and treatment regime.

Culture signifies a set of norms that bind people together, therefore forming a way of life. The influence of culture on health behaviour is more obvious in African societies, as important decisions are linked to it. Cultural influences, such as traditions, fear, religious and cultural obligations of modesty, attitudes to gender of healthcare providers, fear of disclosure of results, need for spousal approval, among others, could be barriers to uptake of screening and compliance. These have been grouped into six classical cultural determinants, viz: social structure, religion, education, language, economic and political philosophies.

The two main types of social structure are individual and group attributes. Religion is the set of shared beliefs that a particular society observes, hence, it is important to be put into consideration in order to enhance compliance. Education may improve health literacy, leading to more cooperation and better compliance. Language eases communication and professional relationships. Knowledge of economic and political philosophies helps to understand the intrigues needed to improve compliance.

In conclusion, inadequate understanding of cultural factors could pose challenges in spite of good geographical and financial accessibilities, leading to late presentations, poor compliance with and uptake of screening, poor quality of life and increased mortality. Hence, there is the need to address non-medical determinants of health behavior in overcoming poor response of individuals to screening and treatment regime. This has the potential to improve prognosis cancers.

PRESENTATION

Ohaeri, Beatrice

EFFECTS OF NURSE-LED EDUCATIONAL PROGRAMME ON AWARENESS AND SCREENING PRACTICES OF PROSTATE CANCER AMONG MEN IN SELECTED HOSPITALS IN CROSS RIVERS STATE, NIGERIA

**REGISTRATION,
ONCOLOGY
NURSING
& OTHER
ABSTRACTS**

13:30–14:30

Thursday

9 November

Ohaeri, Beatrice¹; Ingwu, Justin²

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Introduction Prostate cancer (PC) is the leading cause of cancer death among men globally and in Nigeria. The rising incidence of PC constitutes a serious health concern. Available evidence suggests factors responsible for this escalating mortality among Nigerian men, are: lack of awareness, low uptake of early detection measures and scarcity of intervention studies that promote their use. Despite the morbidity and mortality among men, there exists no comprehensive health information package for PC awareness and screening practices in Cross River State. Therefore, the study evaluated the effectiveness of a nurse-led educational programme on awareness and screening practices of PC among men in selected hospitals in Cross River State, Nigeria.

Methods The study utilized quasi experimental pre-test, post-test design. Stratified random sampling was adopted to select four hospitals across three senatorial districts in Cross River State. Using simple random sampling, two hospitals were assigned as intervention and control settings. A sample of 420 men participated, with 210 assigned to each group. Participants were purposively selected. An interventional education package comprising four modules was administered to the IG for four weeks and post intervention data were obtained using validated structured questionnaire ($r=0.87$) from both groups at pre- intervention, immediately after intervention (PT1), at three (PT2) and six months intervals (PT3). Data were analyzed using descriptive statistics, Chi-square, t-test and ANOVA at 0.05 level of significance.

Results There was significant difference between the mean scores of awareness of PC among the IG than CG ($P < 0.05$), at PT3. In addition, 44.3% of the participants underwent PC blood screening test in IG than 4.5% in CG ($p < 0.05$). Also, more (17.6%) participants carried out digital rectal examination among IG compared to CG 3.3% at PT3, ($P < 0.005$). There was also a significant association in the level of knowledge of PC before and after intervention ($p < 0.000$).

Conclusion The intervention improved the level of awareness of PC over a short period and enhanced informed decisions on PC screening practices over a longer period. Therefore, it was recommended that there is need to integrate innovative health educational programme about PC in hospitals to ensure sustenance of knowledge, increase the uptake of screening practices and ultimate reduction in mortality.

POSTER

Ojesina, Akinyemi

P255 | SOMATIC GENOMIC ALTERATIONS IN CERVICAL CANCER OCCURRING IN PATIENTS OF AFRICAN DESCENT

**POSTER
SESSION
TWO**

16:30–18:00
Thursday
9 November

Ojesina, Akinyemi¹; Shrestha, Sadeep¹; Srinivasasainagendra, Vinodh¹; Sundaresan, Aishwarya¹; Tiwari, Hemant¹
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Background Cervical cancer is responsible for 15% of all deaths in due to cancer in women worldwide. In order to identify genomic targets for therapy in cervical cancer, we and others have reported comprehensive genomic analyses of whole exome, whole genome and transcriptome derived from cervical cancer patients (Ojesina et al. Nature 2014; TCGA. Nature 2017). There are race-associated disparities in the incidence, morbidity and mortality associated with cervical cancer, with worse prognosis in people of African descent. However, little is known about the genomic underpinnings of these disparities. In this study, we sought to test the hypothesis that the spectrum and relative frequencies of somatic mutations will be different between individuals of Caucasoid and African descent.

Experimental Procedures We analyzed whole exome sequencing and copy number alteration data derived by the Cancer Genome Atlas (TCGA) from 222 cervical carcinoma patients for whom self-reported racial information was available. The Mutect and MutSig algorithms were used to identify somatic mutations and significantly mutated genes (SMGs) respectively, with false discovery rate (FDR) correction. Mutational frequencies were compared between races using Fisher's test (with FDR). Copy number alterations were also analyzed using the GISTIC algorithm.

Results There were 171 Caucasian, 28 African-American, 15 Asian and 8 American Indian patients in the cohorts examined. As expected, the spectrum of somatic mutations in Caucasian is similar to previously published work, with SMGs including as PTEN, HLA-B, EP300, FBXW7, etc. Interestingly, there was a higher frequency of somatic mutations in some genes involved in epithelial differentiation and DNA repair in African-Americans compared with Caucasians. In addition, copy number analyses identified putative novel oncogenes in the African-American subset of cervical tumors, on chromosomal cytobands 3p21, 3q28, 7q21.

Conclusions We have identified potential biomarkers for cervical cancer in non-Caucasoid individuals, which need to be confirmed with larger sample sizes in future studies. Further work will involve investigating mutational profiles in African patients and searching for associations between these somatic genomic alterations and prognosis in cervical cancer patients.

POSTER

Ojewole, Foluso

P285 | SOCIO-DEMOGRAPHIC FACTORS ASSOCIATED WITH PATIENTS' SATISFACTION WITH NURSING CARE AMONG ONCOLOGY PATIENTS IN LAGOS UNIVERSITY TEACHING HOSPITAL

**POSTER
SESSION
TWO**

16:30–18:00

Thursday

9 November

Ojewole, Foluso¹; Anyanwu, Juliet¹

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Patient satisfaction is one of the established standards to assess achievement of the services being provided in the hospitals. Studies have shown that certain factors may influence patients' satisfaction with care thus affecting their overall judgement on the quality of care. Generally, oncology patients undergo extensive treatment and longer period in the care setting which makes assessing their satisfaction with nursing care important. The study examined socio-demographic factors associated with patient satisfaction with nursing care among Oncology patients in Lagos University Teaching Hospital (LUTH).

The study adopted a descriptive correlational design. Study population was 360 in-patient and out-patient oncology patients of Lagos University Teaching Hospital. Sample size of 157 oncology patients were purposively selected. A validated questionnaire was used for data collection. The reliability test yielded Cronbach's Alpha coefficient of 0.76. Data were analysed using both descriptive (frequency, percentages, mean) and inferential (Pearson Product Moment of correlation coefficient and Chi-square) statistics.

Findings revealed that (88.5%) 139 of participant claimed that they were satisfied with the care provided in oncology unit which motivates them to recommend this facility to friends and relatives. Participants claimed that long waiting period for treatment, inadequate availability of materials needed for care, excess workload of nurses and stressful environment could affect patient satisfaction with care. No significant association was observed in age ($r=0.735$; $p>0.05$), educational level ($r=0.909$; $p>0.05$), gender ($r=0.396$; $p>0.05$) marital status ($r=0.359$; $p>0.05$) stage of treatment ($r=0.709$; $p>0.05$) and patient satisfaction. There was a significant association ($r=1.231$; $p<0.05$) between patients' income level and their satisfaction with nursing care.

The study concluded that oncology patients' satisfaction with nursing care at Lagos University Teaching Hospital was good. Oncology patients wanted their treatments to be prompt and not delayed and would like to see their nurses' work in a less stressful environment with decreased workload. Some socio-demographic variables were not associated to patients' satisfaction with nursing care. It is recommended that patients' satisfaction assessment be given greater attention. The satisfaction assessment should not be limited to nursing care but all care rendered by all healthcare practitioners should be assessed. The institution should provide a supportive environment to nurses caring for patients with cancer especially necessary equipment and supplies that would make their work experience less stressful.

POSTER

Okediji, Paul

P235 | THE PATTERN OF COMORBIDITIES IN CANCER PATIENTS IN LAGOS, SOUTH-WESTERN NIGERIA

**POSTER
SESSION TWO**

16:30–18:00

Thursday

9 November

Awofeso, Opeyemi³; Fatiregun, Omolara²; Habeebu, Mohammed²; Okediji, Paul¹; Salako, Omolola^{1,2}

¹Sebecly Cancer Centre; ²Lagos State University Teaching Hospital;

³University of Lagos

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Background Cancer has become one of the most commonly diagnosed conditions worldwide, posing significant public health challenges to developed and developing economies globally. The influence of co-existing medical conditions on the outcome of care for the cancer patient has often been ignored, till recently. Comorbidities influence the survival of patients with cancer; cause diagnostic dilemmas and delays in cancer diagnosis; lead to presentation at advanced disease stages; and result in increased risk of complications from surgery, higher rates of postoperative mortality, and a greater consumption of medical resources. The focus of this study is to determine the magnitude and pattern of comorbidities in Nigerian cancer populations, and demonstrate the use of comorbidity indices in predicting mortality/survival rates of cancer patients.

Methods Using a retrospective study design, data was extracted from hospital reports of patients who have been diagnosed and treated for various cancers between January 2015 and December 2016 at the Department of Oncology and Radiotherapy, Lagos University Teaching Hospital (LUTH), Lagos. Patients were selected based on histological diagnosis of a malignancy, ages older than 18 years, and diagnosis and treatment for a malignancy within the study time frame. Patients with skin cancers; and records with missing or unknown data were excluded. Patient comorbidities were ranked and weighted using the Charlson Comorbidity Index (CCI).

Results A total of 657 cancer cases were identified, with breast and cervical cancer together constituting over 60% of the total population of 77.93% females and an overall mean age of 53.18 (SD 13.14) years. Overall, 209 (31.81%) patients experienced one or more comorbidities, with the most common being hypertension (22.98%), uncomplicated diabetes (7.46%), and peptic ulcer disease (2.74%). Hypertension-augmented Charlson Comorbidity Index scores were 0 (68.19%), 1-2 (29.38%), and ≥ 3 (2.43%). Elderly prostate (44.12%), colorectal (41.67%), nasopharyngeal (30.77%), and breast (28.30%) cancer patients had the most comorbidities. Charlson probability of 10-year survival rates was $\geq 95\%$, 77.48%–90.15%, and 0.00%–53.39% in 54.79%, 33.79%, and 11.42% of these patients respectively.

Conclusion The results show that comorbidities occur significantly in Nigerian cancer patients; and influence the prognosis, treatment outcome, and survival rates of these patients. The CCI is an easy to use prognostic tool for cancer patients, and should be incorporated into routine cancer assessment and treatment protocols as it helps to determine those who are at greater risk of mortality and determine optimal treatment schedules for such patients.

POSTER

Okediji, Paul

P303 | PATTERN AND PREDICTORS OF UNMET SUPPORTIVE CARE NEEDS IN CANCER PATIENTS

Fatiregun, Olamijulo²; Okediji, Paul¹; Salako, Omolola^{1,2}

¹Sebecly Cancer Centre; ²Lagos State University Teaching Hospital

**POSTER
SESSION**

TWO

16:30–18:00

Thursday

9 November

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Background The incidence of cancers is increasing, and this is associated with an increase in the burden of the disease. Patients with cancer have to deal with reduced physical functioning, emotional instability, difficulty in concentrating, and an overall diminished feeling of well-being. This creates deficits that have not been well catered for by traditional cancer care, leading to an overall dissatisfaction with care, and a reduced quality of life. This review aims at assessing the pattern of unmet needs in cancer patients and to provide information as to the factors that influence the perception of unmet needs.

Methods Studies directly focused on unmet needs in cancer patients were retrieved from MEDLINE, PubMed, PsychINFO, EMBASE, and Google Scholar; from the earliest records till 2016. Unmet needs in cancer patients have been measured with a wide variety of tools, with the Supportive Care Needs Survey (SCNS) being the most commonly used as a result of its strong psychometric properties, ease of use, responsiveness, and its coverage of all the domains of unmet needs.

Results The most common unmet needs were in the domains of health system and information, psychological, and physical and daily living. These needs were influenced by sociodemographic factors such as age, sex, marital status, income level; and clinical factors such as location of cancer, stage of disease, and tumor size.

Conclusion It is clear that cancer patients experience a wide range of unmet supportive needs, for which efforts need to be desperately made in order to improve the supportive care services for these patients and their quality of life. While it may not be possible to meet all the needs of every cancer patient, routine and regular monitoring of unmet needs using the appropriate tools is crucial so that cancer care and other health professionals can develop, implement, and streamline specific aspects of cancer care to strategically meet the specific needs of their patients.

POSTER

WELCOME
RECEPTION
AND POSTER
SESSION ONE

16:30–18:00

Tuesday

7 November

Okunade, Kehinde

P029 | SERUM TRACE ELEMENT LEVELS AND INVASIVE CANCER OF THE CERVIX IN NIGERIAN WOMEN

Okunade, Kehinde¹; Salako, Omolola²; Okunowo, Adeyemi¹; Anorlu, Rose¹
¹University of Lagos; ²Lagos University Teaching Hospital

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Background Cervical cancer is the most common gynecological cancer and a leading cause of cancer deaths among women in Nigeria. Out of the estimated 14,550 women diagnosed with the disease in Nigeria annually, 9,659 will die from it.

Aim To determine the association between serum levels of trace elements and invasive cervical cancer.

Methods This was a cross-sectional case-control study carried out among women seen at the Lagos University Teaching Hospital (LUTH). Fifty (50) histologically diagnosed case patients with cervical cancer, who had not had any treatment and 100 cancer-free control patients were recruited by consecutive sampling for the study. A structured interviewer-administered questionnaire was used to collect relevant data following which venous blood sample was obtained from each participant. Serum zinc, copper and selenium concentrations were then estimated.

Results There were significant low serum levels of zinc and selenium in cervical cancer patients when compared with normal healthy controls. Such association was not seen between serum copper and cervical cancer.

Conclusion Further robust prospective studies are needed in the future to definitively determine whether these trace element concentrations impact clinical outcomes.

POSTER

Okunade, Kehinde

**P304 | UTILIZATION OF CANCER INFORMATION SERVICE FOR
CERVICAL CANCER CONTROL IN LAGOS, NIGERIA**

**POSTER
SESSION**

TWO

16:30–18:00

Thursday

9 November

Okunade, Kehinde¹; Salako, Omolola²; Sekumade, Adebayo²

¹University of Lagos; ²Lagos University Teaching Hospital

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Background There is a currently an increase in the incidence of cervical cancer in Nigeria with most cases seen in the advanced stages; thus resulting in the poor rates of survival. Cancer information service (CIS) is now assuming an emerging role in this cancer control.

Aim The study was aimed to assess the effectiveness of CIS in increasing the awareness and accessibility to cervical cancer control strategies in Lagos.

Methods This was a descriptive study carried out over a one-year period, using a health communications program (mHealth). An initial period of public awareness was carried out over a 3 months period after which members of the public were encouraged to call the help lines. Cervical cancer information was provided and the relevant data of the callers were recorded by the information specialists during the study period.

Results A total of 404 people were reached during the study period. The majority (87.9%) of the callers had never had cervical cancer screening while 4.5% were cervical cancer patients who required information on how to live and cope as cancer survivors. All callers who had never been screened were referred to the cytology/colposcopy clinic of the Lagos University Teaching Hospital (LUTH) for a free screening.

Conclusions The rapid growth of mobile phone use in Nigeria has presented a unique opportunity to improve cancer care. There is evidence to suggest that mHealth can be used to deliver increased health care services to the increasing population in Nigeria.

POSTER

WELCOME RECEPTION AND POSTER SESSION ONE

16:30–18:00

Tuesday
7 November

Okwor, Vitalis

P061 | IMPROVING COMMUNITY HEALTH WORKERS KNOWLEDGE OF AND ATTITUDE TOWARDS BREAST CANCER IN RURAL COMMUNITIES IN EASTERN NIGERIA

Ann, Okorafor¹; Chinwendu, Agwu Okereke¹; Kenneth, Nwankwo¹;
Martin, Imhansoloeva¹; Nwamaka, Lasebikan¹; Okwor, Vitalis¹; Onyeka, Tonia¹
¹University of Nigeria Teaching Hospital

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Background Poor knowledge of breast cancer and the wrong perception about its treatment is pervasive among many Nigerian women particularly those in rural communities who lack access to advanced technology and health insurance coverage. Community health workers (CHWs) are at the forefront of closing the knowledge gap and improving on attitude toward breast cancer and its treatment in these rural settings through provision of an effective cancer patient care and support. Against this backdrop, the University of Nigeria Teaching Hospital-Breast cancer support group (UNTH-BCSG) was established by a group of health professionals involved in caring for cancer patients in the eastern parts of the country. The consortium provides education and supports to breast cancer patients, training support to community health workers for early detection and prompt referral, carry out community outreach and education in both urban and rural communities, free cancer screening services to communities, as well as creating and supporting systems that effectively links cancer patients from the community level to the treatment centres.

Objectives To implement a training program aimed at improving community health workers knowledge of and attitude towards breast cancer in selected rural communities in Eastern Nigeria.

Methodology A cross sectional study design was used to select total of 521 health workers drawn across the seven (7) randomly selected local government areas in Enugu state, South Eastern Nigeria. Respondents' level of knowledge and attitude towards breast cancer was assessed before and after the training. Ethical clearance was gotten from UNTH ethical review committee. Data was collected using self-administered questionnaire, while data analysis was done with SPSS version 20.

Results Out of a total 521 CHWs with a mean age of 37.71 ± 8.789 years, majority of the workers were females (92.9%), married (74.1%) received formal trainings in community health education (67.3%), and were predominantly Christians (96.4%). Prior to training, only 18.4% of respondents had ever screened for breast cancer, while 68.3% practice breast self-examination. T-test analysis showed that the mean knowledge score of breast cancer (6.86 ± 2.48), mean knowledge of risk of breast cancer (5.69 ± 3.15) and the mean attitude towards breast cancer score (5.98 ± 3.04), significantly improved with the training program to 7.56 ± 2.29 ; 10.62 ± 3.09 ; and 7.21 ± 2.69 respectively ($P < 0.01$).

Conclusion Findings suggests that training intervention programs are effective in improving CHWs knowledge of breast cancer and dispelling wrong perception and attitude toward accessing treatment.

PRESENTATION

PALLIATIVE
CARE &
OTHER
ABSTRACTS

14:40–16:30

Wednesday

8 November

Okwor, Vitalis

THE IMPACT OF SUPPORT GROUP INTERVENTION ON QUALITY OF LIFE OF PATIENTS WITH ADVANCED BREAST CANCER

Okwor, Vitalis¹

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Background Health-related quality of life is an important end point in breast cancer care. Assessing quality of life in breast cancer patients could contribute to improved treatment outcome and could even serve as monitor along with medical parameters. The need for psychosocial support is well established among breast cancer patients with levels of psychological distress and depression, particularly after diagnosis and treatment. Emotional and social support with educational information on cancer, nutritional needs, exercise and the need for regular follow up in breast cancer care have been noticed to improve the outcome of treatment. Cancer support helps patients to cope with cancer by adjusting their attitudes, knowledge, and expectation about the disease.

Objective To determine the impact of support group intervention on quality of life of patients with advanced breast cancer

Methodology A prospective cohort study conducted at the oncology unit of University Nigeria Teaching Hospital Enugu. The study period was between March 2016 and May 2017, with the inclusion of 113 women by convenient sampling. A two month periodic meeting for all breast patients in University of Nigeria Teaching Hospital, Enugu was used to gather the patients. Health information on breast cancer, nutritional needs, the role of exercise and the need for regular follow up in breast cancer care were offered to them as well as the means of overcoming the psychosocial burden in cancer. Data was collected using WHO QOL-BREF questionnaire. Statistical analysis was done by applying Pearson correlation and Friedman's statistical tests, p-values < 0.05 were considered statistically significant.

Result A total of 113 breast cancer women were recruited for this study. At the end of the intervention, 14 women (12.4%) were censored due to death, while post assessment was carried out for only 99 women. Post intervention analysis showed that there was a significant positive correlation between availability of social support to respondents (FS score) and the four quality of life domains ($p < 0.05$). Further analysis also showed that respondents' quality of life significantly increased across all domains at post intervention ($p < 0.05$).

Conclusion Patients receiving support group intervention all had improved quality of life.

PRESENTATION

Olaly, Wilfrida

VICARIOUS TRAUMA EXPERIENCED BY THOSE TAKING CARE OF CANCER PATIENTS

**CARE FOR
FAMILIES
OF CANCER
SUFFERERS**

Olaly, Wilfrida¹

¹Cancer Center

07:15–08:20

Thursday

9 November

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There are many titles and similar concepts which are used to explain what vicarious trauma is. Some of these are burnout, compassion fatigue and secondary traumatic stress. Vicarious traumatization is the process through which the caretaker inner experience is negatively transformed through empathic engagement with the client's trauma material in this case the cancer illness. These concepts are used in different situations like those taking care of cancer patients, those who have been taking care of those in hospitals, palliative care and the like. The situation becomes even more complicated when taking care of a cancer patient who is just waiting to die. This paper is written from personal experience I had while taking care of my own sister whom I stayed with up to the time she passed on. The psychological, emotional, spiritual, physical torture she was going through were overwhelming and these affected me greatly. There is a lot of emotional price for caring. Signs of Compassion Fatigue & Vicarious trauma will be discussed. What contributes to burnout will also be highlighted. How vicarious trauma can be addressed will finally be discussed.

POSTER

POSTER SESSION TWO

16:30–18:00
Thursday
9 November

Olateju, Adetoun

P306 | USING SMART PHONES AND IMAGING OF AN ENHANCED VISUAL-ASSESSMENT DEVICE TO DETECT CERVICAL CANCER IN LOW-RESOURCE SETTINGS: A PILOT PROGRAM IN THE FEDERAL DEMOCRATIC REPUBLIC OF ETHIOPIA

Olateju, Adetoun¹; Wieland, Julie¹; Abdella, Kunuz²; Petros Mamo, Hezkiel³; Greblo, Alessandro³; Bottechia, Matteo³

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Objective Cervical cancer is one of the two leading causes of cancer deaths in sub-Saharan Africa, accounting for almost 285,000 deaths in 2015. Ethiopia has an estimated cervical cancer incidence of 17.25%. The country uses visual inspection with acetic acid (VIA) as its primary screening method for cervical pre-cancer. Accurate diagnosis depends on the ability of the provider to visualize the cervix properly and differentiate between cervical lesions to make an appropriate diagnosis. The MobileODT® Enhanced Visual Assessment (EVA) system is designed to improve diagnostic accuracy while the built-in app is devised to enhance clinical supervision through the capture and transmission of real-time documentation of patients' lesions. This study aims to assess the quality of diagnosis using EVA system as a tool in cervical cancer screenings in low resource settings.

Methods Case-control study with eight intervention sites will use the EVA system to augment VIA procedures of women who are eligible, as well as improve the quality of clinical supervision of cervical cancer programs. Three non-intervention sites will use VIA only as the screening method for cervical pre-cancer.

Results (expected June 2017) For the intervention sites, we expect an improvement in quality of diagnosis, measured by VIA positivity rate within the margins of 5-10 percent; an increase in quality assurance as healthcare worker confidence increases; an expected outcome of 90% or greater agreement between clinical supervisor and healthcare provider on the diagnosis of pre-cancer; and a marked increase in healthcare capacity using the EVA system for clinical-supervision activities.

Conclusion Across much of the developing world, the standard of care for cervical cancer screening is VIA. Utilizing the MobileODT® EVA system in cervical cancer screening programs in low resource settings has the potential to improve quality assurance of VIA, improve supportive supervision, and increase healthcare provider capacity in low-resource settings.

KEY- NOTE

Olopade, Olufunmilayo

**ETHNIC SPECIFIC BREAST CANCER RISK ESTIMATES FOR SCREENING
AND SURVIVAL, AND TARGETED THERAPIES**

**KEYNOTE 3
AND 4**

09:30–10:30

Wednesday

8 November

Olopade, Olufunmilayo¹

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Analysis of cancer genomes has provided fundamental insights into the process of malignant transformation, and cancer genomes have rapidly become an integral part of the practice of clinical oncology, with implications for diagnosis, prognosis, treatment and prevention. Inherited and sporadic cancers often share common mutational events. Pathogenic BRCA1 and BRCA2 mutations are the strongest predictors of breast and ovarian cancer risk and may soon be categorized as the strongest predictors of aggressive prostate cancer risk as well. Within two decades of identifying BRCA1 and BRCA2 as major breast and ovarian cancer susceptibility genes, there are already several FDA approved targeted therapies to treat BRCA associated cancers. To date, risk reducing interventions have been driven by outdated perspectives and approaches with no defined pathways for proactively assisting at-risk patients. The situation is worsened by the heterogeneity and diversity of the social and cultural context in which individuals and families with inherited cancer gene mutations are identified. Work from our group and others have demonstrated the significant burden of early onset ER negative as well as high rates of pathogenic BRCA1 and BRCA2 mutations among African breast cancer patients. Waiting to treat advanced cancer with targeted therapies is a failure of primary prevention and population-based strategies for risk assessment and management in high-risk populations will be needed. Using high throughput whole genome strategies, including genome-wide association studies, whole exome sequencing, and whole genome sequencing, we can now deeply explore the most foundational instigators of the most aggressive forms of breast cancer. Our work is informed by attentive, interdisciplinary study of the most aggressive phenotypes of breast cancer in diverse populations in the US and Nigeria. I will present ongoing research in our group, our recent findings and future directions for the early detection and prevention of the most aggressive subtypes of breast and ovarian cancer in high-risk populations of African ancestry.

POSTER

Olorunfemi, Gbenga

P236 | TEMPORAL TRENDS IN EPIDEMIOLOGY OF CERVICAL CANCER IN SOUTH AFRICA (1994–2012)

POSTER SESSION TWO

16:30–18:00

Thursday

9 November

Olorunfemi, Gbenga^{1,2}; Ndlovu, Ntombizodwa¹; Masukume, Gwinyai¹; Pisa, Pedro T.¹; Singh, Elvira^{1,2}

¹University of the Witwatersrand; ²National Cancer Registry, National Health Laboratory Service

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Background Cervical cancer (CC) is the second most common female cancer in South Africa (SA). Improved access to reproductive health services, initiation of population based CC screening program in 2000 and nation-wide roll-out of ART in 2004 may impact on epidemiological trends of CC in SA. We therefore evaluated the CC trends in SA over a 19-year period (1994–2012).

Methods We conducted temporal trend analyses of incidence (1994–2009), mortality (2004–2012) and survival (2004–2009) of CC using secondary data from the National Cancer Registry (NCR) and Statistics South Africa (Stats SA) respectively. Annual age-standardised incidence (ASIR) and mortality (ASMR) rates by population group, age group, histological types and province of residence were calculated. Direct standardisation method with SEGI world population was conducted. Five-year survival rates (2004–2009) were calculated using the complement of mortality to incidence rate (1-MR:IR) ratio. Linear regression models were fitted to determine the average annual percent change (AAPC) of the trends. Spatial distribution was conducted by utilising the GIS coordinates of SA to map the provincial ASMR.

Results The average annual CC cases and mortalities were 4,694 (75,099cases/16years) and 2,789 (25,101mortalities/9years) respectively. Women below 50 years accounted for 43.1% of cases and 35.7% deaths and those between 25 and 34 years had increased incidence (AAPC range: 1.1% to 3.1%, P-value<0.001) and mortality rates (AAPC range: =+4.1% to -6.3%, P-value <0.001). The ASIR increased slightly from 22.1/100,000 in 1994 to 23.3/100,000 in 2009 (AAPC= 0.9%, P-value<0.001), while the ASMR decreased slightly from 13.9/100,000 in 2004 to 13.1/100,000 in 2012 (AAPC =-0.6%, P-value < 0.001). The incidence of Squamous cell carcinoma (SCC) (17 – 19/100,000) was about 8-fold higher than the incidence of Adenocarcinoma (ADC) (2 – 2.6/100,000) and there was increased trends of SCC (AAPC = 1.4%, P-value<0.001) but stable ADC trends (AAPC= -0.4%, P-value<0.001). In 2012, the ASMR in Blacks was 5.7-fold higher than in Whites and the survival rates were higher in Whites and Indians/Asians (60-80%) than in Blacks and Coloureds (40-50%). From 2004 to 2012, five provinces had increased mortality rates (AAPC: 1.2 – 8.3, P-value<0.001) while four provinces had decreased mortality rates (AAPC: -16.6 - -1.0, P-value<0.001).

Conclusion Despite interventions, SA had minimal changes in overall CC rates, but marked racial and provincial disparity exists. In contrast to high income countries, younger women were disproportionately affected, hence maternal health initiatives should also prioritise CC control and targeted programs are necessary.

PRESENTATION

Olorunfemi, Gbenga

RISK FACTORS OF CERVICAL CANCER AMONG BLACK SOUTH AFRICANS IN THE POST-APARTHEID AND ANTI-RETROVIRAL ERAS: ANALYSIS OF JOHANNESBURG CANCER CASE CONTROL STUDY (1995–2010)

**EPIDEMI-
OLOGY**

ABSTRACTS

14:40–16:30

Wednesday

8 November

Olorunfemi, Gbenga^{1,2}; Ndlovu, Ntombizodwa¹; Masukume, Gwinyai¹; Pisa, Pedro T.¹; Singh, Elvira^{1,2}

¹University of the Witwatersrand; ²National Cancer Registry, National Health Laboratory Service

Correspondence drgbengafemi@yahoo.co.uk

Background Cervical cancer (CC) is the most commonly diagnosed cancer among black female South Africans. A shift in CC risks may occur in post-apartheid and anti-retroviral therapy (ART) eras, because of redress in socio-economic inequity and widespread ART coverage in the country.

Objective To explore and report risk factors associated with CC among black South Africans between 1995 and 2010

Methods We conducted three unmatched case control studies (CCSI, CCSII, CCSIII) using secondary data from a hospital-based Johannesburg Cancer Case Control Study ((JCCCS) (1995–2010), to respectively evaluate the effect of (I) HIV infection; (II) tobacco smoking and alcohol abuse and (III) sexual, reproductive and hormonal factors on the risk of CC among black South Africans, aged 18–79 years. The cases were participants with CC while controls were other female cancer participants that had no known association with CC and its risk factors. Unconditional logistic regression was conducted to build multivariate models.

Results In all, 10,548 participants were studied. About one-third (3,546/10,548; 33.6%) had CC and their mean age at diagnosis was 50.5 ± 11.3 years. From CCSI: Compared to HIV negative women, the odds of CC among HIV positive women increased from 2-fold (OR = 1.98; 95% CI: 1.34–2.92, P-value = 0.001) during pre-ART era (1995–2003) to 3-fold (OR = 2.94 95%CI: 2.26–3.83, P-value < 0.001) in the ART era (2004–2010). From CCSII: Current heavy tobacco smoking (OR = 2.2, 95% CI: 1.14–4.17, P-value = 0.018) and snuff use (OR = 1.3, 95%CI: 1.06–1.58, P-value = 0.01) increased the likelihood of CC. Alcohol abuse did not retain its univariate association with CC after correcting for confounders (P-value = 0.33). From CCS III: In comparison to single ladies, married women had an increased likelihood of CC (OR: 1.2, 95%CI: 1.05–1.43, P-value = 0.011). The odds of developing CC increases with increasing number of lifetime sexual partners (Ptrend < 0.001) but decreased with increasing age at first pregnancy (Ptrend < 0.001). There was an increased odds of CC among oral (OR = 1.4 95% CI: 1.07–1.77, P-value = 0.014) or injectable contraceptive users (OR = 1.5 95%CI: 1.21–1.89, P-value < 0.001) beyond ten years.

Conclusion One in three black female cancer patients had CC and there was an increased risk of CC among HIV positive women during the ART era. Some CC risks occurred among snuff users and prolonged users of hormonal contraceptives. Enhanced CC surveillance is necessary in the ART era and among prolonged hormonal contraceptive and smokeless tobacco users.

POSTER

Olukiran, Emmanuel Gbenro

P307 | BURN OUT SYNDROME AMONG A SAMPLE OF RADIATION ONCOLOGISTS IN NIGERIA

**POSTER
SESSION
TWO**

16:30–18:00

Thursday

9 November

Olukiran, Emmanuel Gbenro¹; Salako, Omolola¹; Fadipe, Babatunde¹; Jimoh, Mutiu¹; Joseph, Adedayo¹; Ahmed, Rilwan²
¹Lagos University Teaching Hospital; ²National Hospital, Abuja

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Introduction Burnout syndrome (BOS) is characterized by emotional exhaustion (EE), depersonalization and low personal accomplishment resulting from chronic stress at work. It is common occurrence among Oncologists, There is paucity of data on the psychological status of Nigerian Radiation Oncologists. The aim of the study is to assess the prevalence and characteristics of BOS.

Methods This is a descriptive, prospective and cross-sectional study conducted among Radiation Oncologists in Nigeria. A national survey was carried out at 3 local Radiotherapy conferences and participants answered a socio-demographics and work schedule questionnaires and the Maslach Burnout Inventory (MBI). The data was analyzed using Statistical Package of Social Science.

Results Fifty eight Radiation Oncologists representing 60% of the national work force completed the questionnaire. Twenty-one (36.2%) were junior registrars, 16 (27.6%) were senior registrars and 21 (36.2%) were consultants. The prevalence of BOS was 100%, 74.1% had EE, 51.7% had depersonalization and 100% had reduced personal accomplishment. A total of 48.3% participants experienced burnout in all 3 areas. There was an association between EE and the designation of Oncologists, with registrars being more likely to experience burnout in form of EE compared to senior registrars and consultants (p -value=0.048).

Conclusion BOS is a major problem among radiation oncologists in practice and specific educational tools to help improve the management of workload and psychological status are needed

POSTER

Oluwasola, Timothy AO

P237 | GESTATIONAL TROPHOBLASTIC DISEASE AT THE UNIVERSITY COLLEGE HOSPITAL, IBADAN: A SEVEN-YEAR REVIEW

**POSTER
SESSION**

TWO

16:30–18:00

Thursday

9 November

Oluwasola, Timothy A.O.¹; Awolude, Olutosin A.¹; Odukogbe, Akin-Tunde A.¹

¹University of Ibadan

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Background Gestational Trophoblastic Disease (GTD) is a heterogeneous group of diseases that includes partial and complete hydatidiform mole, invasive mole, choriocarcinoma, placental site trophoblastic tumour and recently epithelioid trophoblastic tumour. The prevalence of GTD varies across regions being higher in South East Asia than the rest of the world.

Objective The objective of this study was to determine the frequency, clinical presentation and management outcomes of GTD at the University College Hospital (UCH), Ibadan.

Methods This was a retrospective review of cases managed in the UCH, Ibadan between January 1, 2009 and December 31, 2015. The case records of all cases of GTD during study period were analyzed regarding their history, clinical examination, investigations, treatment and follow-up. Data analysis was done using Statistical package for social sciences version 23.0.

Results A total of 42 cases of trophoblastic diseases were managed during the period out of 12,425 deliveries giving a prevalence of 3.4 per 1000 deliveries (1 in 296). Of these cases, 25 (59.5%) had hydatidiform mole, 2 (4.8%) patients had invasive mole and 15 (35.7%) had choriocarcinoma. The mean age of patients was 31.0 ± 6.4 years and about one-quarter were nulliparous. Commonest mode of presentation was bleeding per vaginum (82.1%) followed by lower abdominal pain and haemoptysis. Major treatment intervention was dependent on the final diagnosis and included suction evacuation in 19(45.3%), chemotherapy alone in 9 (21.4%) and combination of chemotherapy and surgery in 14(33.3%). Anaemia was the major complication reported. Overall, the rate of loss to follow up was higher among the patients with hydatidiform mole. No mortality related to GTD was recorded during the period.

Conclusion The prevalence rate of GTD has remained fairly constant in our environment in spite of the advancement in diagnostic skills. However, there has been tremendous improvement in the survival although efforts need to be made on the need to reduce the rate of loss to follow up.

PRESENTATION

Oluwatosin, Oyeninhun Abimbola ONCOLOGY NURSING EDUCATION IN AFRICA

TRAINING IN ONCOLOGY

11:00–12:30

Friday

10 November

Oluwatosin, Oyeninhun Abimbola¹

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Cancer is considered a major public health threat especially in sub-Sahara-Africa where high morbidity and mortality is associated with the disease. The International Agency for Research on Cancer reported that about 715,000 new cancer cases and 542,000 cancer deaths occurred in Africa in 2008. It is speculated that this number may double by 2030 due to the aging and growth of the population. Globally Multidisciplinary approach to care has been proposed, this requires that all health professionals involve in cancer care work as a team. Nurses play a vital role throughout the continuum of care to ensure that the primary needs of patients are met. The complexity of the disease management and care require provision of high quality care by competent and knowledgeable health professionals.

However oncology nurses in Africa are not educationally prepared to be a strong link in the team, though African countries are at different stages of oncology nursing training. South Africa oncology nursing education may be comparable to what obtains in Europe and America, Egypt and Kenya too have taken giant strides. Nigeria also has a diploma training programme. Other African countries such as Rwanda, Tanzania, Morocco and Niger have also benefited from the model of visiting Scholars from Europe and North America investing in their oncology nursing training. This effort has been supported by the French League Against cancer and other European cancer agencies. The AORTIC virtual educational platform also focuses on Multidisciplinary training of health professionals in Cancer care.

AORTIC and other organizations should allocate resources for training nurse leaders who will carry out the vision of strengthening nursing in Africa, promote networking and build crucial alliances with other professionals and with international organizations. Resources should also be used for Professional development using face-to-face courses facilitated by travel grants. In addition the power of Information Technology may be used to strengthen nursing status and bargaining position with other stakeholders such as governments and hospitals.

In conclusion Oncology Nursing education demands attention of all concerned with Cancer control in Africa, to strengthen nursing by ensuring educational reforms that will elevate the professional status of nurses with system strengthening, patient safety and population health outcomes. Furthermore it is recommended that regional recommendations be made for minimum educational preparation of nurses in cancer care.

POSTER

**WELCOME
RECEPTION
AND POSTER
SESSION ONE**
16:30–18:00
Tuesday
7 November

Oluwole, Olabode

**P008 | PIN-LIKE PROSTATIC DUCT ADENOCARCINOMA IN A
RESOURCE LIMITED SETTING: HAEMATOXYLIN & EOSIN DIAGNOSIS**

Oluwole, Olabode¹; Aisuodionoe-Shadrach, Oseremen¹; Ajibola, Hafess¹
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In 2006, Hameed and Humphrey were the first to fully describe an unusual subset of prostatic adenocarcinoma composed of single glands lined by stratified non-cribriform epithelium and to highlight that this lesion mimics high grade prostatic intraepithelial neoplasia (HGPN). In 2008, Tavora and Epstein termed this pattern as “PIN-like prostatic duct adenocarcinoma”.

Aim This study aims to report rare variants of ductal adenocarcinoma.

Materials and Methods A 4-year retrospective study of PIN-like prostatic duct adenocarcinoma diagnosed between January to December (2013–2016) in the Department of Pathology/Forensic Medicine, University of Abuja Teaching Hospital, Gwagwalada, Abuja. The materials consisted of tissue blocks, glass slides and duplicates histopathology reports of patients whose specimens were received and processed in the Histopathology Laboratory of the hospital.

The diagnosis was made by Haematoxylin & Eosin stained glass slides, no immunohistochemistry was done due to limited resources in our center at the time of this study.

Results Twelve (12) Pin-like adenocarcinoma of the prostate were studied. The age range of the patients was 49–75 years with the mean age of 62 years. All the patients were found to have an enlarged hard and nodular prostate on digital rectal examination (DRE). The prostate specific antigen (PSA) ranged 12–20ng/ml. All the diagnosis were made by Haematoxylin and Eosin stained glass slides as no immunohistochemistry was available in the Department during the period of study.

Conclusion The import of this study is to show that with high index of suspicion and in-depth study of histopathology, rare variants of prostatic ductal carcinoma can be made in a resource limited setting. Moreover, there is need for international collaborating with centers abroad to adopt upcoming pathologists in centers with low resource setting for training, so as to improve their skills and return back to their countries to improve health care among their people.

PRESENTATION

PAEDIATRIC ONCOLOGY & OTHER ABSTRACTS

13:30–14:30

Thursday

9 November

Omoding, Abrahams

SURVIVAL ANALYSIS OF CHILDREN WITH ENDEMIC BURKITT LYMPHOMA FOLLOWED BY A CLINICAL CARE PROJECT IN UGANDA

Corey, Casper^{2,3}; Gerdt, Sarah^{2,3}; Krantz, Elizabeth^{2,3}; McGoldrick, Suzanne^{2,3,4}; Omoding, Abrahams¹; Orem, Jackson¹

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Objective To determine overall survival (OS) and treatment response in a patient population with endemic Burkitt Lymphoma (eBL) followed by a comprehensive care project at the Uganda Cancer Institute (UCI).

Methods Every child presenting to the UCI with suspected eBL between July 2012 and March 2015 underwent diagnostic evaluation with excisional biopsy of the tumor, abdominal ultrasound, and chest x-ray. Patients with confirmed eBL were staged according to Ziegler, and received cyclophosphamide, vincristine and methotrexate (COM) every two weeks for six planned cycles. Treatment response was evaluated ≤ 3 months from starting the 6th cycle of COM. Following completion of therapy, patients were followed for up to a year. Kaplan-Meier methodology was used to estimate 1-year OS.

Results Of 214 patients with suspected eBL, 142 (66%) had confirmed eBL. Median age of patients with eBL was 7 years, the majority were male (63%) and 50% had late-stage (C/D) disease. Of the 142 with eBL, 110 (78%) initiated COM, 6% other chemotherapy, and 16% were not treated with chemotherapy (18 died in the first 40 days, 5 were exited). Among 110 patients initiating COM, 73 completed 6 cycles and 37 did not. Of those completing 6 cycles 70% had a complete response, 11% partial response, 3% stable or progressive disease, and 1% relapsed disease after six cycles. There was no response assessment for 15%. Of the 37 patients who did not complete 6 cycles either switched to second line therapy (22%), abandoned treatment (30%), died (27%), changed diagnosis (8%), or lost to follow up (14%) within 6 months of starting treatment. One year OS for the entire cohort with confirmed eBL was 53% (95% CI 43%, 62%). Among patients initiating COM, survival at one year post treatment initiation was 60% (95% CI 50%, 70%). Additional analyses of factors associated with survival are ongoing and will be presented.

Conclusion Survival of patients with endemic Burkitt Lymphoma diagnosed and treated in a low-resource setting remains inferior compared to children treated for sporadic BL in higher resource settings. Despite improvements in clinical care at the UCI, only half of patients with a confirmed diagnosis survived one year. Improved diagnostic capacity as well as more potent, less toxic treatment modalities may help address the poor survival of children with eBL in Africa.

POSTER

Ongondi, Matilda

P267 | DECENTRALIZING CANCER CARE, SIMPLE STEPS?

Ongondi, Matilda^{1,2}; Maina, MD¹; Sylvester, Kimutai²

¹Kenyatta National Hospital; ²Tenwek Hospital

POSTER

SESSION

TWO

16:30–18:00

Thursday

9 November

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Introduction Cancer is the third cause of mortality after infections and cardiovascular disease in Kenya. The country has only two public referral facilities where cancer treatment can be given, the rest being private institutions mostly within the nations' capital city. Cancer care faces many challenges. We present an audit of an initiative to treat selected cancer cases at a Tertiary Hospital in South Rift Valley, Kenya with interest in requirements to make diagnosis and time intervals to diagnosis and to treatment.

Methods The physician would consult a Hemato-oncologist at the referral hospital for a suitable regimen once a patient was diagnosed. The drugs would be ordered per patient to avoid wastage. A record of the patients chemotherapy would be kept in the patients chart, one given to the patient should they present at another facility and a file in pharmacy to plan for future treatments. Patients were reviewed prior to chemotherapy. Those with bulky disease were admitted for their first chemotherapy to monitor for tumour lysis. The demographics of patients that received treatment over the 4 year period was extracted from charts including the diagnosis, stages at presentation, any complications, timelines to diagnosis, treatment and outcomes. The data was collected on an excel sheet reviewed and findings presented in form of mean and proportions. Given the small numbers we could not do statistical analysis.

Results 31 patients were treated with a male to female ratio of 1.2:1. The mean age was 42.6 yrs (range of 4 to 89 yrs) with 38.7% of patients aged 31–40yrs. 45.2% required a surgical intervention other than a lymph node biopsy or bone marrow to aid in confirmatory diagnosis. The most common diagnosis was Kaposi Sarcoma with two African endemic type followed by Non-Hodgkins lymphoma. Patients presented with advanced stage of disease, especially those with Non-Hodgkins lymphoma. Mean time to confirmation of diagnosis was 72 days (range of 3 to 318 days) and 41 days to initiation of chemotherapy. 25% of patients died; one case of overwhelming sepsis and recurrence or advanced disease in the rest. 7 patients were lost to follow up mostly due to financial reasons.

Conclusions Patients were mostly male, young with advanced disease. It is possible to give simple chemotherapy regimens at peripheral facilities in consultation with Hemato-oncologists however one needs a facility that has relevant support services as this alongside finances impacts time to treatment and hence outcome. Institution and departmental support is key in the overall process.

POSTER

WELCOME RECEPTION AND POSTER SESSION ONE

16:30–18:00

Tuesday

7 November

Onibokun, Adenike

P194 | IMPEDIMENTS TO EARLY DETECTION AND MANAGEMENT OF BREAST CANCER AMONG NIGERIAN WOMEN: LESSONS FROM THE FIELD

Onibokun, Adenike^{1,2}

¹University of Ibadan; ²Center for Palliative Care

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Objective Cultural factors and religious beliefs have been reported to influence screening practice in few studies carried out in developed countries (Mitchell, Lannin, Mathew, Swanson, (2002); Lannin, Mathew, Mitchell, Swanson, (2002). However, little is known about the role of cultural factors and religious beliefs in breast cancer screening, and treatment-seeking pathways among Nigerians. This pilot study sort to assess the cultural factors and religious beliefs that influenced breast cancer screening practices and treatment decisions among Nigerian women living with breast cancer.

Methods The study included 150 women whose ages ranged between 26 to 70 years; from Ibo, Yoruba and Hausa ethnic groups. Following approval from the health institutions, participants were interviewed at the oncology clinics, on the cultural factors and religious beliefs that influenced their breast cancer screening practices and treatment-seeking pathway, after diagnosis of breast cancer.

Results 69% of the women were between 41 and 50 years old.

- Majority (76%) were married. 50% were Christians, 33.3% were Moslems, 16.7%) were traditional worshippers.
- Over 40% had tertiary education, while 30% and 20% had secondary and primary education respectively.
- 56% of the cases were detected by the women; 10% by clinical examination and mammography; 15% were symptomatic. Over 63% of the women were in the advanced stage at diagnosis. Places first visited were: hospital (40%); church (30%); hospital and church (60%); chemist (10%); traditional healer (20%).
- Principal components factor analysis results suggested that 60% believed they needed to combine prayers with medical treatment for cancer. We referred to this dimension as “religious intervention with scientific treatment”. Few of them (30%) believed that medical treatment was not necessary because only God can cure breast cancer. We labeled this dimension as “religious intervention in place of scientific treatment”. 20% of the women patronized traditional healers because of their belief in witchcraft. We labeled this as “cultural intervention in place of scientific treatment or religious intervention”

Conclusion Results from this study showed that many of the women were aware of breast cancer. However, their belief systems have been implicated as factors responsible for late presentation and the pathway to treatment-seeking behavior; hence the need for larger community-based intervention studies, where health professionals could work with faith-based organizations to promote breast health and to instill in women a belief that their faith can complement breast cancer treatment.

POSTER

WELCOME
RECEPTION
AND POSTER
SESSION ONE

16:30–18:00

Tuesday

7 November

Onibokun, Adenike

P195 | NOT ALL MEDICINES COME IN BOTTLE: EFFICACY OF COGNITIVE-BEHAVIOURAL THERAPY IN CANCER MANAGEMENT

Onibokun, Adenike¹

¹University of Ibadan / Center For Palliative Care

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Objective Whereas studies from industrialized countries have shown that psychological methods have potentials for alleviation of cancer pain, such methods have not been widely recognized and applied in Nigeria, where a rising incidence of cancer has been noted. This study examined the effects of a combination of cognitive – behavioral therapy (CBT) on pain intensity (PI), occurrence and control of negative thoughts (OCNT) in response to pain; and on overall quality of life (QoL) of people with cancer.

Methods Out of 120 patients with breast cancer, attending the palliative care unit and the surgical oncology clinics of University College Hospital, Ibadan, 90 were randomly selected. All subjects were receiving standard medical care. Eligibility criteria included: willingness to participate in the study throughout the period; regular attendance of palliative care Unit/surgical oncology clinic for five consecutive weeks; physical suitability; positive histological report; persons who had 2nd, 3rd, or 4th stages of breast cancer; and those that fell within the ages of 20–60 years.

Assessment instruments were: Brief Pain Inventory (BPI); Inventory of Negative Thoughts in Response to Pain (INTRP); and the Functional Assessment of Cancer Therapy-General (FACT-G) scale. Pre-test post-test control group quasi-experimental research design was utilized. Subjects were randomly assigned to experimental groups I and II and a control group. Experimental group I was exposed to relaxation and guided imagery(R&GI), while experimental group II received training in cognitive restructuring(CR), in addition to R&GI. Control group were not offered CR interventions. The effects of CBT were tested on three outcome variables: PI; OCNT and QoL, both among the three groups and between the two experimental groups, using Analysis of Variance and T-test, respectively.

Results Findings revealed that: subjects who received enhanced care (CBT) experienced lower PI than the control group. They perceived significantly fewer OCNT as compared with the control group, their health- related QoL were better enhanced as compared with those who did not receive CBT. Subjects in experimental group II who had an additional benefit of CR training, experienced fewer OCNT than those in experimental group I. However, there was no significant difference in PI and QOL between experimental groups II and I.

Conclusion In line with previous studies, our findings indicated that CR interventions have strong potentials to play a significant role in the control of pain, and in the improvement of the overall QoL of people living with cancer. Based on these, necessary suggestions were made for further studies.

POSTER

POSTER SESSION TWO

16:30–18:00

Thursday

9 November

Onimode, Yetunde A

P390 | RADIOACTIVE IODINE-131 THERAPY OF THYROID CANCER AT A SUB-SAHARAN TEACHING HOSPITAL

Onimode, Yetunde A^{1,2}; Afolabi, Adefemi^{1,2}; Osifo, Bola; Adedapo, Kayode^{1,2}
¹University of Ibadan; ²University College Hospital

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Background Nuclear Medicine was introduced as a medical specialty in the authors' country ten years ago. Since then, it has been incorporated into the management of differentiated thyroid cancer at this Centre. Thyroid cancer is the other main indication for patient referral for Nuclear therapy with iodine-131; the other being primary hyperthyroidism. Iodine-131 helps in staging, therapy, restaging after therapy, prognosticating, and performing disease surveillance. Iodine-131 therapy aims to ablate residual thyroid tissue and/or metastases after total thyroidectomy.

Aim To review I-131 therapy of papillary and follicular thyroid cancer from 2006–2016 at a tertiary hospital in sub-Saharan Africa.

Materials and Methods A retrospective analysis of patients' records was performed. Patient parameters and therapy records were extracted.

Results 78 treatment sessions were observed in this period to patients aged 13–78 years (average of 43 ± 13.23 years). In 59 of these sessions, the patients had papillary thyroid cancer, while 20 sessions were performed for follicular thyroid cancer. I-131 administered ranged from 27.8–330 mCi (average of 125.6 ± 47.36 mCi). In all, 57 patients were treated in this 10-year period, with several receiving multiple treatments.

Conclusion Figures presented do not represent the complete picture of differentiated thyroid cancer in the country, with a population of over 170 million. The modality of I-131 radioablation is currently underutilized in this country.

PRESENTATION

Onyango, Noel

MYCN EXPRESSION DEFINES A NOVEL RARE SUBTYPE OF MYC-NEGATIVE BURKITT LYMPHOMA

**CANCER
BIOLOGY**

11:00–12:30

Thursday

9 November

Onyango, Noel^{1,2}; Leoncini, Lorenzo¹; Othieno-Abinya, Nicholas²; Ambrosio, Maria Raffaella¹; Nyagol, Joshua²; Mundo, Lucia¹
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Introduction MYC is the most commonly altered oncogene in human cancer. Its deregulation through the t(8;14)(q24;q32) is the genetic hallmark of Burkitt lymphoma (BL), the commonest pediatric cancer in Africa. MYC encodes for a transcription factor with functions shared by other proteins belonging to the same family, including MYCN, MYCL1, and MYCS. Noteworthy, MYC and MYCN can partially compensate and substitute for each other, controlling their expression via auto-regulatory loops. **Methodology;** We studied BL cases by IHC and FISH (1) to assess the correlation between MYC rearrangement and MYC protein expression at immunohistochemistry (IHC), (2) to characterize cases lacking MYC expression and or rearrangement. In cases lacking MYC expression, we evaluated MYCN expression by qPCR and IHC and the genetic profile by next generation sequencing NGS. **Results;** A total of 90 cases were studied, by FISH 88/90 cases (97.8%) showed t(8;14)(q24; q32) translocation and At IHC, 83/90 (92%) presented with intense and diffuse MYC expression. In the 7/90 (8%) cases lacking MYC protein expression, MYC mRNA levels were significantly lower than those recorded in classic MYC-positive BL ($p=0.006$), and lower than those observed in normal lymph-node in 5/7 (71%) cases. We then explored MYCN expression by IHC and found that 0/83 MYC-positive vs. 6/7 MYC-negative cases showed clear MYCN expression at IHC; consistently, 0/3 MYC-positive vs. 6/7 MYC-negative cases showed significant levels of MYCN mRNA at qPCR ($p<0.001$). Surprisingly, we found that silencing of MYC gene in Namalwa and LCL cell lines by shRNA resulted in significant up-regulation of MYCN mRNA and protein ($p<0.0001$). Thereafter, by ultra-deep targeted sequencing of 409 cancer associated genes, we found 239 single nucleotide variants (SNVs), affecting 108 genes in 4 MYC-/MYCN+ cases. Among others we found genes previously found to be mutated in BL (MYC, EZH2, FGFR3, RET, ARID1A, PARP1, PIK3R1, NOTCH2, CDKN2A/B, and CDC73) or not (ALK, EPHA3, EPHA7, ETV1, IDH1, PBX1, PDGFRA/B, ROS1, and TAL1). MYC and MYCN were affected by 97 and 37 SNVs, respectively; 33 and 13 were predicted to be damaging for the protein structure in MYC and MYCN, respectively. All cases presented with at least 9 SNVs in MYC and 3 in MYCN, including at least 1 predicted as damaging. **Conclusion** We described for the first time a new rare subgroup of MYC-/MYCN+ BL and identified SNVs not previously reported in BL. The potential clinical relevance of this rare cases needs to be addressed in larger studies.

POSTER

WELCOME
RECEPTION
AND POSTER
SESSION ONE

16:30–18:00

Tuesday

7 November

Onyeka, Stephen

P438 | EVALUATION OF *CANARIUM SCHWEINFURTHII* OIL SUPPLEMENTATION FOR CANCER CHEMO-PREVENTIVE POTENTIAL IN N-METHYL-N-NITROSOUREA-INDUCED COLON CARCINOGENESIS IN MALE WISTAR RATS

Onyeka, Stephen¹

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The reported rich cancer chemopreventive polyphenol profile of *Canarium schweinfurthii* pulp oil suggests its potential in the chemoprevention of chemically induced cancer of different sites, including the colon. The present study was carried out to evaluate the cancer chemopreventive effects of different levels of *Canarium schweinfurthii* pulp oil supplementation on N-methyl- N-nitrosourea (MNU) induced colon cancer in male wistar rats at 2.5%, 5% and 10% levels. Ten (10) weeks of intra-rectal instillation with MNU and concomitant feeding on *Canarium schweinfurthii* oil – supplemented diets, caused a significant ($p < 0.05$) and dose-dependent decrease in the levels of carcinoembryonic antigen (CEA) and malondialdehyde (MDA), but elevated levels of catalase (CAT) and superoxide dismutase (SOD) activities in the major organ homogenates. Whereas the photomicrograph of the colon of MNU control showed vacuolation and metaplasia, that of the normal and 10% *Canarium schweinfurthii* oil supplemented diet control groups showed normal mucosal features. These findings suggest that **Canarium schweinfurthii** oil has chemopreventive effect in colon carcinogenesis.

POSTER

POSTER SESSION TWO

16:30–18:00
Thursday
9 November

Onyeka, Tonia

P366 | MYTHS AND MISCONCEPTIONS COMPLICATING PAIN MANAGEMENT IN SUB-SAHARAN AFRICA: A PHENOMENOLOGICAL APPROACH

Onyeka, Tonia¹; Aniebue, Uzochukwu²; Ugwu, Innocent²; Agom, David³; Yakubu, James⁴; Schwartz, Amanda⁵

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Background Pain is one of the major stressors that most patients with acute and chronic illnesses experience. Unfortunately, pain management is challenged with some barriers. Inadequate knowledge of pain and its treatment among healthcare professionals is one of these barriers. Evidence shows that unfounded beliefs, myths and misconceptions about opioid use add to barriers to optimum pain control.

Objectives This study aims at ascertaining the myths and misconceptions associated with the concept of pain management and opioid use among healthcare professionals practicing in Sub-Saharan Africa, with a view to determining impediments to the practice.

Methods Participants attending a Pain training session were required to complete a validated 35-item Likert-type questionnaire with statements made concerning opioids and the concept of pain.

Results Ten most common myths/misconceptions in relation to the concept of pain and opioids were identified. Furthermore, of the 266 respondents, seventy-three (27.4%) respondents had satisfactory knowledge, one hundred and seventy-three (65.0%) had fair but unsatisfactory knowledge and twenty (7.5%), had poor knowledge of the concept of pain while fifty-one (19.2%) respondents had satisfactory knowledge, one hundred and fifty-four (57.9%) had fair but unsatisfactory knowledge and sixty-one (22.9%) had poor knowledge of opioids. Overall, most respondents had unsatisfactory knowledge of opioids, pain and pain management.

Conclusion Unsatisfactory knowledge of opioids and the concept of pain brought about by several myths and misconceptions is a major constraint to analgesic use in general and opioid use by healthcare professionals, practicing in a Sub-Saharan African country like Nigeria, for the management of their patients' pain.

PRESENTATION

Oodit, Ravichund

ENHANCING RECOVERY AFTER ELECTIVE COLORECTAL SURGERY

Oodit, Ravichund¹

¹Groot Schuur Hospital / University of Cape Town

**SITE SPECIFIC
CANCERS
& OTHER
ABSTRACTS**

13:30–14:30

Friday

10 November

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Background Colorectal cancer is the third leading cause of cancer worldwide. Surgery, the first line of treatment is associated with significant postoperative complications and prolonged length of stay. Enhanced Recovery After Surgery (ERAS) is an evidence based, patient centered team approach that has reduced complications rates and hospital stay by 50% in developed countries. The aim of this study is to determine if implementation of the ERAS program can improve perioperative care in patients undergoing elective colorectal surgery in a public health care setting.

Method This pre-post intervention study was conducted at a public sector tertiary hospital in Cape Town, South Africa, between September 2015 and January 2017. The intervention included the establishment of a dedicated ERAS team (patient, surgeon, anesthetist, nurse coordinator, a dietician, and a physiotherapist) and the implementation of a standardized perioperative care pathway. The latter included 22 evidence-based patient management guidelines. Patient demographics, ASA, P-POSSUM and MUST scores, stage at diagnosis, complication rates, length of hospital stay and date the patient met discharge criteria were recorded pre -and post-intervention. In addition, adherence to the ERAS guidelines were measured. The data was entered into the ERAS Interactive Audit System database and analyzed.

Results There were 50 patients in the pre-intervention and 54 patients in the post-intervention groups. Both groups were comparable for age, sex and stage of presentation. Median length of stay decreased from 9 to 7 days. Reductions were recorded in rates of: major complications (12% to 9.3%), minor complications (34% to 21.5%) and readmissions (2.7% to 1.4%). Compliance to the ERAS guidelines was 67%.

Conclusion These early results demonstrate that the ERAS program has the potential to improve the outcomes of patients undergoing elective colorectal cancer surgery in public sector settings in developing countries.

POSTER

POSTER SESSION

TWO

16:30–18:00

Thursday

9 November

Opoku, Samuel

P367 | ASSESSMENT ON THE QUALITY OF LIFE OF BREAST CANCER PATIENTS UNDERGOING RADIOTHERAPY IN GHANA

Opoku, Samuel¹; Vanderpuye, Verna¹; Opong-Siaw, Doris¹; Adesi-Kyei, Kofi¹
¹University of Ghana

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World Health Organization defines QoL as an individual's perceptions of their position in life, in the context of the cultural and value systems in which they live and in relation to their goals, expectations, standards and concerns make up their QoL. The study was to assess factors that contribute to the quality of life of breast cancer patients undergoing treatment to determine the overall quality of life and to suggest ways and methods to improve the situation

Method Ninety breast cancer patients referred to the Oncology Unit were conveniently sampled within a three month period. Quality of life assessment was performed using the Functional Assessment of Cancer Therapy (FACT-B) - Specific Scale for breast cancer version 4. Data was analyzed using Statistical Package for Social Sciences (SPSS) version 16.

Results The peak incidence age was between (56-65) years, 60% had triple modality treatment; thus had undergone surgery and were on chemotherapy and radiotherapy. Seventeen percent had surgery and were on chemotherapy only, 10% had surgery and were on radiotherapy only, 10% had surgery and only one patient was on chemotherapy and radiotherapy. The scores for the quality of life domains were General Emotional (GE) well-being (18.8 ± 8.4), General Physical (GP) well-being (16.5 ± 6.1), General Social (GS) well-being (14.3 ± 7.0) and General Functional (GF) well-being (10.9 ± 5.7). Seventy percent of the patient had stable quality of life, 10% had poor quality of life and 20% had good quality of life.

Conclusion Considering the quality of life domains or subscale scores and the overall quality of life scores of the patients, it can be concluded that there is no significant difference ($p > 0.05$) in the quality of life of breast cancer patients who receive treatment at the Unit.

POSTER

POSTER SESSION TWO

16:30–18:00
Thursday
9 November

Oppong, Bridget

P238 | ARE THERE RACIAL DIFFERENCES IN MAMMOGRAPHIC DENSITY AMONG WOMEN PRESENTING FOR BREAST CANCER SCREENING?

Adams-Campbell, Lucile²; Coleman, Tesha⁵; Dash, Chiranjeev²; Li, Yinan³; Makambi, Kepher³; Makariou, Erini⁴; O'Neill, Suzanne²; Oppong, Bridget^{1,2}; Pien, Edward⁴

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³Georgetown University; ⁴Georgetown University Hospital; ⁵Capital Breast Care Center

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Background Breast density can impact the visualization of mammography and is one of the strongest and most consistent risk factors for breast cancer. Women with the highest mammographic density (greater than or equal to 75%) are at a 4–6 fold increased risk of developing breast cancer compared with women with least dense tissue. The vast majority of the studies investigating breast density and cancer risk have been conducted among White women, with limited inclusion of minority populations.

Methods We reviewed breast density recorded at the initial mammographic screening study in women presenting to the Capital Breast Care Center (CBCC) and Georgetown University Hospital (GUH) from 2010 to 2014. Patient demographics including race, age at screening, education and menopausal status were abstracted in addition to body mass index (BMI). From imaging reports, we recorded the Breast Imaging-Reporting and Data System (BI-RADS) density categories: 1- “fatty”, 2- “scattered fibroglandular densities”, 3- “heterogeneously dense” and 4- “extremely dense”. Multivariable logistic regression was used to obtain odds ratios (ORs) and the corresponding 95% confidence intervals (CIs) for the association between the selected variables and breast density. P-values less 0.05 were considered significant.

Results After combining the data from the two screening sites (CBCC and GUH), density categorization was recorded for 2,146 women over the five-year period, with 940 (43.8%) Black, 893 (41.6%), Hispanic and 314 (14.6%) White. Analysis of subject characteristics by low density (BI-RADS categories 1 and 2) and high density (BI-RADS categories 3 and 4) show that high category is observed in younger, Hispanic, nulliparous, premenopausal and non-obese women (P-values <.0001). Obese women are 70% less likely to have high breast density compared to non-obese women. Being Hispanic, premenopausal, and non-obese were predictive of high mammographic density on logistic regression.

Conclusion In this study comparing the mammographic densities of women presenting for breast cancer screening, we show that Hispanic women have the highest breast density, but lower obesity. Also, BMI was negatively correlated with mammographic density along with younger age at screening and premenopausal status. These data are valuable as the breast density and cancer interplay may be a crucial element in addressing racial/ethnic disparities in breast cancer outcomes. Efforts are especially needed to increase inclusion of Hispanic women in such research as they may have higher breast density than previously reported and are even less likely than Blacks to be studied.

POSTER

WELCOME RECEPTION AND POSTER SESSION ONE

16:30–18:00

Tuesday

7 November

Orang'o, Omenge

P108 | POST-LEEP FOLLOW-UP BY VIA AND PAP SMEAR IN HIV-POSITIVE AND HIV-NEGATIVE WOMEN IN WESTERN KENYA

Cu-Uvin, Susan³; Itsura, Peter¹; Orang'o, Omenge¹; Rositch, Anne²; Tao, Liu³; Tonui, Philippe¹

¹Moi University School of Medicine; ²Johns Hopkins Bloomberg School of Public Health; ³Brown University

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Objectives Studies have suggested that HIV-positive women undergoing excisional treatment for cervical intraepithelial neoplasia (CIN) have higher failure rates compared to HIV-negative women. However, most studies have been conducted outside of Africa, were retrospective, or were prior to the era of highly active antiretroviral therapy (HAART) leaving much to be identified for resource-limited settings with high prevalence. Therefore, this study compared the results of repeat VIA and Pap smear screening in HIV-positive and HIV-negative women six months after receiving LEEP for pathology confirmed CIN2+ in Eldoret, Kenya.

Methods HIV-positive (n=75) and HIV-negative (n=75) women aged >18 years presenting post-LEEP (≥6 months) for biopsy-confirmed CIN2+ were recruited from the cervical cancer screening and treatment clinic at Moi Teaching and Referral Hospital (MTRH). Relevant socio-demographic and medical history was collected. All subjects underwent VIA and Pap smear, with subsequent colposcopy/biopsy for women positive VIA or abnormal Pap smear (ASC-HG, or LSIL or worse)

Results The median age of the enrolled population was 37 years, 76% were currently married with 97% of the HIV positive on combination antiretroviral therapy. Six months after LEEP, only 4% of HIV-negative and 5% of HIV-positive patients were VIA-positive. At the same time, 4% and 9% of HIV-negative women had low-grade (ASCUS/LSIL) and high-grade abnormalities (HSIL+), respectively. In HIV-positive women, 11% had low-grade and 12% had high-grade abnormalities.

Conclusions In regions lacking consistent cervical cancer screening, HIV-positive women receiving HAART with good CD4 counts demonstrate comparable risk of treatment failure as HIV-negative women, emphasizing a need for sensitive surveillance in both groups. Despite wider availability and better cost effectiveness, the risks outweigh the benefits for VIA as a post-LEEP treatment surveillance tool for women with high grade lesion. These findings suggest that Pap smears are superior to VIA for post-LEEP follow up in resource limited settings.

PRESENTATION

Orem, Jackson

IMPLEMENTING RADIATION THERAPY IN LOW-RESOURCE SETTINGS: CHALLENGES AND ROAD FORWARD

QUALITY TREATMENT IN LOW RESOURCE COUNTRIES

(cont.)

14:40–16:30

Tuesday

7 November

Bolouki, Shawn²; Ddungu, Henry¹; Karsan, Farrok²; Orem, Jackson¹
¹Uganda Cancer Institute; ²Aga Khan University Hospital Nairobi

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The use of radiotherapy in developing countries is slowly gaining momentum but the gains are accompanied by some pitfalls. The breakdown of teletherapy (cobalt 60) machine in Uganda is an example of the challenges to be considered while expanding access to treatment. This was a major test to the country and the Uganda Cancer Institute the agency of government responsible for provision of cancer services. The development caused a national and international outcry, attracting widespread condemnation of government. The unprecedented response to this crisis was based on importance this old piece of equipment in Kampala was playing in the entire region (Kenya, Tanzania, Rwanda, Burundi, Democratic Republic of Congo and Southern Sudan).

However the handling of this crisis has shown how to turn a misfortune into an opportunity given the many lessons learnt. In this paper we highlight the key approaches taken in three steps to mitigate the challenges. First was safe decommissioning of old source, infrastructural rehabilitation, security upgrade and procurement of new equipment. The second step was urgent restoration of services by ensuring ongoing provision of treatment to patients. Finally the reassurance of the public and building confidence in the services offered to the community. All these steps were taken concurrently in a collaborative manner within country by multisectoral and multi-agency national task force, Secondly within the region through regional support from non-state actors especially Aga Khan University Hospital Nairobi (AKUHN) and thirdly international multilateral agency technical and material support spear headed by International Atomic Energy Agency (IAEA).

In conclusion the breakdown of Uganda's radiotherapy machines has provided lessons that are important in the drive for expansion of radiotherapy services in Africa. In particular that benefit of investments in basic cancer treatment equipment transcends national boundaries. Secondly that is possible to limit potential impact of major crisis through in country, regional and international collaborative efforts. Further that the primary focus should be on the needs of our community of patients and the public. Finally this should provide grounds to encourage pooled regional infrastructure investments for tackling NCD's such as the East Africa's Centres of excellence for skills and tertiary education project which is being undertaken by the member states of the East African Community.

POSTER

WELCOME
RECEPTION
AND POSTER
SESSION ONE
16:30–18:00
Tuesday
7 November

Oswald, Habyarimana

**P087 | PTEN MUTATIONS AMONG GASTRIC TUMOUR PATIENTS
FROM RWANDA, A POTENTIAL FOR TARGETED THERAPY**

Oswald, Habyarimana¹

¹University of Rwanda

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Background Even though Gastric cancer incidence has been decreasing in certain parts of the world, it remains the third leading cause of morbidity and mortality worldwide. The target therapy in gastric cancers which is better compared to standard cytotoxic regimens is still a challenge in developing countries. In western countries, 7–17% of gastric cancers are HER2 positive and thus suitable candidates for anti-HER2 therapy. In Rwanda we wanted to identify which are common targetable mutations in gastric cancers that could be new options for treatment.

Methods From August 2015 to July 2016, we enrolled every patient coming to esophago-gastroduodenoscopy with signs and symptoms of gastric cancer and endoscopically confirmed tumor. Biopsies were taken, 57 were sent for histopathology evaluation to Centre Hospitalier Universitaire de Kigali and then to Dartmouth Hitchcock Medical Center for genetic analysis where DNA was extracted from fixed tissues using the QIAamp DNA Formalin-Fixed Paraffin-embedded Tissue Kit and then processed. A literature search on pharmacologic inhibitors of PTEN and gastric cancer was performed.

Results For 57 biopsies confirmed malignant, 22 specimens (38.5%22/57) could pass for next generation sequencing. Mutations were found in 9 biopsies 41% (9/22) of the sequenced specimens. TP53 was most common mutation 50%. Up-to-date PTEN 25% was the targetable mutation, other mutations were ERBB4 25%, SAMD4 25%, FBXW7 12.5%, KRAS 12.5%. PTEN inhibitors everolimus and temsirolimus have been shown in phase I trials to have xx response rates in some gastric cancers but numbers are small.

Conclusion This pilot project is a big step in gastric cancer exploration in Rwanda: Next Generation Sequencing on gastric specimens is feasible. Few mutations were found in Rwandan specimens. PTEN mutation was a potential for targeted therapy. The available drug: Everolimus and temsirolimus like others being studied targeting PTEN mutation has not yet been used specifically for gastric cancer. A larger study to determine the incidence of PTEN mutations and a clinical trial on therapy of PTEN mutation in gastric cancer patient is warranted.

Limitations Limited funds then small sample size, Lack and poor quality of the equipment used to take biopsies, causing insufficient tissue and DNA quality for next generation sequencing were the main challenges. No current available targeted therapy specifically for PTEN mutation in gastric cancer.

PRESENTATION

Othieno-Abinya, Nicholas Anthony HODGKIN'S DISEASE IN AFRICA

Othieno-Abinya, Nicholas Anthony¹

¹University of Nairobi

LYMPHOMAS

11:00–12:30

Thursday

9 November

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Hodgkin's disease is a B cell lymphocytic lymphoma whose pathological hallmark is the presence of Reed-Sternberg cells, or their variants. It was first described by Thomas Hodgkin in 1832, and the characteristic cells were first described by Dorothy Reed in 1902 and Carl Sternberg in 1898. The first coherent classification was in 1944 by Jackson and Parkar who subclassified it into granuloma, paraganuloma and sarcoma. Lukes and Buttlar reclassified it in 1966, but this was soon overtaken by the 1966 Rye classification. This classification was only slightly modified by the current WHO Classification with the advent of immunohistochemistry. The cause of the disease remains unknown, and the malignant R-S cell and its variants are believed to represent a monoclonal outgrowth of late germinal or postgerminal centre B cells that have lost their capacity to express immunoglobulins through crippling mutations. They are also thought to represent natural hybridomas produced during the course of malignant lymphoproliferative disease from fusion of the putative Hodgkin's (L and H cell) with reactive B- and/or T- cells. In high-income countries the peak age is between the 15 and 30 years, and a second smaller peak between 50 and 70 years. Reports from low-income countries show a single peak at about 17 years. The prognosis of the disease depends on the pathologic subtype, disease stage, and factors currently included in the International Prognostic Factor Project Score. Where resources are available, early stage HL is curable in 90%–95% of cases. The C-MOPP/LOPP/CHLVPP protocols, popular up to the early 1990s gradually gave way to ABVD and BEACOPP. Several salvage regimens have been employed with, or without high-dose chemotherapy with haematopoietic progenitor cell transplant with good outcomes. Brentuximab vedotin and other newer agents are now used second-line for relapsed/refractory cases, and immune checkpoint inhibitors are showing promise. Not much has been published on HL from Africa. In a study we published in 2005 87.4% of the patients were aged < 20 years. Patient numbers were well balanced between the various histologic subtypes, with those with mixed cellularity and lymphocytic depletion having poorer performance status at the time of diagnosis, though histologic subtype did not significantly correlate with disease outcome.

Conclusion There is lack of published data on Hodgkin's disease from Africa. The epidemiology of the disease in the continent differs from that seen in high-income countries.

PRESENTATION

Othieno-Abinya, Nicholas Anthony

HOW LONG WILL CONVENTIONAL CANCER CHEMOTHERAPY SURVIVE IN THE ERA OF TARGETED THERAPIES?

TARGETED THERAPIES

08:25–09:25

Wednesday

8 November

Othieno-Abinya, Nicholas Anthony¹

¹University of Nairobi

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In 1942 Louis Goodman and Alfred Gilman induced regression of non-Hodgkin's lymphoma by the administration of mustine hydrochloride. Thereafter, combinations of nitrogen mustard with glucocorticoids induced significant responses in lymphoid neoplasms. The introduction of antimetabolites in early 1960s led to cure of acute leukaemias. Subsequently, the development and incorporation into clinical use of anthracyclines, epipodophyllotoxins, platinum compounds and taxanes in combinations, including with antimetabolites and alkylating agents induced cures and palliation for many neoplasms. Targeted cancer therapy was first used in the 1970s when tamoxifen was used to treat hormone-dependent breast cancer. Later, all-trans-retinoic acid was used in therapy of acute promyelocytic leukaemia. In late 1990s trastuzumab was successfully used in treatment of metastatic, Her2-overexpressing breast cancer. These therapies include small molecule tyrosine kinase inhibitors, monoclonal antibodies against epidermal growth factor receptors belonging to the ErbB family of receptor tyrosine kinases, angiogenic inhibitors, inhibitors of cell cycle machinery. They are directed against specific molecules that are overexpressed or where certain unique factors are aberrantly expressed in cancer cells. Compared with traditional chemotherapeutic drugs, these targeting drugs are attractive because of high specificity, efficacy, and less side effects. In 1999 Brian Druker developed imatinib for treatment of chronic myeloid leukaemia. Since then, conventional cancer therapy has been side-lined in new cancer drug development. Cancers that have visibly benefitted from these new developments include but are not restricted to chronic myeloid leukaemia, peripheral B cell neoplasms, receptor-positive breast cancer, malignant melanoma, non-small cell lung cancer, gastrointestinal stromal tumours, colorectal cancer and hepatocellular cancer. There is no doubt that BCR-ABL inhibitors have altered the course of chronic myeloid leukaemia for better. There is also no doubt that hormonal agents play a key role in management of hormone receptor positive breast cancer, both in early, and metastatic disease, as do Her2-directed therapies for cancers in which Her2 is overexpressed or amplified. For triple-negative breast cancer, adult soft tissue sarcomas, brain tumours, acute myeloid leukaemia, colorectal and non-small cell lung cancers in the adjuvant setting, conventional chemotherapy remains key in their management. Some cancers like renal cell carcinoma and pancreatic cancer still offering mixed signals in clinical trials. Furthermore, most targeted agents still need a chemotherapy backbone.

Conclusion Conventional cancer chemotherapy may be here to stay.

PRESENTATION

Oudjehih, Messaouda

**TABAC ET CANCERS DES VOIES AERO DIGESTIVES SUPERIEURES:
ETUDE CAS – TEMOINS ALGERIE**

**ENVIRONMENTAL
FACTORS:
PESTICIDES &
OTHER TOXINS**

14:40–16:30

Thursday

9 November

Oudjehih, Messaouda¹; Deltour, Isabelle²; Bouhidel, Mohamed Larbi¹; Schüz, Joachim²; Bounecer, Hocine¹; Leon, Maria E²

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Contexte Une partie considérable de la population algérienne consomme régulièrement les produits de tabac et risque de développer des cancers liés à celui-ci. Cette étude cas-témoins fait état de l'association entre le tabagisme et les cancers des voies aéro-digestives supérieures (VADS) à Batna, Algérie.

Méthodes Les cas incidents des cancers des (VADS) résidents dans la région de Batna étaient identifiés rétrospectivement (2008–2009) et prospectivement (2010–2011) sur la base du registre régional des tumeurs. Chaque cas était apparié à deux témoins, l'un hospitalier et l'autre dans la population générale selon le sexe, l'année de naissance et la commune de résidence. L'information sur la consommation de tabac était recueillie par des entretiens en face-à-face entre 2010 et 2012. Les odds ratios (OR) étaient obtenus par régression logistique conditionnelle.

Résultats L'étude avait porté sur 192 des 241 cas de cancers des (VADS), soit (80%) de cas identifiés et 384 témoins. Les principaux sites anatomiques étaient le nasopharynx (48%), le larynx (26%) et la cavité buccale et l'oropharynx (19%). La consommation du tabac non fumé (OR = 0,97; intervalle de confiance à 95% [IC]: 0,64-1,47) et la consommation actuelle du tabac non fumé (OR = 1,09; IC à 95%: 0,61-1,66) n'étaient pas associées au cancers des (VADS). Une association modeste avec les cancers de la cavité buccale / oropharynx (OR = 1,71; IC 95%: 0,70-4,19) était obtenue. La consommation du tabac non fumé était associée à un OR inférieur à 1 pour le cancer du larynx (OR = 0,45; IC 95%: 0,20-0,98). La consommation actuelle de la cigarette était associée à une augmentation modeste du risque global des cancers des (VADS), avec un dédoublement du risque pour le cancer du larynx (OR = 2,07; IC à 95%: 0,94 -7,68) .

Conclusion Cette étude fournit des preuves modestes d'une association entre l'usage du tabac et les cancers UADT en Algérie, mais le nombre de cas pour les différents sites était faible et les associations semblaient différer selon le site du cancer.

POSTER

Owojuyigbe, Temilola

P268 | MORTALITY IN CHRONIC MYELOID LEUKAEMIA PATIENTS ON IMATINIB: NIGERIAN EXPERIENCE

**POSTER
SESSION
TWO**

**16:30–18:00
Thursday
9 November**

Owojuyigbe, Temilola¹; Bolarinwa, Rahman¹; Salawu, Lateef¹; Akinola, Norah¹; Durosinmi, Muheez¹
¹Obafemi Awolowo University

Correspondence temilolly@yahoo.com

Objective To report on the causes of death in CML patients on Imatinib therapy between 2003 and 2017.

Methods Case notes of all CML patients on Imatinib that died up till end of March 2017 were reviewed for presenting age and disease phase, gender, response to Imatinib and factors influencing survival.

Results Between August 2003 and March 2017, 856 CML patients were enrolled into Imatinib therapy. There were 117 deaths, 64 males and 53 females (M: F = 1.2: 1), age range 13 – 78 (median 39) years, median survival from onset of Imatinib treatment was 24.2 (0.8 – 119.4) months. At presentation; 44 (37.6%), 36 (30.8%), 30 (25.6%) and 7 (6%) were in early chronic, late chronic, accelerated and blastic phases, respectively. Majority (79/117) died of progressive disease (49.6% blastic and 17.9% accelerated) in spite of addition of hydroxyurea and escalation of Imatinib dosage. Thirty (25.6%) patients died at home or in other health facilities and cause could not be ascertained. There were 8 (6.9%) deaths in chronic phase, 3 each from sepsis and RTA; and 2 from Glivec-induced cytopaenias. For financial constraints, only 5 (4.7%) patients had access to 2nd-generation TKIs, and were on the drugs for between 2 and 56 months (median = 18.6). Three of the patients were supplied gratis. The starting dose of Imatinib was 300mg, 400mg and 600mg in 3 (2.6%), 102 (87.2%) and 12 (10.3%) patients, respectively. Median time to achieve CHR on Imatinib was 3 months while median time to loss of CHR was 13 months; 62 (53%) achieved CHR and 55 (47%) never did. Eight (6.8%) patients achieved CCR, 14 (12%) and 5 (4.2%) major and minor cytogenetic remissions, respectively, however, 90 (76.9%) never achieved cytogenetic remission. Only 2 (1.7%) achieved complete molecular remission. Eight (10.3%) patients could afford kinase domain mutation analysis, 4 had no detectable mutations while each of the remaining had M244V, E255K; G250E and a combination of E453K and G250E. Longer survival was associated with presentation in chronic phase ($p = 0.01$), attainment of CHR within 6 months ($p = 0.03$) and achievement of CCR or MCR ($p = 0.03$).

Conclusions A median survival of only 24 months for CML in the Imatinib era with the majority in blastic phase was disappointing. Non-availability of 2nd-line TKIs for patients with early treatment failure due to mutations and/or Imatinib-intolerance was responsible for high mortality. Compassionate donation to patients would be beneficial.

PRESENTATION

CAPACITY BUILDING FOR PATHOLOGY IN AFRICA

11:00–12:30

Wednesday

8 November

Owusu-Afriyie, Osei

CAPACITY BUILDING IN PATHOLOGY – THE KUMASI EXPERIENCE

Owusu-Afriyie, Osei¹; Adjei, Ernest Kwasi¹; Stalsberg, Helge²

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Background Komfo Anokye Teaching Hospital is the second largest national cancer centre in Ghana. It was challenged by the absence of a functional pathology department due to broken down equipment, lack of consumables and only pathologist taking care of both medical school teaching and diagnostic work. The head of the cancer centre asked two pathologists, one from Norway and the other from United States of America this question - 'we have no diagnostic pathology service, can you help us?' Following discussions, an offer of help came from the University Hospital of Norway (UNN). A 5-year plan was put in place to address the issue.

Objective To re-establish a functional diagnostic pathology department in Komfo Anokye Teaching Hospital, Kumasi.

Design The design was to address immediate, medium and long-term problems.

- Immediate plan: after an assessment of needs, 2 technicians were sent to UNN for 3 months to train in slides production. After which slide production restarted at KATH, and the slides sent to UNN for diagnosis.
- Medium plan: two (2) young doctors went to UNN for 4 years of specialty training. It was full time position.
- Long term: on their return, KATH, was accredited to start training doctors in pathology specialty. This is expected to address the shortage of pathologists in Ghana.

UNN continued to offer consultation services to KATH on difficult cases.

Other activities included training in immunohistochemistry and cytology for two histotechnologists. This was aimed at augmenting the diagnostic capability of the unit.

Funding was provided for by Norwegian Governmental Agency for Developmental Cooperation (NORAD), UNN and counterpart funding from KATH. There was huge investment in equipment supply and immunohistochemistry staining.

Result KATH now has a functional surgical pathology department providing services in autopsy, surgical pathology, cytopathology, frozen sections, and limited use of immunohistochemistry. The department has 10 residents at different levels of training.

POSTER

WELCOME RECEPTION AND POSTER SESSION ONE

16:30–18:00

Tuesday
7 November

Pace, Lydia

P128 | IMPACT OF A BREAST CANCER EARLY DETECTION INTERVENTION ON PATIENT VOLUME, DIAGNOSES, AND CANCER STAGE AT HEALTH FACILITIES IN A RURAL RWANDAN DISTRICT

Pace, Lydia^{1,2}; Keating, Nancy^{1,2}; Dusengimana, Jean-Marie Vianney³; Hategekimana, Vedaste⁴; Muvugabigwi, Gaspard⁴; Shulman, Lawrence⁵; Mpunga, Tharcisse⁴

¹Brigham and Women's Hospital; ²Harvard Medical School; ³Partners In Health / Inshuti Mu Buzima; ⁴Ministry of Health; ⁵Abramson Cancer Center

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Background Breast cancer mortality in low- and middle-income countries is high due to late-stage presentations and limited access to treatment. At Butaro Cancer Center of Excellence (BCCOE) in Rwanda, women with breast cancer experience long diagnostic delays and 75% have locally-advanced or metastatic disease at diagnosis. To facilitate earlier presentations of symptomatic disease, systematic early detection strategies are needed. We developed a pilot early detection program in BCCOE's district to determine clinical and health systems impact of such programs and guide potential scale-up.

Methods We randomized HCs to receive training for community health workers in breast health awareness, and training and mentorship for health center (HC) nurses in the evaluation of breast concerns. We established weekly breast clinics at intervention HCs and BCCOE. Seven of 18 eligible HCs were randomized to receive the intervention in April–May 2015, 5 of the remaining 11 were randomized in November–December 2015, and 6 served as controls for the entire study period. We used difference-in-differences analyses to assess changes in HCs' clinical volume and descriptive statistics to examine hospital volume, cancer diagnosis rates, and stage.

Results During the 6 months before the first trainings, an average of 2.1 and 2.2 patients with breast concerns presented monthly to control and intervention HCs, respectively. During the 6 months after the first trainings, 1.5 patients/month presented to control HCs for breast concerns, vs. 7.5 to intervention HCs (difference-in-differences=5.9, $p<0.001$). Following the second trainings, average monthly patient volume rose from 1.6 to 2.3 at control HCs and from 3.0 to 16.7 at intervention HCs (difference-in-differences=13.0, $p=0.01$). Over the intervention's first 18 months, 1189 patients sought care at intervention HCs for breast concerns; 229 of these were evaluated at BCCOE. 15 patients (6.6%) were diagnosed with cancer (incidence rate 11.5/100,000 woman-years); 6 (40%) had early-stage disease. Over the same period, 5 women were diagnosed with cancer from control HCs (incidence rate 4.0/100,000 woman-years). None had early-stage disease.

Conclusions This early detection program significantly increased the number of patients presenting at HCs with breast concerns; many were referred for cancer center evaluation. Although most patients referred by intervention HCs had benign conditions, there were more cancers diagnosed among patients referred by intervention vs control HCs, and a higher proportion had early-stage disease. Scale-up would require substantial investment in provider training and health services to ensure that the highest-risk women are reached and that referred patients receive appropriate care.

PRESENTATION

HIV ASSOCIATED MALIGNANCIES

14:40–16:30

Thursday

9 November

Palefsky, Joel

HPV-RELATED DISEASE IN HIV-INFECTED WOMEN AND MEN: BEYOND THE CERVIX

Palefsky, Joel

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Human papillomavirus (HPV) is a sexually transmitted virus, and more than 75% of all men and women acquire at least one genital HPV type at some point during their lifetime. HPV is spread through skin to skin contact, and may be transmitted through all forms of mucosal and genital skin contact. Most HPV-infected men and women are never diagnosed with HPV-associated pre-cancers or cancers, since cell-mediated immunity controls viral infection in almost all healthy individuals. HIV-infected men and women are at increased risk of persistent oral and anogenital HPV infection due to HIV-associated attenuation of systemic immune response, tissue-level immune perturbation and possibly direct HIV-HPV interactions. Effective antiretroviral therapy (ART) likely has some beneficial effect on the natural history of HPV infection to pre-cancer and ultimately cancer, but that benefit is limited, and the incidence of HPV-associated cancers has increased, not decreased since the introduction of ART. Cervical cancer is the most important HPV-associated cancer in terms of worldwide morbidity and mortality. However, HPV-associated cancers occur at virtually all genital sites, and affect both men and women. The incidence of anal cancers is greatly increased in HIV-infected men who have sex with men (MSM) and to a lesser extent women and men who have sex with women (MSW) compared with their HIV-uninfected counterparts. HIV-infected men are also at increased risk of penile cancer, oral cancer and possibly ocular squamous cell cancers. HIV-infected women are at increased risk of anal cancer, vulvovaginal cancer and oral cancer. Key messages are that the incidence of these HPV-associated cancers remains increased in the ART era; that some of these cancers, including cervical and possibly anal cancers, may be preventable through screening and treatment of cancer precursor lesions; and that HPV vaccination is safe and strongly recommended for HIV-infected men and women, particularly among those younger than 26 years of age, and ideally prior to onset of sexual activity.

POSTER

Parker, Samar

P063 | PREVENTION AND CONTROL OF CANCER

**WELCOME
RECEPTION
AND POSTER
SESSION ONE**

16:30–18:00

Tuesday

7 November

Parker, Samar¹

¹Cancer Aid Society

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I have campaigned across the country and covered 60 cities of India (like Uttar Pradesh, Rajasthan, Himachal Pradesh, West Bengal, Kerala, and Tamil Nadu) on tobacco control and healthy dietary habits.

Organizing Awareness programs for the prevention and control of tobacco integrated with cancer and other non communicable diseases within the community.

Focusing on the philosophy of catching them early I targeted the students aged 4 to 17 years.

More than 1,00,000 students/youth/adult were covered in over 2200 campaigns organised in different Institutions and making them Tobacco Free Zones.

Mass awareness and focus group activities at Panchayat level to the rural population. Made more than 2500 institutions tobacco free zones.

Educated the above through interactive Lectures/Seminars/Counselling session/Signature Campaign/Painting Competition/Nukkad natak activity showcasing the ill effect of tobacco, new amendments in COTPA Act, health and hygiene program, which has also in turn had helped in improving the life style of the people interacted, Also making them aware about the warning sign and symptoms of few cancers so that early deduction of cancer might be done.

Asking to pledge the student/adults not to be involved in any ill practice of using tobacco and alcohol product. At the same time motivating them to force their parents /elders through love and care to stop using any and every tobacco product, Motivating them to visit the centers, making them understand “Your Time your Presences will bring smile to them.”

PRESENTATION

Parkin, Max CANCER SURVIVAL IN AFRICA

IMPACT OF LATE PRESENTATION ON CANCER SURVIVAL IN AFRICA

07:15–08:20
Thursday
9 November

Parkin, Max¹
¹African Cancer Registry Network

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During 2017, the Unit of Cancer Surveillance at IARC has carried out the third study of cancer survival in low and middle income countries, called SURV-CAN 3.

Members of the African Cancer Registry Network in sub-Saharan Africa were invited to participate. They were required to follow up a sample of registered patients diagnosed in 2008-2013 (between 300 and 1200) to the end of 2016. These were samples of cancer cases at the major sites (with a minimum number per site of 25 cases).

Only one centre was able to conduct passive follow up (linkage of the registry database with mortality records from vital statistics). For the remainder, active follow up was necessary for cases not known to have died, or for whom date of last contact was before the closing date. Follow up was mainly by telephone, home visits were only attempted for those cases not traceable by this means.

17 cancer registries in sub-Saharan Africa participated, a huge improvement on the four participants in SurvCan-2. Loss to follow up is always a problem in low and middle income countries; as an approximate guide, a loss of fewer than 20% is considered acceptable. Most of the participants were able to achieve this level.

Analysis of the results is still ongoing; some preliminary findings will be presented.

PRESENTATION

Parkin, Max

DISCUSSION OF THE ROLE OF STAGING IN NATIONAL CANCER PLANNING AND SURVEILLANCE

ANATOMICAL STAGING: TERMINOLOGY & ESSENTIAL TNM

14:40–16:30

Wednesday

8 November

Parkin, Max¹

¹African Cancer Registry Network

Correspondence max.parkin@ctsu.ox.ac.uk

Survival from cancer is the most important goal of treatment, so its measurement should inform about the success (or otherwise) of this component of National Cancer Control Programmes (NCCPs). But survival as measured by cancer registries is the average for the entire population and is determined by many factors, not only the quality of treatment. Not all cancer patients have access to, seek, or receive treatment. For those who do, the extent – stage – of disease at diagnosis is by far the most important determinant of survival. Screening programmes, or campaigns to achieve early diagnosis by improving awareness and access, are therefore important components of NCCPs. Complete and accurate information on stage of disease is therefore important in planning NCCPs, and evaluation the success of early diagnosis, screening and treatment.

PRESENTATION

Parkin, Max

ESTIMATING CANCER IN AFRICA IN GLOBOCAN 2016

Parkin, Max¹

¹African Cancer Registry Network

**CANCER
REGISTRIES
(continued)**

14:40–16:30

Tuesday

7 November

Correspondence max.parkin@ctsu.ox.ac.uk

The aim of the GLOBOCAN 2016 project is to provide estimates of the incidence, mortality and, in a second phase, prevalence DALYs, for the major types of cancer, for every country in the world for the year 2016. The estimates are prepared separately for each sex, and by age groups. For the first time, “uncertainty intervals” of the estimates are included, which incorporate not only statistical precision, but also data quality.

For Africa, GLOBOCAN 2016 uses recent data available from Cancer Incidence in Five Continents Vol. XI, from the database of the African Cancer Registry Network, or available on the Internet. For Africa, the GLOBOCAN 2016 estimates are almost entirely based on cancer registry data (both incidence and survival). Only four countries are included in the WHO mortality databank, so that for the others mortality is estimated from incidence (using survival data) as will be cancer prevalence and DALYs in the second phase.

Incidence data are classified into 6 categories, to provide a guide to the robustness of the estimation of the national rates, from “A” (High quality national data or high quality regional (coverage greater than 50%)) to “G” (Data on relative frequency of different cancers in a population-based series). There has been an improvement in this average quality grade since Globocan 2012, with an increase in the number and quality of cancer registries in Africa, nevertheless, there were still no data available for 18 countries (20 in 2012).

POSTER

Pascal, Birindabagabo

**P308 | VARIATION OF CANCER PREVALENCE IN RWANDA:
DOES PROVINCIAL DEPRIVATION STATUS MATTER?**

**POSTER
SESSION**

TWO

16:30–18:00

Thursday

9 November

Pascal, Birindabagabo¹; Francois, Uwinkindi

¹Ministry of Health

Correspondence pbirindab@gmail.com

Background The global health system has recognized cancer diseases as one of the leading cause of morbidity and mortality nowadays. As a response, the global health community in general and many countries have deployed considerable efforts prevention, care and treatment to address the different concerns caused by the diseases. Although evidences show that poor countries accommodate more cancer burden, there are dearth of literature on the relationship between cancer and poverty mainly using geographic spatial unit such as province. This paper seeks to investigate first the variation of cancer burden within provinces in Rwanda. It also assesses the pattern between cancer prevalence and the provincial deprivation status proxy by the province poverty level,

Methods The study used data from the database of cancers cases diagnosed in referral hospitals and the Rwanda Integrated Household Living Condition Survey 4. The proportion of Cancer prevalence and poverty incidence were computed at provincial level. Thereafter the patterns of the two outcomes were described using comparative method. Stata, version 14 was used for computing descriptive statistics.

Findings The results show that the average proportion of all cancer cases at referral hospitals from all province equal to 20% in Rwanda. Furthermore, the southern Province and Kigali city accommodate more of cancers cases for instance 31 and 30 % respectively followed by the Eastern (18%) and the Western (13%) while the Province with the least cancer prevalent is the Northern Province with 8%. It further finds a mix patterns between the province cancer and poverty incidence rate. This study argues that cancer might not only be associated with poverty but other factors.

Recommendation Future studies about cancers in Rwanda should consider different factors considering individual data using multilevel analysis for better disease management and preventive measures.

PRESENTATION

Penny, Clement

INHIBITION OF THE SHH PATHWAY IN COLORECTAL CANCER STEM CELLS

**BASIC
SCIENCES
AND CHEMO-
THERAPY
ABSTRACTS**

13:30–14:30

Friday

10 November

Penny, Clement¹; Omar, Aadilah¹; Ruff, Paul¹

¹University of the Witwatersrand

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The incidence of colorectal cancer (CRC) in South Africa has increased markedly, being ranked among the foremost 5 cancers, with black patients developing CRC some 10 years before their Caucasian counterparts. Cancer stem cells (CSCs) a small sub-population of solid tumors are proposed as being the initiators of tumorigenesis and the source of metastatic cells. In being resilient to different modalities of therapy, they may thus proliferate and repopulate tumors leading to patient relapse. Since the Sonic Hedgehog Pathway (SHH) is described as being important in tumor recurrence, metastasis and stem cell survival, we assess here its role and influence on key biological functions in colorectal CSC's. Colorectal CSC's expressing cell surface CD133 were magnetically isolated from the HT29 and DLD1 colorectal adenocarcinoma cell lines. They were further characterized using confocal microscopy and flow cytometry. The growth patterns of CSC's (CD133+) in comparison to non-stem cells (CD133 negative) were analyzed using real time cell impedance assays, with the CD133+ cells' (CSCs) proliferation rate being slower than non-stem cells. As adhesion to extracellular matrix proteins is an important prelude to neoplastic cell invasion, the adhesive potential of the CSC's was evaluated; CSC's from both cell lines had a significantly increased adhesion potential, in comparison to the CD133 negative cells. Two cell permeable antagonists of the SHH signaling molecule Smoothed (SMO), Cyclopamine (2 μ m) and SANT-2 (20 μ m), significantly decreased cell adhesion of both DLD1 and HT29 CSC's, relative to untreated cells. Also, since traversing the basement membrane by neoplastic cells is a key step in tumor invasion and metastasis, the ability of the CSC's to invade an extracellular matrix (ECM) was determined using a chemo-invasion assay. The cell invasion of the DLD1 and HT29 CSC's through a laminin matrix was significantly decreased with both Cyclopamine (2 μ m) and SANT-2 (20 μ m) treatments. Finally, scratch assays were performed to ascertain the effect of SHH inhibition on cell migration. Here, over a period of 24 hours, SANT-2 treatment clearly inhibited migration into the cell free areas, in both DLD1 and HT29 CSC's. In summary, we report here the presence of an active SHH pathway in CD133+ colon cancer stem cells. Pharmacological inhibition of this pathway impeded cell adhesion, invasion and cell migration, suggesting a potential regulatory role for SHH signaling in epithelial to mesenchymal transitions associated with metastasis. Moreover, inhibition of SHH presents as a treatment target in metastatic colorectal cancer.

POSTER

POSTER SESSION TWO

16:30–18:00
Thursday
9 November

Perrin, René Xavier

**P451 | CONNAISSANCES, ATTITUDES ET PRATIQUES EN MATIERE DE
CANCER DU COL DE L'UTERUS CHEZ LES PROFESSIONNELS DE SANTE
A PARAKOU (BENIN) EN 2016**

Perrin, René Xavier¹; Hounkpatin, Benjamin¹; Bagnan Tonato, Angeline¹;
Obossou, Awade Affoukou Achille²; Aboubakar, Moufalilou¹

¹Centre Hospitalier Universitaire De La Mère et De L'enfant; ²Faculté de
Médecine de Parakou

Correspondence perrinx@yahoo.fr

Introduction Le cancer du col de l'utérus, l'un des plus éligibles au dépistage représente le 2ème cancer chez la femme en Afrique et au Bénin. Les prestataires en santé de la reproduction doivent jouer un rôle de premier plan pour la sensibilisation et l'incitation au dépistage.

Objectifs Evaluer les connaissances, attitudes et pratiques des professionnels de santé de la reproduction des maternités en matière de cancer du col de l'utérus à Parakou.

Méthode d'étude Il s'est agi d'une étude transversale descriptive et analytique avec collecte prospective de données chez les agents de santé intervenant dans les activités de consultations prénatales, postnatales, de gynécologie ou de planning familial des maternités de Parakou. Elle s'est déroulée sur une période de 3 mois allant du 1er mars 2016 au 1er juin 2016. Les logiciels Epi Info version 7.1.; SPSS version 17.10 et le logiciel Excel 2010 ont été utilisés pour le traitement des données.

Résultats 133 agents de santé avaient participé à l'étude. 1,5% des prestataires connaissaient bien les facteurs de risque du cancer du col de l'utérus à Parakou. 60,2% des agents de santé n'avaient pas identifié le papillomavirus humain comme principal facteur de risque. 66,2% des enquêtés méconnaissaient l'existence de vaccins contre l'HPV. La connaissance sur le cancer du col de l'utérus était globalement moyenne (71,4%). Pour 98,5% le cancer du col de l'utérus était une affection grave et 81,2% trouvaient que le dépistage de ce cancer était mal organisé au Bénin. La quasi-totalité (94,7%) des enquêtés était favorable au dépistage systématique de cette pathologie. De façon globale, seuls 27,8% des agents avaient une attitude juste en matière de cancer du col de l'utérus. 78,9% des enquêtés pratiquaient le dépistage de ce cancer. Parmi eux 100% utilisaient l'examen au spéculum, 71,4% l'IVA/IVL et 14,3% le FCV. Seuls 8,5% prescrivaient le FCV de façon systématique. De façon globale, seuls 1,5% des enquêtés avaient une pratique adéquate face au cancer du col de l'utérus. Au total, 5 agents sur les 133 (3,8%) avaient un bon score CAP global. Ce score était lié à l'âge, à la catégorie socioprofessionnelle et au secteur d'activité.

Conclusion Ces résultats mettent en évidence la nécessité d'une formation continue des professionnels de santé des services de maternité. Ceci permettra d'améliorer convenablement le diagnostic précoce de cette pathologie et donc sa prise en charge.

PRESENTATION

HIV
ASSOCIATED
MALIGNANCIES
14:40–16:30
Thursday
9 November

Phipps, Warren

CHARACTERIZING EFFECTIVE T-CELL IMMUNE RESPONSES TO KAPOSI SARCOMA THROUGH T-CELL RECEPTOR SEQUENCING OF TUMOUR INFILTRATING LYMPHOCYTES

Coffey, David^{1,2}; Niyonzima, Nixon^{1,3}; Phipps, Warren^{1,2};
Towlerton, Andrea MH¹; Warren, Edus H^{1,2}

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³Uganda Cancer Institute

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Background Kaposi sarcoma (KS) development is strongly associated with immune dysfunction in the context of HIV infection, but little is known about T-lymphocyte responses against KS tumor cells or human herpesvirus-8 (HHV-8), the viral cause of KS. We hypothesize that superior KS response and survival in the setting of treatment with antiretroviral therapy and chemotherapy will be associated with activation and expansion of tumor-reactive T-cells in KS tumors. By comparing the composition and dynamics of the T-cell repertoire of tumor-infiltrating lymphocytes (TIL) in KS tumor samples from patients with and without favorable response to therapy, we aim to identify TIL characteristics associated with tumor regression.

Methods High-throughput sequencing of the T-cell receptor β chain (TRB) locus was performed in TIL from 1–2 pre-treatment and 1–4 post-treatment KS tumors and in corresponding normal skin samples, which were obtained from HIV-infected adults with KS receiving care at the Uganda Cancer Institute in Kampala, Uganda. We compared the TRB repertoire observed in serially-collected tumors and in the corresponding normal skin samples to identify TRB sequences carried in candidate tumor-reactive T cells.

Results TRB sequencing has been performed to date on 47 KS tumors and 12 corresponding normal skin samples obtained from 12 HIV-infected adults with KS who collectively demonstrated a range of treatment responses. Unique populations of T cells were identified in multiple pre- and post-treatment tumors in all participants; however, many of these T-cell populations were not observed in the corresponding normal skin sample, suggesting the presence of KS-specific T-cell responses. In one patient who achieved durable complete response to treatment, response was associated with significant expansion in post-treatment tumor samples of a small number of T cell clones. One of these clones carried a TRB sequence of a previously reported CD8+ EBV-associated TRB, representing a “public” T-cell response shared by multiple individuals. Novel TRB sequences were also observed in multiple KS tumors from 2 or more subjects sharing specific MHC alleles, suggesting that public HHV-8-specific and KS-specific TRB will be identified in these studies.

Conclusions Our data support the existence of public T-cell responses in KS TIL, which could have significant therapeutic value. Improved understanding of how cellular immune responses are associated with control of HHV-8 and KS tumor regression will provide important insights into KS biology, and may ultimately enhance KS staging approaches and guide use of increasingly targeted and effective immune-based therapies to treat this often refractory cancer.

PRESENTATION

Piccaluga, Pier Paolo

INDOLENT NHL IN AFRICA: UNDERSTUDIED AND PERHAPS DIFFERENT FROM RESOURCE-RICH SETTINGS?

LYMPHOMAS

11:00–12:30

Thursday

9 November

Piccaluga, Pier Paolo¹; Leoncini, Lorenzo²

¹Bologna University – IEMEST; ²Siena University

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Chronic lymphocytic leukemia (CLL) is the most common type of leukemia in Western populations; however, it is quite rare in other areas, including Asia and Africa. Similarly, indolent non-Hodgkin lymphomas (NHL) seem to be less frequent in Africa than in Europe and USA. By contrast, interestingly, it has been suggested that CLL and indolent NHL patients from Africa might have an earlier disease onset and a more aggressive clinical course if compared to Caucasian patients. Recently, our group investigated the patho-biological basis for this phenomenon in Senegalese CLL, providing evidence for a more frequent unmutated IGH status in African cases. This corresponded to more frequent advanced stage (Binet B-C, $p < 0.0001$) and CD38-positive disease ($p < 0.0001$), higher peripheral blood lymphocyte count ($p < 0.0001$), and lower hemoglobin count ($p < 0.0001$). In addition, the preferential usage of specific IGHV was documented; particularly, IGHV1 (IGHV1-69), IGHD3, and IGHJ6 were significantly more common in Senegalese cases; whereas IGHV3-30, common in Italians, was never observed. Overall, this pointed out a diverse disease biology and a possibly different pathogenesis, a polymicrobial antigen stimulation being conceivable, as recently described in endemic Burkitt lymphoma.

Concerning NHL, follicular lymphoma (FL), though relatively uncommon, appears to be the commonest indolent NHL subtype in Africa. Interestingly, it was associated with HCV infection in Egypt, the mean age at onset being possibly lower than in USA.

The Authors will present the current knowledge on CLL and indolent NHL arising in Africa by focusing on their own experience with Senegalese CLL and Egyptian FL series.

POSTER

WELCOME
RECEPTION
AND POSTER
SESSION ONE

16:30–18:00

Tuesday

7 November

Pieme, Constant Anatole

**P010 | CARDIO-PROTECTIVE EFFECT OF TWO CAMEROONIAN
SPICES AGAINST DOXORUBICIN INDUCED CARDIOTOXICITY ON
H9C2 CELLS**

Pieme, Constant Anatole^{1,2}; Simões, Rui²; Ferreira, Luciana²; Deus, Claudia²;
Oliveira, Paulo J.²

¹University of Yaound; ²Coimbra University

Correspondence apieme@yahoo.fr

Objective Doxorubicin (Dox) is a highly active chemotherapeutic drug used to treat several solid and hematologic tumors. However, its clinical use is limited by its severe cardiotoxic side effects include reactive oxygen species production. This study aimed at determining the protective effects of the extracts of some plants used as spices against the Dox-induced toxicity on H9c2 cells and elucidates their mechanism of action.

Methodology To achieve our goal, the cytoprotective effects of the extracts from the barks of *Afroxytyrax lepidophyllus* (GEH) and *Monodora myristica* (AEH) were tested by assessing the growth and viability of H9c2 cells treated with Doxorubicin in presence of the extracts using sulforodamine B (SRB) and resazurine assays. The mechanism of action of the extracts were determined by studying their effects on morphological modifications and biochemical changes of the cells through the exploration of mitochondrial membrane potential ($\Delta\Psi_m$), the production of ROS, and the activity of caspases 3 and 9.

Results The SRB assay showed that the samples AEH (60.56 ± 9.83 %) and GEH (65.26 ± 9.29 %) at the concentration of $25 \mu\text{g/mL}$ have revealed a significant ($P < 0.05$) protective effect of cell growth and the resazurine assay confirmed their effect on cell viability with the respective values of 68.94 ± 6.00 % et 74.68 ± 5.84 % that were significantly higher compared to the control treated with Dox. The study of their mechanism of action showed an increase of the $\Delta\Psi_m$ in presence of the samples: GEH (68.75 ± 7.99 %) and AEH (68.41 ± 3.21 %) compared to the group receiving the Dox (56.91 ± 4.18 %). The results also showed a decreased production of ROS in living H9c2 cells and reduction of the activity of the caspases 3 and 9. The morphological assessment showed a decreased percentage of apoptotic cells as well as nucleus fragmentation using the hoechst 33342 and the TMRE showed an increase of the $\Delta\Psi_m$ in presence of AEH and GEH.

Conclusion This study suggests that the samples AEH and GEH have a protective effect against the deleterious effects of Dox on cardiomyocytes. The mechanism of action implies the reduction of apoptosis in cardiac cells and oxidative stress. Therefore, they could be used as inhibitor of Dox cardiotoxicity to improve cancer treatment.

POSTER

POSTER SESSION TWO

16:30–18:00
Thursday
9 November

Pinder, Leeya

P309 | A COMPREHENSIVE ASSESSMENT OF BREAST AND CERVICAL CANCER CONTROL INFRASTRUCTURE IN ZAMBIA

Pinder, Leeya^{1,2}; Chibwesa, Carla²; Musonda, Agnes³; Matambo, Jane³;
Sikombe, Kombatende³; Parham, Groesbeck^{1,2}

¹University of Zambia School of Medicine; ²University of North Carolina;

³Centre for Infectious Disease Research

Correspondence leeya_pinder@med.unc.edu

Background/Objectives By 2030 cancer will kill one million Africans each year. Women will bear the heaviest burden, as cancers of the breast and cervix are the most common malignancies and causes of cancer-related death in the African region. Implementing and expanding existing services for the early detection and treatment of these “priority” cancers are of utmost importance. National-level data that maps the current status of women’s cancer control services is needed to inform strategies for capacity-building.

Methods Using mixed-methods we assessed currently available services for breast and cervical cancer early detection and treatment in Zambia. The evaluation was conducted at all provincial hospitals in the country, the national referral hospital, and the national center for cancer treatment. These facilities were selected because they have been identified in the Zambian National Cancer Control Strategic Plan as the highest priority facilities for expansion of cancer control services.

Results A system for cervical cancer prevention using visual inspection with acetic acid (VIA) and ablation/excision of precancerous lesions has been established at the provincial level in Zambia. Mammography, clinical breast examination, diagnostic ultrasound and breast biopsy capacity exist at the provincial level, albeit on a much smaller scale. Breast wedge resections and mastectomy can be performed in provinces where general surgeons are located; breast conserving and reconstructive surgery are not available. Invasive cancers are generally referred to the University Teaching Hospital in Lusaka, where cancer surgical services, radiation, chemotherapy and hormonal therapy are available. Pathology services nationwide are woefully inadequate.

Conclusions The assessment revealed a critical need for centrally coordinated, but decentralized, comprehensive service platforms for cervical and breast cancer control; mid- and high-level healthcare providers who can provide advanced diagnostic and therapeutic services; pathology services; and innovative financing.

POSTER

Pinder, Leeya

P310 | A DIRECT PARTICIPATORY APPROACH TO BUILDING CAPACITY FOR BREAST CANCER CARE IN ZAMBIA

**POSTER
SESSION
TWO**

**16:30–18:00
Thursday
9 November**

Pinder, Leeya^{1,2}; Henry-Tillman, Rhonda³; Kusweje, Victor⁴; Sahasrabuddhe, Vikrant⁵; Hicks, Michael²; Parham, Groesbeck^{1,2}

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³University of Arkansas for Medical Sciences; ⁴Kabwe General Hospital;

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Background By leveraging the successes of the Cervical Cancer Prevention Program in Zambia (CCPPZ), we intended to build capacity for the early detection and surgical treatment of breast cancer.

Methods In 2005, CCPPZ was implemented and successfully scaled-up as a public-sector cervical cancer screening and prevention program, and has since provided care to over 500,000 women. Our initiative sought to build capacity for breast cancer care through the (1) formation of breast cancer advocacy alliances, raising awareness and support for breast cancer programming, (2) assessment of breast cancer screening, early detection and treatment capacity within two major healthcare facilities in the country, (3) creation of resource-appropriate breast cancer care training curricula, (4) implementation of these curricula and (5) post-implementation assessment of these activities.

Results Within the first six-months, four CCPPZ clinics successfully integrated breast health education and clinical breast examination (CBE) into their routine services and two new breast diagnostic centers were operational, increasing access to breast ultrasound, ultrasound-guided core needle biopsy and needle aspiration. In total, 1955 women have received breast health education and CBE, 167 were referred and evaluated at the two diagnostic centers for abnormalities and 55 of those evaluated underwent core-needle biopsy; 17 malignancies were diagnosed. Surgeons trained using the curricula adequately performed six sentinel lymph node mappings, eight sentinel lymph node dissections and ten breast conservation surgeries (lumpectomies).

Conclusion Overall, this initiative has increased breast care capacity in Zambia and, if properly scaled, can serve to improve the diagnosis and management of early-stage breast cancer.

PRESENTATION

AMERICAN CANCER SOCIETY: TREAT THE PAIN

08:25–09:25

Thursday

9 November

Plattner, Laura

AMERICAN CANCER SOCIETY'S TREAT THE PAIN PROGRAM – IMPROVING ACCESS TO ORAL MORPHINE: PRODUCTION OF ORAL LIQUID MORPHINE AND HOSPITAL-BASED TRAINING

Plattner, Laura¹; Igharo, Chris¹; Gizachew, Zelalem¹; Kambale, Herve¹;
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The Treat the Pain program takes a comprehensive approach to addressing challenges faced by Ministries of Health, health providers, and patients in accessing and providing quality pain management. Our program focuses both on the supply of pain medicines as well as the demand for them at the facility level.

Treat the Pain focuses on establishing and/or expanding the supply of consistent, high-quality pain medicines within and throughout partner countries. We work with a country's Ministry of Health and its medical procurement agency to address challenges to the supply chain, which often results in a partnership to implement local production of oral morphine solution as it can lower costs and allow greater flexibility in production. As demand for pain treatment grows (often due to Treat the Pain's demand-side work), the local production unit can scale its output to meet the growing need – ensuring patients are served while only producing what will be used and keeping production costs in check.

Going hand-in-hand with the supply-side efforts, Treat the Pain works with its partner Ministries of Health and their network of public hospitals to address the need for increased awareness and treatment of patients' pain through the PFHI. PFHI is a one-year on-site hospital-wide quality improvement initiative to integrate pain treatment into hospital service delivery by ensuring availability of essential pain medicines, training health workers to assess and treat pain, and increasing awareness about pain throughout the hospital.

This low-cost training of health workers to use simple interventions to manage pain, when coupled with access to affordable medicine, has immediate and real results for patients. At Kenyatta National Hospital in Kenya this initiative has cost less than \$8,000 to implement, and resulted in a 25 percent reduction in the average pain levels for oncology patients. The program had a similar impact on pain levels for patients recovering from surgery and lowered average pain levels for burn patients by more than 50 percent. Hospitals in Nigeria report similar trends: as a result of training over 5,000 hospital staff at a cost of less than \$20 per trainee, patient pain scores decreased and the consumption of pain medicines increased consistently at all six hospitals implementing the program.

PRESENTATION

Plattner, Laura

INCREASING FACILITY-BASED PAIN MANAGEMENT THROUGH A LOW-COST TRAINING INITIATIVE

PALLIATIVE CARE & OTHER ABSTRACTS

14:40–16:30

Wednesday

8 November

Plattner, Laura¹; Igharo, Chris¹; Muinga, Esther²; Kinyanjui, Asaph²; Schwartz, Amanda¹; O'Brien, Meg¹
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Objective In 2013, more than 2.2 million people died from untreated moderate or severe pain from cancer or HIV worldwide. The objective of the Pain-Free Hospital Initiative is to address this gap by implementing a low-cost intervention that increases patient access to pain assessment and management within the hospital setting.

Methods The Pain-Free Hospital Initiative (PFHI) is a one-year, low-cost quality improvement initiative designed to integrate pain management into hospital service delivery by ensuring availability of essential pain medicines, training health workers to assess and treat pain, and increasing awareness about pain throughout the hospital. PFHI was implemented at the two national public referral hospitals in Kenya in collaboration with Kenya Hospices and Palliative Care Association (KEHPCA) and at five hospitals in Nigeria in collaboration with the Federal Ministry of Health. At each hospital, staff champion(s) were identified to coordinate trainings of clinicians, distribute pain management tools, advocate at the hospital, and collect program indicators. Three data points are tracked: scores on pre- and post-training tests regarding participants' knowledge and attitudes on pain, the facility's morphine consumption, and patient pain scores.

Results In total, over 5,000 clinicians were trained in pain management across two hospitals in Kenya and four hospitals in Nigeria. At Kenyatta National Hospital in Kenya this initiative cost less than \$8,000 to implement and resulted in a 25 percent reduction in the average pain levels for oncology patients. The program also lowered average pain levels for burn patients by more than 50 percent. Hospitals in Nigeria reported similar trends. For example, for less than \$25 per trainee, University of Nigeria Teaching Hospital in Enugu trained 831 clinicians, nearly quadrupled consumption of pain medicines from prior to the program, and reduced pain scores across hospital departments.

Conclusions PFHI is a successful intervention that equips clinicians to assess and manage pain and empowers patients to ask and expect their pain to be managed. As advanced cancer care systems are established in Sub-Saharan Africa to meet the growing burden of disease, PFHI offers a low-cost solution that avoids disrupting patient care while ensuring that cancer patients are not suffering in untreated pain.

POSTER

POSTER SESSION TWO

16:30–18:00
Thursday
9 November

Plattner, Laura

P391 | IMPROVING ACCESS TO RADIOTHERAPY TREATMENT FOR CANCER PATIENTS IN KENYA THROUGH PUBLIC-PRIVATE PARTNERSHIPS

Ali, Zipporah²; Munyoro, Esther³; O'Brien, Meg¹; Plattner, Laura¹

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Objective Kenya has six radiotherapy treatment centers in the private sector and one in the public healthcare system. The American Cancer Society (ACS) is working in partnership with Kenyatta National Hospital (KNH), the Kenya Hospices and Palliative Care Association (KEHPCA), and private hospitals in Nairobi to harness additional capacity for radiotherapy treatment for public-sector patients. This program focuses on fundamentally changing the market for radiotherapy and creating improved linkages between the public and private health sectors to increase access for more patients.

Methods The program aims to: (1) Reduce the cost of radiotherapy for patients who are currently being treated in a public hospital; (2) Support private hospitals to increase the demand for radiotherapy services while maintaining a healthy and sustainable profit stream. In 2015, ACS began a pilot providing discounted radiotherapy treatment vouchers for cancer patients in Kenya who would otherwise be delayed in receiving radiotherapy. This scalable program saves lives by increasing the number of public-sector cancer patients receiving treatment and by reducing the cost of radiotherapy in the private sector. Through KEHPCA's administration and clinical direction from KNH's oncology department, patients are referred to private hospitals for radiotherapy treatment and referred back to KNH for follow-up and any additional treatment needs.

Results Since the launch of the program the price of radiotherapy treatment has decreased by 40%. Currently two private hospitals are matching the price of US\$60 per session for any patient referred from the public sector. The program has enrolled patients on newly established health insurance coverage plans for cancer treatment through the Kenya National Health Insurance Fund (NHIF). This has led to increased cost-effectiveness of current program funds and provided expanded treatment access for more patients. Challenges include maintaining patient navigation and supportive services across several hospitals, aligning the funded radiotherapy treatment with patients' chemotherapy and additional treatment needs, and fluctuating costs across the public-private sector. Thus far, over 100 patients have received treatment through the program, and patients have also been enrolled in NHIF, which provides additional support for follow-up care.

Conclusion In Kenya, no one had previously attempted to bring the public and private sectors together or to use the private sector capacity to solve the public sector cancer patient treatment delay and waiting list crisis. By using a subsidy, this initiative is fundamentally changing the market for radiotherapy in a way that makes it more accessible for patients in the public sector.

POSTER

WELCOME RECEPTION AND POSTER SESSION ONE

16:30–18:00

Tuesday

7 November

Prasher, Sparsh

P064 | SETTING UP A COMMUNITY OUTREACH CLINIC TO IMPROVE PROSTATE CANCER OUTCOMES IN AN ETHNICALLY DIVERSE COMMUNITY – THE LONDON EXPERIENCE

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Background Prostate cancer is the most common cancer in men and the second leading cause of cancer related deaths in men in the Western world. Not only is prostate cancer three times more likely and has a higher mortality in men with African and Caribbean ancestry than in Caucasian men, but studies have demonstrated that black men are less informed of prostate cancer and PSA testing compared to their Caucasian counterparts. Community based prostate clinics can be an alternative model of care (to GP services), in order to enhance knowledge of prostate cancer and support men in making decisions about undergoing investigations or treatment for prostate cancer.

Objectives The objective of this study was to demonstrate the importance, feasibility and challenges of establishing a community based prostate assessment clinic targeting ‘hard to reach’ and ‘at high risk men’ in a socially deprived area of London.

Methods The borough of Newham was chosen for the community clinic as it has one of the most ethnically diverse populations in London and also one of the worst cancer outcomes in the city. The Men’s Clinic was established in an African-Caribbean community centre in collaboration with Newham PCT, Newham University Hospital trust, the North East London Cancer Network, Prostate Cancer UK, the Department of Health, the National Cancer Action Team, Cancer Black Care and King’s College London. The clinic ran two days a week and was staffed by both medical and nursing professionals. It offered men advice on Prostate Cancer as well as PSA testing, Digital Rectal Examination, uroflowmetry and bladder ultrasound.

Results 328 men attended the clinic over the 98 days the clinic ran between December 2010 and December 2011. 46% of men who attended identified themselves as Black and 65% of all men were born outside the UK. 95% of attendees lived in deprived neighbourhoods. The vast majority of men had a poor knowledge of prostate cancer or the PSA test. This knowledge increased substantially after attending the clinic. 96% of men choose to undergo the PSA test and DRE. Overall 9 cases of prostate cancer were diagnosed. None of these men had metastatic disease on diagnosis.

Conclusion Community based prostate clinics are a successful method of reaching ‘hard to reach’ at-risk men with poor knowledge of prostate cancer. These men would not have otherwise sought medical attention to lower urinary tract symptoms or would have asked for a PSA test.

POSTER

POSTER SESSION TWO

16:30–18:00
Thursday
9 November

Prasher, Sparsh

P311 | MRCAP STUDY – CAN MULTIPARA-METRIC MRI OF THE PROSTATE BE USED TO IDENTIFY PATIENTS IN WHOM TRUS BIOPSIES CAN BE SAFELY AVOIDED?

Prasher, Sparsh¹; Titus, Nathan¹; Owegie, Peter¹; Chinegwundoh, Francis¹; Mak, Jonathan¹; Kok, LiTeng¹; Nawaz, Kinza¹; Chari, Natasha¹
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Introduction Advances in MRI techniques has generated interest in its ability to discriminate between benign and malignant prostate tissue. MP-MRIs are reported with a PI-RADS score. This is a likert score, which determines the likelihood of a lesion being malignant. We performed a retrospective analysis to determine if multiparametric-MRI can be used to identify patients in whom TRUS biopsies can be safely avoided.

Methods We performed a retrospective review of all patients who were investigated for a raised PSA between September 2015–July 2016 in three London Hospitals – The Royal London, Newham University Hospital and St Barts Hospital. All patients underwent a 1.5 Tesla MP-MRI prior to a Transrectal Ultrasound guided Biopsy of their Prostate gland. We noted patient age, PSA level, Prostate volume (calculated by MRI), PSA density, ethnicity, histology and the PI-RADS score on the MP-MRI of the Prostate.

Results 511 patients underwent MP-MRI (prior to a TRUS biopsy of the prostate) over the course of 18 Months in three London Hospitals. The mean age of included patients was 65 years old. A total of 254 prostate cancers were diagnosed.

170 patients were reported to have PIRADS 1–3 lesions. Of these 56 patients (33%) were found to have prostate cancer. The mean Gleason score was 7 (Gleason Score Ranging from 6 to 10). Furthermore, MRI missed cancer in a lobe in 18 patients in whom the histology had proven bilateral prostate cancer.

341 patients were reported to have PIRADS 4/5. 179 were found to have prostate cancer (52%).

Conclusion Mp-MRI can miss clinically significant prostate cancers and therefore a normal MRI (PI-RADS 1-3) cannot be used to guide decision to biopsy in patients with an elevated PSA.

POSTER

Pritchett, Natalie

HIGHER SERUM SELENIUM CONCENTRATION IS ASSOCIATED WITH A HIGHER PREVALENCE OF OESOPHAGEAL SQUAMOUS DYSPLASIA IN BOMET, KENYA

Pritchett, Natalie¹; Mwachiro, Michael²; Burgert, Stephen²; Brockman, John³; Abnet, Christian¹; Dawsey, Sanford¹

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EPIDEMI-

LOGY

ABSTRACTS

14:40–16:30

Wednesday

8 November

Objective Low serum selenium status has been associated with increased risk of esophageal squamous cell carcinoma (ESCC). East Africa is a region of high ESCC incidence and is known to have low soil selenium levels, but this association has not previously been evaluated. The objective of this study was to assess the association of serum selenium concentration and the prevalence of esophageal squamous dysplasia (ESD), the precursor lesion of ESCC, in a cross-sectional study of subjects from Bomet, Kenya.

Methods 294 asymptomatic adult residents of Bomet, Kenya completed questionnaires and underwent endoscopy with Lugol's iodine staining and biopsy for detection of ESD. Serum selenium concentrations were measured by instrumental neutron activation analysis. Odds ratios (OR) and confidence intervals (95% CI) for associations between serum selenium and ESD were calculated using unconditional logistic regression.

Results The mean serum selenium concentration was 85.5 (+28.3) $\mu\text{g/L}$. Forty-two ESD cases were identified (14% of those screened), including 5 (12%) in selenium quartile 1 (Q1), 5 (12%) in Q2, 15 (36%) in Q3, and 17 (40%) in Q4. Higher serum selenium was associated with prevalence of ESD (Q4 vs Q1: OR: 3.03; 95% CI: 1.05–8.74) and this association remained significant after adjusting for potential confounders (Q4 vs Q1: OR: 3.87; 95% CI: 1.06–14.19). Serum selenium concentration did differ significantly by geographic location ($p=0.001$), however, this did not explain the association between selenium and ESD.

Conclusions This is the first study to evaluate the association of serum selenium concentration and esophageal squamous dysplasia in an African population at high risk for ESCC. We found a significant positive association between higher serum selenium concentration and prevalence of ESD, an association contrary to our original hypothesis. The discrepancy may be due to the difference in endpoint of ESD rather than ESCC. Further work is needed to better understand the role of selenium in the etiology of ESCC in this region, and to develop effective ESCC prevention and control strategies.

Funding1: This research was made possible by the African Organization for Research and Training in Cancer's Beginning Investigator Grant for Catalytic Research Program, in collaboration with the U.S. National Institutes of Health's (NIH) National Cancer Institute (NCI) Office of International Affairs. There are no other financial or non-financial competing interests to be declared.

POSTER

Pritchett, Natalie

P240 | DEVELOPMENT OF AN AFRICAN OESOPHAGEAL CANCER CONSORTIUM

**POSTER
SESSION**

TWO

16:30–18:00

Thursday

9 November

Pritchett, Natalie¹; Van Loon, Katherine²; Kaimila, Bongani³; Mathews, Christopher⁴; Mwachiro, Michael⁵; McCormack, Valerie⁶; Dawsey, Sanford¹ National Cancer Institute; ²University of California; ³UNC Project-Malawi; ⁴King's College; ⁵Tenwek Hospital; ⁶International Agency for Research on Cancer

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Objective To create an African Esophageal Cancer Consortium to (1) raise awareness of the importance of esophageal squamous cell carcinoma (ESCC) in Africa, (2) to coordinate etiologic and molecular studies of ESCC in the high risk populations, and (3) to facilitate provision of therapeutic training and equipment aimed to improve survival and quality of life.

Esophageal cancer is the 6th leading cause of cancer death worldwide. It kills 400,000 people every year, most of whom live in two distinct geographic bands across central Asia and along the eastern Africa corridor extending from Ethiopia to South Africa. In these high-risk areas, nearly all cases are ESCC. Our group and others have performed studies of ESCC in central Asia, but this disease remains understudied in eastern Africa.

Several groups in Africa have undertaken studies case-control studies of ESCC: Dar es Salaam, Tanzania (UCSF and MUHAS); Eldoret, Kenya (IARC and Moi University); Moshi, Tanzania (IARC and Kilimanjaro Clinical Research Institute); Bomet, Kenya (NCI and Tenwek Hospital); and Lilongwe, Malawi (NCI and the UNC-Malawi Project).

Methods The first coordinated Consortium activity was to standardize questionnaires using an mHealth app for real-time data capture on a phone/tablet, to increase efficiency, eliminate transcription mistakes, and allows real-time quality control of field activities.

The consortium held its second annual meeting in September 2016, where the five member sites affirmed their commitment to the consortium, and the first study coordinator was named.

Coordinated molecular and genomic studies are planned. The consortium is working with partners in China to provide affordable stents in Africa for palliative ESCC treatment, as well as secure training to safely and effectively place stents.

Conclusion The Consortium continues to work to decrease the burden of ESCC across east Africa. Annual meetings will continue to follow-up on progress and to develop new initiatives.

POSTER

WELCOME RECEPTION AND POSTER SESSION ONE

16:30–18:00

Tuesday

7 November

Pupwe, George

P088 | A RETROSPECTIVE ANALYSIS OF TOXICITY AND OUTCOMES FOLLOWING CHEMOTHERAPY FOR THE OLDER POPULATION AT A SINGLE INSTITUTION

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Objectives To retrospectively evaluate the differences in toxicities and tumour-related mortality in three different age groups (histologically proven adenocarcinoma of colon/rectum) referred to the department, between the periods of January 2009 to December 2013.

Design and Method Using a retrospective study, we analyzed demographics, compared toxicities in the age groups > 75 years, 70–75 years and <70 years in colorectal cancer patients at Tygerberg Hospital of 50 patients. We assessed tumour related mortality, Progression Free Survival (PFS) and Overall Survival (OS) including predictive factors of OS.

Results A total of 50 patients received either adjuvant or palliative chemotherapy. Different chemotherapy regimens were used. There was no difference in overall or severe (Common Toxicity Criteria III to IV) toxicity in all the three age groups. Out of the 50 patients, 8 (16%) had Grade 3–4 toxicity. Of these 3 (37.5%) were >75years, 3 (37.5%) were <70 years and 2 (25%) were 70–75 years. The progression free survival (PFS) and overall survival were measured using Kaplan-Meier curves. The mean follow up time was 47.5 months (range: 14.4–80.8 months, 95% CI 41.5–53.5 months). The 5-year overall survival rate was 57% and the 5-year progressive free survival rate was 49%. The difference in PFS and OS was not statistically different ($P = 0.2912$). Three factors were independently associated with a better OS in a multivariate analysis: weight loss < 5% (HR 0.18; 95% CI 0.0129–0.1867; $P < 0.0001$), WHO PS 0-1 (HR 0.11; 95% CI 0.000032–0.0207; $P < 0.0001$) and a limited number of metastatic sites HR 0.13; CI 0.0039–0.0677; $P < 0.0001$).

Conclusion “Fit” elderly patients benefit, at least, to the same extent from adjuvant and palliative chemotherapy as younger patients in this cohort. Therefore, standardized adjuvant and palliative chemotherapy could be offered to elderly patients and they should not be excluded from clinical trials.

POSTER

POSTER SESSION TWO

16:30–18:00
Thursday
9 November

Quarshie, Rexford

P368 | THE EFFECT OF CONTINUOUS MEDICAL EDUCATION ON OPIOID CONSUMPTION TRENDS IN TETTEH QUARSHIE MEMORIAL HOSPITAL, MAMPONG-AKUAPEM, GHANA

Atieno, Mackuline²; Davor, Anthony³; Gyakobo, Mawuli¹; O'Brien, Meg⁴; Quarshie, Rexford¹; Soyannwo, Olaitan⁵

¹Tetteh Quarshie Memorial Hospital; ²African Palliative Care Association;

³Upper East Regional Hospital; ⁴American Cancer Society;

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Background The World Health Organization (WHO) in 1986 introduced the Analgesic Step Ladder by which 80–90% of patients in pain could be effectively treated. By this ladder mild, moderate and severe pain are managed with Non-Opioids, Weak Opioids and Strong Opioids respectively with or without adjuvants. The American Cancer Society (ACS) through its “Treat The Pain” campaign is assisting hospitals to improve knowledge on pain management and equip clinicians with skills to effectively treat pain in all patients. This training was made possible through collaboration with the Pain-free Hospital Initiative program of ACS and African Palliative Care Association.

Problem Statement Pain is the commonest presenting complaint to all health institutions globally. In Ghana like in many other developing countries effective pain treatment is limited by knowledge, availability and affordability of pain medicines including opioid analgesics. This abstract describes how training is impacting the prescription patterns of opioids in Tetteh Quarshie Memorial Hospital, Ghana.

Objectives

- 1) Determine the impact of continuing medical education (CME) in pain management on knowledge in opioid medicines prescription
- 2) Determine the association between knowledge and opioid prescription patterns

Methodology Over a period of one year (April 2016 to March 2017) both clinical and non-clinical staff were taken through thirteen sessions on Pain Management. Their knowledge was assessed by comparison of Pre-test and Post-test scores while Opioid consumption patterns were monitored using data on Opioid consumption from hospital pharmacy.

Results Training of staff was carried out by the Family Physician, residents and nurse trainers who had also been trained in earlier cohorts. Improved average knowledge assessment scores was found in all cohorts at the end of the training. Significant improvement of Post-test average scores over Pre-test were demonstrated by the computed P-values ($P < 0.05$). Over the period of one year, the prescription patterns have been transformed with reduction in use of Pethidine and increased confidence in the use of Morphine. Other weak opioids were also effectively utilized and dihydrocodiene added to the hospitals stock of opioids.

Conclusion Effective continuous medical education impacts positively on knowledge and confidence of staff with respect to prescription of Opioids.

Recommendations for research Further work is required to assess the impact of improved knowledge and Opioid prescription on the average pain scores of patients.

POSTER

Quessar, Asma

P269 | TREATMENT AND OUTCOME OF ACUTE MYELOID LEUKAEMIA IN MOROCCAN ADULT PATIENTS TREATED WITH THE NATIONAL AML-MA2011 PROTOCOL IN SINGLE CENTER, CASABLANCA

POSTER
SESSION
TWO

16:30–18:00
Thursday
9 November

Quessar, Asma¹; Massi, Romaric¹; Bencharef, Hanaa¹; Hda, Nazha²; Quachouh, Meryem¹; Lamchaheb, Mouna¹

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Treatment of AML in developing countries is challenging. In Morocco, the major causes of therapy failure are delay in diagnosis, early (prior to start of therapy) and induction deaths, and abandonment of therapy. In 2011, the national AML-MA-2011 protocol was initiated to treat AML patients according to international standards and was focused on the improvement of supportive care with particular the prevention and management of infection, transfusion support, the patient, family and nurses education on hygiene.

Aim To evaluate the results in adults AML patients treated with AML MA 2011 protocol in Casablanca Hematology Departement.

Patients and Methods Data of patients (aged 18–60 yrs) treated according to AML-MA-2011 protocol from 1 January 2011 to 31 December 2015 were reviewed. Patients with APL or secondary AML were excluded. AML was diagnosed according to WHO 2008 criteria (immunophenotyping and Karyotype). Patients with WBC \geq 50G/L received hydroxyurea (50mg/kg/day x 4 days) to lower de WBC. The two courses of induction associated Cytarabine (100mg/m² q 12h (day 1–10)), Daunorubicin (50 mg/m² (day 2- 4–6), second induction added etoposide (100mg/m² d 2–6). The consolidation included Cytarabine (3g/m² q 12h (day1–3) for first and second course and 1 g/m² (day1–3) on third course) plus Daunorubicin (30mg/m² (day 3–4 and day 1–3) at the first and third consolidation. L-Asparaginase 6000UI/m² on day 4 was give at second consolidation. Patients received CNS prophylaxis. The analysis of data was done by SPSS 18.0

Results 323 patients wereincluded in AML-MA-2011 protocol from 2011–2015. The median age was 38 years (18–60), the sex-ratio M/F was 1.10; the median hemoglobin (g/dl) was 7.15 (2.6–16.3); the median platelet (G/L) was 38.5 (1–620) ; the median leukocyte (G/L) was 17.97 (0.85–377). FAB subtype dominant were M1 : 98 (30.34%), M2 : 97 (30.03%), M4 : 51(15.78%). Prognosis risk groups were favorable in 46 (14.24%), intermediate in 216 (66.87%) and unfavorable in 61 (18.88%) . CR rate after two inductions was obtained in 197(60.99%) patients, 49 (15.17%) patients fail to reach CR. 98(30.34%) patients died during inductions cycles. The OS at 3-years was estimated at 48.4%. The analysis of therapeutics results is summarized in the table.

Conclusion Therapeutics results of AML-MA-2011 protocol in the treatment of adults AML patients are satisfactory but could be improved with reduction of infection toxic deaths and improvement of supportive care therapy.

POSTER

POSTER SESSION TWO

16:30–18:00

Thursday

9 November

Quessar, Asma

P270 | OUTCOME OF ACUTE MYELOID LEUKAEMIA IN CHILDREN AND YOUNG ADULTS TREATED WITH AN UNIFORM PROTOCOL IN CASABLANCA, MOROCCO

Quessar, Asma¹; Houssou, Bienvenu¹; Khoubila, Nisrine¹; Cherkaoui, Siham¹; Athale, Uma²; Lamchaheb, Mouna¹

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Introduction With improvement in the risk assessment and supportive care, about 50% of children and young adults with newly diagnosed acute myeloid leukemia (AML) can be cured in high income countries. However, similar survival advantages are not seen in patients from low or middle income countries. In Morocco, the main causes of poor outcome in patients with AML are delayed diagnosis, early (before the start of treatment) and induction death.

Aim of this study Evaluate and compare treatment outcomes (Complete remission rate (CR), OS and EFS) of children (≤ 15 yrs), adolescents and young adults (AYA) (15–30 yrs) with de novo AML and treated at a single center with the AML-MA2011 protocol.

Patients and methods From January 2011 to December 2015, eligible patients with de novo AML were enrolled. Patients with secondary AML, Down's syndrome, those with acute promyelocytic leukemia or organ dysfunctions were excluded. The diagnosis was confirmed according to the FAB classification using WHO criteria, immunophenotyping and karyotype. Patients with hyperleukocytosis ($WBC \geq 50G/L$) received a pre-phase, 4 days of hydroxyurea (50mg/kg/da) then 2 inductions and 2 consolidations. Induction associated cytarabine (100mg/m² q 12h for 10 days), Daunorubicin (50 mg/m², 3 days) and etoposide (100mg/m², 5 days second induction). The consolidation included Cytarabine (3g/m²q 12h days 1–3), Daunorubicin (30mg/m² days 3–4). L-Asparaginase 6000UI/m² day 4, second consolidation. All patients received CNS prophylaxis. The supportive care consisted of blood product transfusion, antibiotic and antifungal,

Results 155 patients were enrolled, 41 were < 15 yrs (22 boys ; median age 7.8 yrs.). Of the 114 AYA enrolled, 48 were female, median age was 23 yrs. In children median hemoglobin was 6.75g/dl and platelet 39.5G/L, 15/41 (36.6%) had AML2 and 36/41 (87.8%) had immunophenotyping. Among young adults 32/114 (28.1%) were hyperleukocytosis, 7.38g/dl and 52.81G/L were median hemoglobin and platelets respectively, 31/114 (29.8%) had AML1 and 89/114 (78.1%) had immunophenotyping. Cytogenetics was performed 90.2% of children and 95.6% of AYA. The median delay from diagnosis to treatment was 11.5 days in children and 29.9 days. CR after two inductions was achieved in 28/41 (68.3%) children and 71/114 (62.3%) adults. Failure rate was 9.8% in children and 14.9% in young adults. Deaths in children were 9 (22%) and 26 (22.8%) in AYA. The main cause of death was infection.

Conclusion The results of the AML-MA 2011 protocol were similar in both groups, supportive care should be improved.

POSTER

POSTER SESSION TWO

16:30–18:00

Thursday

9 November

Rabwoni, Martha

P369 | FACTORS INFLUENCING LATE PRESENTATION FOR HEALTH CARE AMONG WOMEN WITH CANCER OF THE CERVIX ATTENDING MOBILE HOSPICE MBARARA

Rabwoni, Martha¹

¹Hospice Africa Uganda

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Cervical cancer is the second most common cancer in women globally and accounts for 13% of all female cancers (WHO 2009). Cancer of the cervix are caused by the Papilloma virus. It is one of the cancers which can get cured if diagnosed early and yet many women in Uganda are dying of cancer of the cervix. According to the Centre for Disease Control (CDC) and the World Health Organization (WHO)'s International Agency for Research on Cancer (IRAC, 2012), each year nearly 47 women per 100,000 women over the age of 15 are diagnosed with cervical cancer in Uganda. Cancer is a diagnosis that can have profound implications for a woman's physical well being, social well being, emotional well being and quality of life. Out of 19,276 patients cared for at MHM, 2,275 are cancer of the cervix women. Late presentation may occur either as a result of late testing or delayed presentation to cancer care centres after getting tested. The major burden of late presentation affects the social economic areas. Half of these patients die because they come when the cancer has advanced. A cancer diagnosis also leads to great psychological suffering for women and their families which require support and counseling.

The objective of this study was to find out factors influencing late presentation for health care among women with cancer of the cervix attending Mobile Hospice Mbarara (MHM). A qualitative study was used with semi-structured interview guide. A one-on-one interview was recorded by use of audio tape and was transcribed verbatim. Themes were obtained, coded and analyzed. Ten women were interviewed and the finds were three themes; namely, Social-Economic factors, Health system factors, Patient and community factors. The themes were interdependent. Social economic factor was the major predictors of health service use being affected by poverty, family support and spiritual issues. Lack of screening services, late referrals, poor communication by health workers and patients' lack of awareness about cancer created the health system factors. Patients and community perceptions and beliefs about the disease affected their early presentation for health care. These findings need to be addressed urgently by the Government of Uganda and health workers to reduce the late presentation by women with cancer of the cervix and curb the mortality and morbidity.

POSTER

POSTER SESSION TWO

16:30–18:00

Thursday

9 November

Raphela, France

P392 | SAFETY MODEL FOR EMPLOYEES EXPOSED TO EXTREMELY LOW FREQUENCY ELECTROMAGNETIC FIELDS IN THE WELDING INDUSTRY

Raphela, France¹

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Extremely low frequency (ELF) electromagnetic fields (EMFs) are mostly common in the welding environment at a very high intensity. Exposure to this type of electromagnetic fields may increase the risk for the development of cancer among the affected individuals. Common sources of exposure to electromagnetic fields are the industrial devices used for induction heating mostly found in the welding environment. Some studies suggest that exposure to ELF EMFs has a negative effect on humans and may lead to the development of leukemia, brain and breast cancer and other types of cancers. The Occupational Health and Safety Act of South Africa aims to maintain a safe and healthy working environment for all workers. Compliance with the act is however a major challenge in many workplaces and employees may be at risk of acquiring occupational diseases such as cancer. A survey was conducted in a welding company located in the Free State Province of South Africa. The objective of the survey was to assess the exposure levels to ELF EMFs among workers and develop a safety model to reduce exposure to electromagnetic fields. The median time weighted average (TWA) for magnetic fields at all distances were similar in the workshop A and B, viz 7.44 and 7.56 μT at 1 m, respectively, decreasing to 1.33 and 1.44 μT at 2 m and 0.37 and 0.46 μT at 3 m. The median TWA for magnetic fields in offices were below 0.2 μT at all distances. A safety model with guidelines to reduce occupational exposure to electromagnetic fields was developed for the welding industry. Engineering control measures such as the use of safety devices to reduce exposure to EMFs should be implemented. Implementation of administrative controls measures should include reducing the welding hours, limiting access to the welding sites, training of staff and conducting a medical surveillance programme in the workplace. Employees should also use personal protective equipment designed to reduce exposure to electromagnetic fields. Implementation of safety control measures is necessary to reduce the risk of cancer development among employees in the welding industry.

PRESENTATION

Rapoport, Bernardo

IMMUNE CHECKPOINT INHIBITION IN CANCER THERAPY

Rapoport, Bernardo^{1,2}

¹The Medical Oncology Centre of Rosebank; ²University of Pretoria

TARGETED THERAPIES

08:25–09:25

Wednesday

8 November

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Cancer development is facilitated by a number of immune subversion mechanisms, such as the production of anti-inflammatory cytokines, induction of regulatory T (Treg) cells, and expression of immune checkpoint molecules, including CTLA-4 and PD-1. CTLA-4, expressed on T cells, interacts with CD80/CD86, thereby limiting T-cell activation and leading to anergy. PD-1 is predominantly expressed on T cells and its interaction with PD-L1 and PD-L2 expressed on antigen-presenting cells (APCs) and malignant cell sends a negative signal to T cells, which can lead to T-cell exhaustion.

Immune checkpoint blockade with monoclonal antibodies directed at the inhibitory immune receptors CTLA-4, PD-1, and PD-L1 has emerged as a efficacious treatment approach for patients with malignant disease. Ipilimumab is the first agent associated with a documented improved overall survival in this patient with metastatic malignant melanoma. A striking aspect of CTLA-4 blockade is the objective durable responses associated with treatment, leading to the possibility of cure. Blocking the interaction between the programmed cell death PD1 protein and one of its ligands, PDL-1, has been also reported to have impressive antitumor responses. Pembrolizumab and nivolumab are the first of this anti-PD-1 pathway family of checkpoint inhibitors to gain accelerated approval for the treatment of ipilimumab-refractory melanoma. Immunotherapy is now a recognized treatment for patients with advanced non-small cell lung cancer (NSCLC), The combination of PD-1 inhibitor with a CTLA-4 inhibitor was recently approved for the treatment of metastatic malignant melanoma, the combination is more active; however, more adverse reactions were seen when the two drugs were used together.

Side effects of immune checkpoint inhibitors are described as immune-related adverse event (irAE). Fatigue is a very common irAE seen in patients treated with checkpoint inhibitors in half of the patients. Other common irAEs seen includes colitis in a third of the patients and dermatological in 44%. The incidence of hepatic and endocrine (hypophysitis, adrenal insufficiency and hypothyroidism) involvement follows with about 5–6%. Pulmonary irAEs are more common with PD-1 blockers, although the incidence is <1% and presents later during the course of treatment. Other systems less commonly affected include neurological (sensory and motor neuropathies, Guillain-Barre syndrome, posterior reversible encephalopathy syndrome, aseptic meningitis, and transverse myelitis), ophthalmologic, renal (renal insufficiency and nephritis) and hematological (red cell aplasia, neutropenia).

Immunotherapy with checkpoint inhibitors is a novel anticancer treatment modality. Trials of combinations immune checkpoint inhibitors, chemotherapy, and other forms of immunotherapy are in progress.

POSTER

WELCOME RECEPTION AND POSTER SESSION ONE

16:30–18:00

Tuesday

7 November

Rapoport, Bernardo

P089 | ASSOCIATION OF VITILIGO WITH LONG TERM SURVIVAL AFTER TREATMENT WITH IPILIMUMAB IN METASTATIC MALIGNANT MELANOMA

Rapoport, Bernardo¹; Van Eeden, Ronwyn¹; Smit, Teresa¹

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Objective Metastatic melanoma prior to the era of immunotherapy had a dismal prognosis. CTLA-4 inhibitor, ipilimumab was the first agent associated with long-term survival. CTLA-4 inhibitors have a different side effect profile from other treatments for melanoma such as chemotherapy or BRAF inhibitors. Vitiligo is an uncommon skin toxicity of these agents. However it is interesting is that there is retrospective data and meta-analysis of melanoma immunotherapy modalities that found the association of vitiligo with progression free survival and overall survival and a smaller risk of relapse in these patients who get this toxicity. We look at two patients with advanced melanoma treated with ipilimumab therapy, who both achieved complete responses and durable remissions of more than 5 years.

Design and Method Retrospective case reports using clinical records to describe the management and long term follow up of two patients with advanced melanoma who received ipilimumab via and expanded access programme.

Results Both patients had stage 4 melanoma documented. One patient had metastases to liver and lung and the other large retroperitoneal and abdominal nodal metastases. Both patients received 4 treatments of ipilimumab therapy at a dose of 3mg/kg. The patients both have documented vitiligo spots on the back and face and hand respectively. These patients both have complete responses with no evidence of relapse or disease recurrence after five years of treatment. Of the 19 patients with advanced melanoma, treated at our Centre with ipilimumab, 26.3% achieved a response. 3 patients had durable remissions (15.7%) Two of those patients developed vitiligo (10.2%) with a complete response and durable remission of more than 5 years.

Conclusion Immune related adverse events are very different from what has seen before with other conventional therapy. Vitiligo has been reported in different checkpoint inhibitors and seems to have association with a good prognosis and increased response rates in patients although more prospective evidence is still needed.

POSTER

WELCOME RECEPTION AND POSTER SESSION ONE

16:30–18:00

Tuesday

7 November

Rapoport, Bernardo

P090 | CLINICAL EXPERIENCE WITH NIVOLUMAB IN PRE-TREATED PATIENTS WITH NSCLC. SINGLE CENTRE EXPERIENCE

Rapoport, Bernardo¹; Van Eeden, Ronwyn¹; Smit, Teresa¹

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Objectives Lung cancer is the leading cause of cancer death with only 17.4% of patients being alive after 5 years. The use of chemotherapy has produced objective responses and small improvement in survival for patients with metastatic disease. For patients who have relapsed after platinum-based chemotherapy, second-line therapy can be considered. Chemotherapy is also associated with severe toxicity. Nivolumab is a fully human IgG4 monoclonal antibody that binds to and blocks the activation of PD-1 by its ligand. Nivolumab was initially approved in March 2015 for advanced squamous NSCLC based on improvement of overall survival (OS) an open-label, multicentre, randomized phase III trial (CheckMate 017) (overall survival nivolumab 9.2 vs docetaxel 6 months). Nivolumab was approved for advanced non-squamous NSCLC was issued in October 2015, based on demonstration of improvement in OS in an international, multicentre, open-label phase III clinical trial (CheckMate 057) (nivolumab 12.2 months' vs docetaxel 9.4 months' groups).

Design and Method A retrospective, single centre, non-interventional analysis was performed on data collected from the nivolumab expanded access programme in South Africa (SA-EAP). The retrospective study investigated clinical outcomes and toxicity associated with nivolumab in patients with relapsed metastatic NSCLC.

Results A total of 18 patients (10 males and 8 females) were included in the analysis. Two patients were non-evaluable. The median age was 66 years (range 46–85). Adenocarcinoma was documented in 15 patients and squamous cell carcinoma in 3 patients. A Ros-1 positive mutation was documented in 1 patient; 3 EGFR positive mutations were recorded and no patients tested positive for ALK. All patients failed frontline treatment: 14 patients failed platinum based chemotherapy and 4 patients failed TKI-inhibitors (3 on erlotinib and 1 on crizotinib). Patients received a median of 4 cycles of nivolumab (range 1–16). The performance status ranged from 0 to 2 (median 1). The median number of metastatic sites was 3 (range 1–5). Four partial responses were documented (23.5% 95% CI 3–43%), with response durations of 232, 113, 63 and 30 days. Disease stabilization was documented in 8 patients. There were no complete responses so far, and 6 patients showed progressive disease. One patient was non-evaluable (died due to progressive disease before treatment initiation). One patient death was most likely related to pulmonary embolus. No responses were seen amongst the patients who received prior TKI treatment.

Conclusion In this retrospective study nivolumab was an active and well tolerated treatment in pts with pre-treated NSCLC.

POSTER

WELCOME RECEPTION AND POSTER SESSION ONE

16:30–18:00

Tuesday

7 November

Rapoport, Bernardo

P091 | EXPERIENCE OF IMMUNE-RELATED ADVERSE EVENTS ASSOCIATED WITH IPILIMUMAB AND NIVOLUMAB IN A SINGLE CENTRE

Rapoport, Bernardo¹; Van Eeden, Ronwyn¹; Smit, Teresa¹

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Objectives Ipilimumab and nivolumab can induce immune-related adverse events (irAEs) to the skin, gastrointestinal, liver, endocrine and other systems. We describe the irAE's associated with 19 patients treated with ipilimumab and 25 patient treated with nivolumab, additionally 1 patient was treated with combination of ipilimumab and nivolumab.

Design & Method A retrospective review of data from 45 patient records were used to describe the irAE's associated with 19 patients treated with Ipilimumab and 25 patients treated with Nivolumab and 1 patient with combination of ipilimumab and nivolumab. This is a single centre review in an expanded access programme/clinical trial setting.

Results A total of 45 patients (28 males, 17 females) were analyzed. The median age was 63 years. The median PS was 1. Three patients with metastatic melanoma, 18 with non-small cell lung cancer (NSCLC), 2 with renal cell carcinoma and 2 with Hodgkin's disease were treated with nivolumab and 19 with metastatic melanoma received ipilimumab. One patient with combination of ipilimumab and nivolumab. In total 167 cycles of nivolumab (median = 4, range 1–16) and 60 cycles of ipilimumab (median = 4 cycles, range 1–4) were administered. The patient receiving combination of ipilimumab and nivolumab received 1 cycle of treatment. Seven irAEs are described in 15 ipilimumab treated patients. These include endocrinopathy in 3 patients (hypophysitis in 1 patient and hypothyroidism in 2 patients), colitis in 3 patients (1 required infliximab) and hepatitis in 1 patient. Among the patients treated with nivolumab, 7 irAEs were documented. These included pneumonitis in 2 patients, skin rash in 3 patients, mild diarrhea in 1 patient and mild uveitis in 1 patient. One patient developed autoimmune thrombocytopenia, nephritis, and PRES (posterior reversible encephalopathy syndrome). Three chest infections were documented including pulmonary tuberculosis in a NSCLC patient. The patient receiving combination ipilimumab and nivolumab had grade 4 skin toxicity requiring treatment discontinuation. No irAE related deaths were document.

Conclusion A plethora of irAEs are described with anti-PD1 and anti-CTLA4 antibodies. Colitis was more common with ipilimumab while pneumonitis more common with nivolumab. Prompt diagnosis of irAE's will result in decreased morbidity and mortality.

POSTER

WELCOME RECEPTION AND POSTER SESSION ONE

16:30–18:00

Tuesday

7 November

Rapoport, Bernardo

P092 | PNEUMONITIS, OTHER PULMONARY INFILTRATIONS AND INFECTIONS ASSOCIATED WITH ANTI-PD-1 INHIBITOR TREATMENT IN PATIENTS WITH NON-SMALL CELL LUNG CANCER

Rapoport, Bernardo¹; Van Eeden, Ronwyn¹; Smit, Teresa¹

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Introduction Nivolumab, a fully human IgG4 programmed death 1 (PD-1) immune-checkpoint-inhibitor antibody, disrupts PD-1-mediated signaling and may restore antitumor immunity in NSCLC patients. Pneumonitis is a complication associated with this agent.

Objectives Describe pulmonary abnormalities associated with any PD-1 treatment in NSCLC patients.

Methods Retrospective data review.

Results A total of 18 patients (pts) (10 males and 8 females) were included in the analysis. The median age was 66 years (range 46-85). Adenocarcinoma was documented in 15 pts and squamous cell carcinoma in 3 pts. All pts failed frontline treatment: 14 pts failed platinum based chemotherapy and 4 pts failed TKI-inhibitors (3 on erlotinib and 1 on crizotinib). Pts received a median of 4 cycles of nivolumab (range 1–16). The median ECOG performance status was 1 (range 0–2). The median number of metastatic sites was 3 (range 1-5). Documented toxicities included pneumonitis in 2 pts (responded to corticosteroids), chest infections in 3 pts, opportunistic infection in 1 pt (documented pulmonary tuberculosis). Other pulmonary abnormalities were primarily due to disease progression.

Conclusions Pneumonitis and other pulmonary abnormalities are complications associated with anti-PD-1 treatment. A variety of noninfectious and infectious conditions can lead to pulmonary infiltrates in these patients. Pneumonitis differential diagnosis in these patients includes: lymphangitis carcinomatosa, disease progression, other opportunistic infections including fungal infections or TB, disease pseudo-progression and pleural effusion due to metastatic disease or infections. Diagnostic evaluation of pulmonary infiltrates will require additional noninvasive investigations including high resolution CT Scan and serological studies. Others may require invasive studies such as fiberoptic bronchoscopy and bronchoalveolar lavage, and surgical lung biopsy.

POSTER

WELCOME RECEPTION AND POSTER SESSION ONE

16:30–18:00

Tuesday
7 November

Rayne, Sarah

P197 | USING A NOVEL DETECTION METHOD FOR STAGING BREAST CANCER TO IMPROVE ACCESS TO LYMPH-NODE SPARING SURGERY OUTSIDE HIGH-INCOME SETTINGS

Benn, Carol-Ann¹; Cairncross, Lydia²; Malherbe, Francois²; Rayne, Sarah¹
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The Sentinel Lymph Node Biopsy (SLNB) is the safe accurate standard of care in staging clinically node-negative breast cancer. The most common technique is using dual blue dye and radioisotope tracer. Despite improved patient reported outcomes and accuracy, less than 5% of eligible patients in LMICs will undergo this procedure, with the main barrier being access to radioisotope and detection methods.

A novel tracer and detection system using superparamagnetic iron oxide (SPIO) nanoparticles has been shown to be safe and reproducible in trials in high-income countries. They have the capacity to make accurate SLNB accessible for patients where there is no access to radioisotope and therefore increase the uptake of lymph-node-sparing procedures.

Twenty SLNBs were carried out over three government hospital study sites in two provinces in South Africa. Preoperative in-patient time, transport time for patients and number of pre-operative procedures were all reduced using this technique. Five SLNBs were carried out at a site where previously only full lymph node dissections were offered. Although per-case costs were originally high, considerations of isotope costs, additional transport and improved patient-reported outcomes temper these costs.

As access to breast care improves, technologies which can improve patient care should be explored. Using the model of previous technology adoption such as laparoscopic surgery, cost-effectiveness can be weighed against long-term outcomes and side-effects despite limited resource settings.

POSTER

Rhee, John

P370 | FACTORS AFFECTING PALLIATIVE CARE DEVELOPMENT IN AFRICA: QUALITATIVE INTERVIEWS WITH IN-COUNTRY EXPERTS

POSTER SESSION TWO

16:30–18:00

Thursday

9 November

Rhee, John¹; Garralda, Eduardo²; Namisango, Eve³; Luyirika, Emmanuel³; de Lima, Liliana⁴; Powell, Richard A.⁵; Robinson, Carole⁶; Centeno, Carlos²
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Background Factors contributing to and detracting from palliative care (PC) development in Africa can provide insight into current strategies for advancing PC.

Aim To identify key factors affecting PC development in seven African countries from in-country PC experts' perspectives.

Methods An interpretive description approach was taken. 16 PC experts from seven countries in Africa were interviewed on PC development in their respective countries. Interviews were semi-structured with open-ended questions and analyzed using constant comparison themes, with the key factors influencing PC within each theme identified.

Results Emerging themes from the data included: drivers, strengths, challenges, and aspirations for PC development in Africa. Drivers included advocates and pioneering organizations, HIV/AIDS, culture of caregiving, and WHA Resolution. Strengths included community health workers, the special role of nurses, diversity of services, and short training courses. Challenges included lack of PC education, lack of standardization in implementation, limited availability of and/or accessibility to morphine, poverty and disease burden, and funding. Aspirations included integration of PC, specialization in PC, nurse prescribing, and strong partnership with the Ministry of Health.

Conclusion The key factors underpinning PC development in the seven African countries contributed to the beginnings of PC in Africa fueled by advocates that built on existing strengths to maximize opportunities. However, the current system is one of high-risk in terms of sustainability and strategies for maximizing existing resources and growing infrastructure support are needed.

PRESENTATION

Rhee, John

THE APCA ATLAS OF PALLIATIVE CARE DEVELOPMENT IN AFRICA: A COMPARATIVE ANALYSIS

**PALLIATIVE
CARE &
OTHER
ABSTRACTS**

14:40–16:30

Wednesday

8 November

Rhee, John¹; Luyirika, Emmanuel²; Namisango, Eve²; Garralda, Eduardo³; de Lima, Liliana⁴; Powell, Richard⁵; Centeno, Carlos³

¹Icahn School of Medicine; ²African Palliative Care Association; ³Institute of Health Research of Navarra; ⁴International Association for Hospice and Palliative Care; ⁵MWAPO Health Development Group

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Objectives To describe the current state of palliative care (PC) development in Africa according to the WHO's Public Health Strategy for integrating PC: policies, availability and access to medicines, education, and service provision.

Methods Qualitative interviews were conducted with 16 Country Experts (March–August 2016). From those interviews, 367 indicators were derived, 130 after exclusion criteria and content analysis were performed. The Country Experts rated the indicators for validity & feasibility, a 14-member international committee of experts participated in a two-round modified UCLA-RAND Delphi consensus, and the co-authors (November–December 2016) ranked the indicators. The final 19 indicators were further defined and sent to 66 Key Country Informants from 51 African countries (January–March 2017).

Results Surveys were received from 89% (48/54) of African countries. Uganda, South Africa, and Kenya have the highest number of specialised hospice and PC services (71% of identified PC services); 19% (9/48) have no identified hospice and PC services. 22% (12/48) indicated having stand-alone PC policies, and 42% (20/48) reported having a dedicated person for PC in the Ministry. Zambia, Uganda, South Africa, Kenya, Ghana, and Egypt reported some official form of physician accreditation. Opioid consumption per capita was low (75% countries had <1 mg consumption/capita/year) compared to the global average (62mg/capita/year), with highest consumption in Mauritius, South Africa, Namibia, and Morocco. 54% (26/48) reported having a national PC association.

Conclusions This study shows that there is limited PC development in Africa, but there is also a significant improvement in the number of countries with hospice and PC services, compared to previous reports. Improvements in advocacy were identified, with more than half of countries reporting a national PC association. Governments need to take the steps to improve education, increase the number of services, and ensure safe access to opioids.

POSTER

WELCOME
RECEPTION
AND POSTER
SESSION ONE

16:30–18:00

Tuesday

7 November

Richardson, Micheler Ricardo

**P011 | ACTIVATOR OF G-PROTEIN SIGNALLING 3 (AGS3)
MODULATES PROSTATE CANCER DEVELOPMENT AND PROGRESSION**

Richardson, Micheler Ricardo¹; Adekoya, Timothy¹; Smith, Nikia¹

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Objective Prostate cancer (PCa) is a leading cause of cancer death among men, with greater prevalence of the disease among the African American population in the US. AGS3, a receptor-independent activator of G-protein signaling, has been shown to affect different cellular processes and cell cycle activity. The aim of this study is to assess the role of AGS3 on the development and progression of prostate cancer as well as to understand the molecular dynamics involved.

Methods To that end commercially available PCa cell lines from African American and white males, xenograft athymic nude mouse model and AGS3 deficient mice were employed to study AGS3 expression, tumor progression and metastasis.

Results Preliminary results indicate a differential in the level of expression of AGS3 in different PCa cells with the African American cell line (MDA PCa 2b) expressing high amount of AGS3 while the Caucasian cell lines (PC3 and LNCAP) do not. Overexpression of AGS3 in PC3 augmented tumor development in nude mice xenografts whereas depletion of AGS3 in MDA PCa 2b decreased tumor size. Interestingly, a xenograft model of Lewis Lung Carcinoma (LLC) cells in AGS3 conditional knockout (AGS3^{-/-}) mice resulted in a significant increase in tumor progression when compared with the wild-type (AGS3^{+/+}) mice.

Conclusions Taken together, these results indicate that AGS3 expression modulates tumor development and progression and may play a role in PCa health disparity.

POSTER

POSTER SESSION TWO

16:30–18:00
Thursday
9 November

Rithara, Stella

P286 | IS INTEGRATION OF PALLIATIVE CARE INTO ONCOLOGY SERVICES OF ANY BENEFIT TO THE PATIENTS

Rithara, Stella¹; Muriithi, Elizabeth²; Kimani, Gloria³

¹Kenya Medical Training College; ²Kenyatta National Hospital;

³University of Nairobi

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Integration is about the organization of various tastes (care) which need to be performed in order to provide a population with good quality health services

Aim To find out from nurses working in palliative care units and oncology clinics the challenges and benefits

Method 30 nurses attended two days oncology symposium, 18 working in oncology clinics and 12 in palliative care units. All agreed oncology is a specialized field for nurses in cancer care as well as palliative care. Working in partnership and avoiding isolation improve patient care

Results Training of oncology and palliative care nurses is vital in order to improve the quality of life for our patients. Palliative care is an essential component of quality oncology care. There is a need for higher education in oncology nursing training in Kenya for a quality of care and job satisfaction. Challenges in integration services and training issues in cancer, the training of nurses at the bedside is not sufficiently adequate as a necessary tool in fight against cancer. Shortage of nurses in referral hospitals and other health institution noted. Most training is inadequate and does not include cancer care. Integration provides quality care to patients in managing their symptoms, while allows oncologists to spend time to evaluate new patients.

Conclusion PCU-oncology integration benefits patients by improving quality of life. Symptoms, mood and caregiver burden. Improving PC/oncology education in nursing school as well as in continuing medical education is crucial to overcome the knowledge barrier among providers. There is need to determine at what stage should palliative care be involved in oncology care.

POSTER

Rithara, Stella

P371 | CLINICAL SUPPORT SUPERVISION IMPROVES PALLIATIVE CARE SERVICES

**POSTER
SESSION**

TWO

16:30–18:00

Thursday

9 November

Rithara, Stella¹; Sidi, Peninah
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Introduction Palliative training at government institution has increased the number of practicing palliative care nurses in different levels of health sector. Kenya medical training college started its higher diploma in palliative care nursing in September 2013. The course takes 18 months and currently the fourth class is on progress. Support supervision is a major boost in improving palliative care services.

Method A survey was done on 58 trained palliative care nurses from KMTC, Nairobi between September 2013–December 2016, 14 KMTC Tutors and 44 clinical nurses.

Results Basic nursing students are qualifying with better understanding of palliative care through trained tutors teaching palliative care hours in nursing curriculum. Improved patient's care through palliative nurses. 85% of PCU managed by palliative nurses across the counties. 75% students' mentors, 80% teaching different campus, 45% enrolled to higher education in palliative, students' clinical performance improved 70% compared first class, 60% county nurses aware of training at KMTC. 80% lack of palliative books and reference materials. 65% lack of supportive care locally and internationally. 40% oncology included in palliative training and 90% need more oncology in the program. 90% improved palliative care while integrated with oncology while 10% not referred.

Conclusion There is need for more interaction between newly qualified palliative nurses and seniors in the field. Attend seminars/conferences and symposiums to learn new knowledge and skills. Support to improve reference materials in learning institutions. Integrate palliative care and oncology as a better follow-up of care.

POSTER

Rithara, Stella

P372 | PERCEPTION OF PALLIATIVE CARE COURSE AMONG OTHER PROGRAMS IN A GOVERNMENT LEARNING INSTITUTION

**POSTER
SESSION**

TWO

16:30–18:00

Thursday

9 November

Rithara, Stella¹; Marete, Joyce¹

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Background Kenya medical training college started a higher diploma course in palliative care nursing in September 2013 as a new program in Nairobi Campus. The program runs in 18 months as distance learning with clinical placements at Hospices and PCU.

Aim To find out challenges experienced enrolling palliative care nursing among other programs.

Method A survey done across KMTC campus offering eight (8) higher Diploma courses. This included critical care, preoperative, paediatric, anaesthesia, psychiatric, Community HIV/AIDS, Ophthalmology and palliative care.

Results Palliative care is a multidisciplinary course and scaling to only nurses raised lot of challenges toward enrolments of students. 80% students focused the course as dealing with death, 70% as draining program due to patients demands, 75% preferred fulltime course unlike distance learning, 60% lack of county health officers recognizing palliative care as one of key areas, 20% applied but denied course approval, 40% lack of awareness of the program. Not all hospital has palliative care units and there are few active hospices. 70% clinical areas are very far from their working stations. Lack of continues education on the palliative care needs by the trained nurses. 30% indicated the challenges uncouneted by their colleagues and hard to cope with, like lack of Opioids and other palliative care materials. Health workers fear of Opioids drugs and care involved in caring of palliative patients.

Conclusion Awareness of the course in different hospitals, clinics and organization. Introduce short course certificate to offer overview of the course. Sensitize the importance of the course to all health institution across the country.

POSTER

POSTER SESSION TWO

16:30–18:00
Thursday
9 November

Rositch, Anne

P312 | APPLYING THE QUALITY IN THE CONTINUUM OF CANCER CARE FRAMEWORK TO ASSESS CANCER CARE SYSTEM READINESS IN TANZANIA, UGANDA, AND SWAZILAND

Rositch, Anne¹; Lilly, Katie²; Nelson, Ann³; Milner, Dan⁴

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Objectives The American Society for Clinical Pathology (ASCP) developed an assessment survey to determine capacity of Sub-Saharan African clinical sites to carry out anatomic pathology and cancer care services, in order to implement a telepathology program with linkage to care and treatment. We aim to present a current picture of the pathology landscape at clinical sites in 3 countries, as well as the systemic roadblocks that exist along the continuum of care, with a focus on cancer diagnostics services.

Methods The survey was sent to representatives at Kilimanjaro Christian Medical Centre in Tanzania, Mbarara University in Uganda, and Mbanane Government Hospital in Swaziland. Data were compared across sites to identify common themes and challenges both from a patient and health system perspective. Common thematic areas related to pathology system improvements were identified as potential targets for ASCP support.

Results Numbers of pathology labs in each country range from 1 in Swaziland to 11 in Uganda, and all sites receive specimens from referring facilities without pathologic capabilities. There is a severe shortage of pathologists to respond even to current needs: there are 22 fully-boarded anatomic pathologists in all of Tanzania (0.044 per 100,000 people), 20 in Uganda (0.055/100,000), and 3 in Swaziland (0.23/100,000), compared with 17,500 in the United States (5.49/100,000). In addition, there are also a limited number of pathology trainees: 1 in Swaziland, 7 in Uganda, and 14 in Tanzania. Patients are often referred through several steps in the health system before reaching a site with diagnostic capacity and appropriate treatment options. Once arriving in a pathology lab, time needed to diagnose specimens is up to two weeks depending on availability of pathologists and functionality of equipment.

Conclusion Pathological diagnostics are a vital component of the cancer continuum of care, yet pathology laboratories are extremely limited in Sub-Saharan Africa and they lack adequate human and material resources to meet the needs of Africa's growing cancer burden. Complete survey results will be interpreted according to the Continuum of Cancer Care (QCCC), in order to identify gaps beyond pathology including risk assessment, detection, treatment, and the transitions between each step in the continuum.

PRESENTATION

**EVIDENCE
TO POLICY:
CANCER
CONTROL
PLANNING**
14:40–16:30
Wednesday
8 November

Rositch, Anne

THE ROLE OF DISSEMINATION AND IMPLEMENTATION RESEARCH IN CANCER CONTROL PLANNING, IMPLEMENTATION AND EVALUATION

Rositch, Anne¹

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Background In the context of cancer control, implementation research investigates different ways to use or adapt existing evidence-based interventions, in a specific context, to ultimately reduce cancer incidence and mortality. Because implementation science generally uses an iterative process of both quantitative and qualitative methods, researchers can go beyond describing the performance of a program to understanding drivers and barriers to success. Thus, data from implementation research can both inform cancer control planning, and result from studies that test various strategies as a consequence of cancer control policies.

Aim Key theories and methods in dissemination and implementation science will be presented, using our ongoing “Time to ACT” study for breast cancer control in Tanzania as a guiding example. This study promotes the concept of translating evidence into policy by assessing the current context for breast cancer control, coupling that evidence to feasible control strategies, and testing the success of implementing those strategies.

Conclusions Implementation science can provide the evidence needed to inform and select strategies for cancer control that are well suited to the local context, and thus are likely to be feasible, acceptable, scalable, and sustainable. If the intervention itself is the “what” then the implementation strategy is the “how.” Just as we consider evidence-based interventions in our cancer control planning, we should look towards also using evidence-based implementation strategies to maximize the success our cancer control programs and policies, from the community and clinic-level up to national programs.

POSTER

Rubagumya, Fidel

P326 | NEEDS ASSESSMENT FOR POPULATION-BASED PAEDIATRIC CANCER INTERVENTION IN RWANDA

**POSTER
SESSION
TWO**

16:30–18:00

Thursday

9 November

Rubagumya, Fidel¹; Chavez, Summer²; Blavo, Cyril²; Hardigan, Patrick²; Marriott, Oneka²

¹Rwanda Children's Cancer Relief; ²International Health Initiative Inc.

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Objective Lack of cancer registries and cancer centers that assist in early diagnosis, treatment and reporting of treatment outcomes limit information about pediatric cancers in developing countries. International Health Initiatives (IHI), a non-profit health organization, has initiated assessment of specific needs for cancer care in vulnerable children in Rwanda with a plan to develop a comprehensive childhood cancer care program. IHI and the Rwanda Children's Cancer Relief organization collaborated to create an international partnership named Rwanda Health Initiative Needs and Outreach (RHINO) that has conducted a situational assessment of childhood cancer in Rwanda.

Method An anonymous survey was administered to local healthcare providers in Rwanda to assess their knowledge about pediatric cancers and determine the use of local resources in the care of pediatric cancer patients. The analysis of the survey informs the current status of pediatric cancer in Rwanda and serves as a basis for a plan to implement a children's cancer initiative.

Results 515 healthcare workers throughout Rwanda completed the survey. Approximately 90% of the respondents reported they have not received any specific education on pediatric cancer. About 40% of the respondents believe that families in Rwanda first seek traditional healers and then seek hospital care when traditional options fail. More than 90% of respondents reported that less than 25% of families could afford treatment without severe financial burden. Blood work and x-rays were the diagnostic studies most commonly available.

Conclusion Results show that health care workers in Rwanda are generally not adequately trained to manage the care of pediatric cancer patients. The data further shows that Rwanda is limited in terms of health infrastructure and technological development to deal with the complexity of treating childhood cancers. . This information will assist in implementing programs to educate health workers, establish children's cancer services, enhance infrastructure and apply technology (such as telemedicine) to facilitate and enhance the quality of and access to care for childhood cancer in Rwanda.

PRESENTATION

Rubagumya, Fidel

ROLE OF CHILDHOOD ORGANIZATIONS IN CANCER CONTROL AND ADVOCACY

**PAEDIATRIC
ONCOLOGY**

14:40–16:00

Friday

10 November

Rubagumya, Fidel¹

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Across low income settings, resources, while limited, are focused on building infrastructure for the delivery of cancer care and access to medication or therapies. Often neglected, but critical, is the provision of social support to patients and their caretakers and building community awareness of cancer. Through a focus on social determinants and common community understanding, organizations in childhood cancer play a key role in pediatric cancer advocacy and control. Rwanda Children's Cancer Relief (RCCR) provides a case study in the creation and implementation of Rwanda's first childhood cancer organization. RCCR's development models how in spite of clinical services available, providing social supports to patients and their care takers builds a broader community understanding. This understanding facilitates stronger advocacy among local leaders and translates to increased numbers of patients seeking care earlier. The RCCR design provides a framework for the development of childhood cancer organization across limited resource settings.

PRESENTATION

Rubagumya, Fidel

THE ROLE OF CHILDHOOD CANCER CIVIL SOCIETIES IN CANCER CONTROL IN LOW INCOME COUNTRIES

CANCER
ADVOCACY
& OTHER
ABSTRACTS

Rubagumya, Fidel¹; Mutabazi, Jean Claude¹; Bishumba, Richard¹; Kabogo, Janvier¹; Nuwagaba, Francis¹; Manirakiza, Achille¹
¹Rwanda Children's Cancer Relief

11:00–12:30

Thursday

9 November

Correspondence fidel.rubagumya@yahoo.com

Background/Objectives Over 250,000 new pediatric cancer cases are diagnosed yearly worldwide. In the developing countries, the childhood cancer burden is estimated to increase even more. Rwanda Children's Cancer Relief (RCCR) is a nonprofit organization with a mission to ensure that children with cancers access high standards of treatment and support. After realizing that majority in our community lack information on childhood cancers, our efforts since 2014 has been concentrated on raising awareness of childhood cancers.

Methods Many activities are carried out in September during the RCCR Annual Childhood Cancers Awareness Month. We involve community health workers, private sectors and academic institutions. We focus on talks, community outreaches and Childhood Cancers Awareness. Trained volunteers with informative brochures, posters in both local and international languages comprising information on early symptoms of childhood cancers, ways to navigate referral system among others are used during community outreaches. These activities are aired on national radios and TVs, newspapers and social media are also used to spread information.

Outcomes 2016 campaign included the fore mentioned activities and was concluded by a walk dubbed (#KidsCancerWalk2016 which attracted more than 600 participants. Two local TVs, 6 Radios and 7 online diaries covered the campaign in its different phases. More than 800 posters, 950 brochures and 300 flyers were distributed followed by intensive online campaign with more than 100 Facebook posts, 350 Tweets and 700 Retweets. Strong partnerships with private, public sectors were created and Ministry of health approved September as the national childhood cancer awareness month following RCCR campaigns.

Conclusion Childhood cancers are fatal when left untreated but treatable when they are detected at an early stage. Activities that RCCR carry out on annual basis increase the general population knowledge about childhood cancers. Civil societies like RCCR play a crucial role in addressing the growing burden of childhood cancers and the disparities in access to and quality of care. They can also influence policy changes and address the specific patients' and community needs.

PRESENTATION

Ruff, Paul

ACCESS TO CANCER THERAPEUTICS IN LOW AND MIDDLE INCOME COUNTRIES

**QUALITY
TREATMENT
IN LOW
RESOURCE
COUNTRIES**

11:00–12:30

Tuesday

7 November

Ruff, Paul¹; Al-Sukhun, Sana²

¹University of the Witwatersrand; ²University of Jordan

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Since the turn of the century, we have seen a paradigm shift in how we treat cancer, with the advent of targeted therapies, especially monoclonal antibodies and small molecule kinase inhibitors. Indeed the advent of imatinib in CML and rituximab in B-cell lymphomas have been considered amongst the greatest developments in cancer care in 50 years. Unfortunately, many new therapies that significantly improve cancer outcomes are not available to everyone, especially in LMICs. The cost of new anticancer medicines is increasing, with the average monthly cost of some newly released kinase inhibitors being over US\$12,000 per month, and over US\$150,000 for a course of monoclonal antibodies. These costs have long been out of range of most LMICs, and are excessive even for HICs. The treatment of cancer has always been costly and difficult to access be it surgery, radiation or systemic therapy. Radiation machines are costly and limited in LMICs, while chemotherapy drugs have always been difficult to access since they first became available in 1950s. There are no easy solutions to drug costs as pharmaceutical companies need to make profits to enable their developing new medicines, knowing that not all medicines undergoing study come to market and that antineoplastic agents, especially biologicals, are difficult and costly to produce. However, the current model of oncology medicine development and distribution needs to change before it is too late. There must be collaboration between academia, individual pharmaceutical companies, as well as between regulatory authorities, governments and WHO, to avoid the situation in some cancers, where we now have too many agents on the market. Collaboration can reduce research and development costs by streamlining the regulatory burden and expedite registration of medicines with significant benefits over those with limited benefits, whose development should be halted as early as possible. “Evergreening” must also be prevented – extending patents is detrimental to patients in both developing and developed countries. International collaboration in the development of good quality generics and biosimilars will also help make new molecules available more rapidly to all patients. Development of EMLs, both in individual countries as well as internationally by WHO, will also make the use of cancer medicines more cost effective and less wasteful. Unless we all work together to find a solution, cancer care will be available to only the very wealthy. Indeed we are seeing the development of more and more exciting treatments for less and less people.

PRESENTATION

Ruff, Paul

MOLECULAR GENETICS OF GASTROINTESTINAL CANCERS

Ruff, Paul¹

¹University of the Witwatersrand

GIT:

PANCREAS

AND

STOMACH

11:00–12:30

Friday

10 November

Correspondence pruff@iafrica.com

The development of human cancer is related to a combination of underlying genetic abnormalities, as well as environmental factors including diet, infection and smoking. In 1988, Vogelstein, in studies of colorectal cancer (CRC), proposed that “cancer is caused by sequential mutations of specific oncogenes and tumor suppressor genes”.

Familial adenomatous polyposis (FAP) is dominantly inherited with numerous colorectal adenomatous polyps. Although initially benign, malignant transformation occurs when untreated. In 1991, Vogelstein and others discovered the tumor suppressor APC gene, on chromosome 5, responsible for FAP. Subsequent work showed APC binding to beta-catenin, stimulating its degradation, and that somatic APC mutations initiated CRC. Vogelstein and others localised causative genes for Hereditary Non-Polyposis Colorectal Cancer (HNPCC) through linkage studies, leading to the identification of mismatch repair genes including MSH2 and MLH1 responsible for most cases of HNPCC. Since 2004, “exome sequencing”, uncovered further novel CRC genes, including PIK3CA, IDH1&2, ARID1A&2, ATRX, DAXX, MLL2, MLL3, CIC, and RNF43.

Clinical studies of anti-EGFR monoclonal antibodies, cetuximab and panitumumab, in mCRC, showed KRAS exon 2 mutations predicting resistance in ~40% of patients due to autonomous signaling of RAS/RAF/MEK/MAPK pathway. Exploratory biomarker studies showed KRAS exons 3&4 and NRAS exons 2&3 mutations resulting in anti-EGFR refractoriness in a further 17% of patients, while BRAF exon 15 mutations, found in ~8% of KRAS WT patients, resulted in a poor prognosis. Studies in KRAS WT mCRC showed baseline single (13%) and multiple (6%) gene mutations in NRAS, BRAF, PIK3CA, PTEN, MAP2K1 and KRAS, with 12% patients gaining emergent gene mutations. In addition, HER2 alterations occur in 3-5% of patients with KRAS exon 2 WT mCRC with implications for anti-HER2 therapy. Right-sided CRC location has a poorer prognosis, compared to left-sided tumours, probably related to increased mutations and midgut versus hindgut embryogenesis.

Hereditary diffuse gastric cancer (HDGC) is a rare cancer representing ~1-3% gastric cancers. It is caused by CDH1 germline gene mutations, first described in three Maori families in 1998, resulting in loss of function of E-cadherin cell adhesion protein. HDGC also leads to increased risk for lobular breast cancer. Patients inheriting CDH1 mutations are at risk for gastric cancer at a young age, however early detection is difficult due to submucosal location. ~22% gastric cancers are HER2-positive making them candidates for anti-HER2 therapy. RAS and BRAF mutations are rarer in gastric cancer than CRC with reports of 1–10% RAS and ~2% BRAF mutations including some concurrent mutations.

PRESENTATION

Ruhangaza, Deogratias

HOW DIGITAL PATHOLOGY IS IMPROVING CANCER DIAGNOSIS IN RURAL SUB-SAHARAN AFRICA. THE EXPERIENCE OF BUTARO HOSPITAL, RWANDA

**RADIATION
& OTHER
ABSTRACTS**

08:25–09:25

Friday

10 November

Ruhangaza, Deogratias¹; Milner, Danny²; Greenberg, Lauren³; Shyirambere, Cyprien³; Rusangwa, Christian³; Rositch, Anne⁴

¹Ministry of Health / Butaro Hospital; ²American Society for Clinical Pathology;

³Partners in Health / Inshuti Mu Buzima; ⁴Johns Hopkins Bloomberg School of Public Health

Correspondence deoruhangaza@gmail.com

Introduction Rwanda, like many other sub-Saharan African countries, suffers from inadequate numbers of pathologists and pathology infrastructures to face the challenges in cancer diagnosis. In March 2016, the histopathology unit of the Butaro District Hospital laboratory incorporated the use of Digital Pathology as one of the possible solutions to provide rapid cancer diagnosis. With strong commitment from the Rwandan Ministry of Health, the American Society for Clinical Pathology (ASCP), and Partners In Health/Inshuti Mu Buzima (PIH/IMB), the pathology laboratory at Butaro District Hospital in the rural Northern Province was upgraded to an automated and Digital Pathology system.

Objective The aim of this study was to describe the contribution of the Digital Pathology system in improving cancer diagnosis, after one year of its implementation at Butaro District Hospital.

Methodology A Whole Slide Image scanner coupled with Omnyx Digital Pathology application was used to generate digital slides that were shared with selected ASCP volunteer pathologists, who were able to provide rapid cancer diagnosis. The local pathologist sent digital slides coupled with patient's clinical information through a secured cloud based Omnyx system. Images were reviewed remotely by ASCP volunteer pathologists who provided feedback and diagnosis. The turnaround time for this new method for diagnosis was also calculated.

Results Within one year, a total number of 1411 patients were given a diagnosis using the new Digital Pathology tools, with 6479 digital slides generated. Among all patients, 560 (40%) were diagnosed with cancer. An expert second opinion was obtained through Digital Pathology cloud-based image sharing for 89 cases (16%). The mean turnaround time for these digitally-shared cases was less than 3 days (63 hours), compared to the average 4 weeks needed when tissue has to be sent to USA for expert review and diagnosis.

Conclusion Digital Pathology is showing a great improvement in cancer diagnosis in our rural setting and has contributed in facilitating the process of consulting experts for accurate and timely cancer diagnosis.

POSTER

WELCOME RECEPTION AND POSTER SESSION ONE

16:30–18:00

Tuesday

7 November

Ruhangaza, Deogratias

P198 | PATHOLOGY CHARACTERISTICS OF CUTANEOUS INVASIVE MELANOMA DIAGNOSED AT BUTARO DISTRICT HOSPITAL, RWANDA

Ruhangaza, Deogratias¹; Milner, Danny²; Fehr, Alexandra E.³

¹Ministry of Health / Butaro Hospital; ²American Society for Clinical Pathology;

³Partners In Health / Inshuti Mu Buzima

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Background At the Butaro Cancer Center of Excellence (BCCOE), a national cancer referral center at Butaro District Hospital in rural Rwanda, many patients with cutaneous malignant melanoma first present at an advanced stage of disease. A complete pathology report with all prognostic information is very critical for better management of this type of cancer. The main objective of this study was to present the major prognostic-related pathology characteristics of invasive cutaneous melanoma patients diagnosed at BCCOE.

Methodology Data were collected from the pathology reports and slides of patients presenting to BCCOE for diagnostic services between January 2015 and December 2016. Data collection focused on pathology prognostic characteristics (location, ulceration, mitotic count, excision margins status, lymph nodes status) and demographic information. Incomplete pathology information was also assessed by the pathologist. Omnyx Digital Pathology application was used to measure the Breslow thickness and the number of mitoses/mm². Descriptive statistics were calculated in SPSS 16.

Results A total number of 50 cases were diagnosed as cutaneous melanoma in the study period. The age range was 16–86 years with a mean age of 56 years. At 80%, acral skin on extremities was the most common location. Excision biopsies were conducted for only 36% of patients and complete surgical excision was found in 67% of cases. 96% of tumors showed epidermal ulceration. Breslow thickness was >4mm in 94% (47 cases) with predominance of T4b lesions (94%), and mitoses were >1/mm² in all cases. Regional lymph nodes involvement was noted in 38% with predominance of N3 status at 57%. Immunohistochemistry was necessary in 28% of cases only. At least one important prognostic information was missing in 54% of the reports and information on distant metastases was absent in all cases.

Conclusion At BCCOE, patients with cutaneous invasive melanoma consult at an advanced stage. There is a need to raise the awareness among patients and clinicians about the importance of tissue biopsy for all persisting skin lesions. Some prognostic information was missing in pathology reports. We recommend the use of a minimum data set for pathology reporting of melanoma.

PRESENTATION

Ruhangaza, Deo

QUALITY PATHOLOGY THROUGH LEAPFROG TECHNOLOGY AND TELEPATHOLOGY

**QUALITY
TREATMENT IN
LOW RESOURCE
COUNTRIES
(cont.)**

14:40–16:30

Tuesday

7 November

Ruhangaza, Deo¹

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One of the challenges in cancer diagnosis in Sub-Saharan Africa is lack of adequate number of anatomical pathologists and pathology infrastructures. Many Sub-Sahara African countries have less than one anatomical pathologist per million populations. For example, Rwanda has six anatomical pathologists with around twelve million populations. The neighboring Burundi country has only two pathologists for more than eleven million people. In contrast, western countries like United States of America have more than sixty pathologists per million populations. This lack of personnel and adequate infrastructure is added to lack of awareness about cancer and the consequence is a delayed diagnosis with majority of our cancer patients being diagnosed at an advanced stage where chances for complete cure are minimal. One of the possible solutions is to upgrade the few available pathology laboratories by incorporating leapfrog technology and telepathology, to make the routine pathology lab workflow easy for few pathologists on site and reduce turnaround time. For example, the Butaro Cancer Centre of Excellence (BCCOE) in a remote rural area of Northern Province of Rwanda has incorporated the technology of Digital Pathology in cancer diagnosis since March 2016. New technology can also facilitate distance pathology expert consultation and telepathology diagnosis therefore improving quality of pathology services. This can be possible with volunteer partnership with institutions that have more pathologists and pathology infrastructure. For pathology routine histology sample processing, rapid high volume tissue processors and autostainers as well as high volume tissue automated embedding machines are available to make the histotechnology workflow easy. Whole Slide Image (WSI) system coupled with image viewer and image analysis applications are also available and can facilitate telepathology and image sharing with pathology experts. WSI offers many advantages like high resolution images, possibility of editing, saving, sharing, easy retrieval of cases, digital library of slides and patient's clinical information. The challenge of using this technology is the cost and sustainability: new automated equipment cost and maintenance as well as the cost of rapid internet used for image transfer may be expensive for a resource poor setting. This justifies the selection of few sites where upgraded pathology laboratories can be implemented in a country. It also implies the creation of a system of sample transportation from remote hospitals to the selected upgraded pathology centers for diagnosis as well as a secured way of delivering pathology results back to remote hospitals of origin.

PRESENTATION

Rulisa, Stephen

HPV VACCINE INTRODUCTION IN RWANDA: IMPACTS ON THE BROADER HEALTH SYSTEM

**PREVENTION
& SCREENING
FOR CERVICAL
CANCER IN
AFRICA**

11:00–12:30

Tuesday

7 November

Rulisa, Stephen¹

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Rwanda was the first country in Africa to introduce the human papillomavirus (HPV) vaccine. This was achieved through multi-year school-based campaigns. Our study evaluated the impact of the HPV vaccine introduction on the country's immunisation programme and health system.

Methods Thirty key informants were interviewed at national and district levels, and in participating schools. Twenty-seven health facilities completed a questionnaire exploring the effects of the new vaccine introduction on six health system building blocks, as defined by the World Health Organization. Routine service activity data were collected during a 90-day period around the introduction.

Results Routine vaccination activities were not disrupted during the delivery, likely due to a strong Expanded Program on Immunization, appropriate planning and a well-resourced operation. Opportunities were seized to co-deliver other interventions targeted at children and adolescents, such as health promotion. Collaboration with the Ministry of Education was strengthened at national level. Although there were some temporary increases in staff workload, no major negative effects were reported.

Conclusion Despite its delivery through school-based campaigns, the HPV vaccine integrated well into the immunisation programme and health system. The introduction had no major negative effects. Some opportunities were seized to expand services and collaborations.

POSTER

POSTER SESSION

TWO

16:30–18:00

Thursday

9 November

Safari, Lambert Christophe

P373 | OPIOIDS AVAILABILITY AND CONSUMPTION IN RWANDA: A PROXY INDICATOR OF PALLIATIVE CARE PROGRESS

Safari, Lambert Christophe¹; Nyiligira, John²

¹Rwinkwavu District Hospital; ²National University of Rwanda

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Background Opioids analgesics are the mainstay in the patient pain management; they are especially useful in palliative care. They are among the essential medicines that WHO has set to allow the government and competent authorities to use rationally. Nowadays, the number of cancer patients especially related to the HIV/AIDS is increasing daily. These patients need to be treated effectively and accordingly without exercising pain; and this necessitates that opioids analgesics be available any time they are needed. Hence, a qualitative retrospective chart review study on opioids analgesics was conducted to determine the available opioids analgesics and their consumption trends in Rwanda for the period of five years from 2008 to 2012.

Aim The goal of this study was to survey the opioids availability and to compare their consumption trends in Rwanda from 2008 to 2012 in regards to palliative care.

Methods The study was conducted in 20 hospitals located in different provinces of Rwanda via the department of pharmacy of each hospital. The Pharmacists were given a pre-prepared questionnaire to fill, and thereafter there was inspection of pharmacy recorded data that were filled in the pre-prepared consumption table chart. This study was conducted within a period of seven months from November 2012 to May 2013.

Results The available opioids analgesics in Rwanda are Morphine (oral & injection), Pethidine inj., Tramadol (Oral & injection), Fentanyl inj., Pentazocine inj., Codeine tablet and Naloxone injection which is the only existing opioids receptors antagonist. Their consumption is still low because they are still used to treat some specific groups of patients and many regulation barriers are major problems. There is a general mean annual increase in opioids consumption of 3 folds accounting for 60% for the past five years from 2008 to 2012.

Conclusion In general, opioids availability and their consumption are still poor despite their usefulness and need in Rwanda, especially in palliative care and patient pain management. There is an emergency need to increase the quantity of opioids entering in Rwanda so that a good availability of all different formulations of opioids in sufficient quantities for all patients to have access to them. The government of Rwanda is recommended up to revise opioids needs for the Rwandan population.

POSTER

WELCOME RECEPTION AND POSTER SESSION ONE

16:30–18:00

Tuesday

7 November

Sahabi, Saddiku M

P074 | CANCER OF THE CERVIX IN SOKOTO, NORTH-WESTERN NIGERIA – A HISTOPATHOLOGICAL REVIEW

Sahabi, Saddiku M¹; Nnadi, Daniel C.¹; Umar, Mohammed¹; Abdullahi, Kabiru¹

¹Usmanu Danfodiyo University / Teaching Hospital

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Background Cancer of the cervix is a disease of public health importance. Widespread comprehensive cervical cancer control programs have resulted in a marked reduction in the incidence and mortality in most developed countries. Developing countries bear over 80% of the global burden, with only 5% of the global resources for the control of cancer. Majority of the cases in these countries present late and are incurable at the time of diagnosis.

Aim and Objectives The aim of this study is to determine the Histopathological characteristic and frequencies of cervical cancer in tertiary health institution in north-western Nigeria. It's hoped that data obtained from this study will form the basis for further intervention on cervical cancer prevention.

Materials and Methods A retrospective review of cervical cancer seen in the Department of Histopathology Usmanu Danfodiyo University Teaching Hospital, Sokoto, over the six (6) year period, from January 2010 to December 2015. The data was validated using Microsoft Excel and exported to SPSS for analysis; the data were analyzed for age, sex and histological types using SPSS version 20.0 software. The results are presented in form of simple frequency percentage and tables.

Result A total of 247 cases of cancer of cervical cancer were seen during the study period. This constituted 55.6% of all the gynaecological malignancies during the studied period. The mean ages of patient with cancer of the cervix were 50.3 with $SD \pm 14.6$, and their age range (3–92) year. Histologically there were 87.9% (218/247) cases of squamous cell carcinoma,, adenocarcinoma 6.1% (15/248), metastatic carcinoma 2.0% (5/247),carcinosarcoma 1.2% (3/247) ,adenosquamous carcinoma 0.8% (2/247), clear cell carcinoma 0.8% (2/247), and small cell carcinoma 0.8 (2/247) respectively. Squamous cell carcinoma occurred most frequent within the 40–49 year of life,

Conclusion This study showed that the squamous cell carcinoma is the most predominant cervical cancer in our centre. This high percentage may be related to some risky sexual behaviour and sociocultural practices such as early onset of sexual activity and multiple sexual partners. More emphasis should be given to screening programs for women in under-developed countries.

POSTER

POSTER SESSION TWO

16:30–18:00

Thursday

9 November

Sahabi, Saddiku M

P227 | PATTERN AND CHANGE IN INCIDENCE OF DERMATOLOGICAL MALIGNANCIES IN USMANU DANFODIYO UNIVERSITY TEACHING HOSPITAL SOKOTO, NIGERIA

Sahabi, Saddiku M¹; Legbo, Jacob Ndas¹; Abdullahi, Kabiru¹

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Introduction Cancers including dermatologic types are a growing health concern and the incidence in resource-poor settings is alarming as provided by data from various researchers.

Aim and Objectives The aim of this study is to determine the incidence of skin cancer and extrapolate if there is a growing incidence of skin cancers in this locality.

Materials and methodology Archives of all histology reports, paraffin blocks and Haematoxylin and Eosin as well as special stain and other immunohistochemical-stained tissue slides and of patients' biopsies that had been stored from 2006 to 2015 were studied. Only malignant skin lesions were considered in the study. The data were validated using Microsoft Excel and analysed for age, sex, site and histological diagnosis. The results are presented in form of simple frequency percentage and tables. Data were compared with previous incidence study(s) done in the area.

Result A total of 325 cases of malignant skin neoplasms were reviewed accounting for 8.3% of all malignancies diagnosed during the study period. 185 (56.9%) were males and 140 (43.1%) were females with a male to female ratio of 1.3:1. The mean age of patient presented with malignant skin lesion was 47.9 with SD ± 15.91 and the age range was (4–80). The top five skin cancers were squamous cell carcinoma which account for 169 (52.0%), followed by malignant melanoma 61 (18.8%), metastatic carcinoma 35 (10.8%), dermatofibrosarcoma protuberans 9 (2.8%), and basal cell carcinoma 8 (2.5%).

Conclusion This study showed that Squamous cell carcinoma was the most predominant malignant neoplasm of the skin in our region, so education and public enlightenment on the importance of seeking medical attention are necessary tools to reduce the incidence, morbidity and mortality associated with malignant lesions of the skin.

POSTER

WELCOME RECEPTION AND POSTER SESSION ONE

16:30–18:00

Tuesday

7 November

Saibu, Gbemisola

P094 | GENE EXPRESSION MODULATORY EFFECT OF PARTIALLY-PURIFIED ACTIVE FRACTIONS OF FOUR NIGERIAN INDIGENOUS PLANTS ON CERVICAL CANCER CELL LINE (HELA)

Saibu, Gbemisola¹; James, Babatunde²; Fadaka, Adewale³; Adu, Oluwatosin¹; Magbagbeola, Olubunmi²; Meyer, Mervin¹

¹Lagos State University; ²University of Lagos; ³Afe Babalola University

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Introduction Despite the increase in the usage and coverage of vaccines, cervical cancer still remains a major public health concern in developing countries. In viral carcinogenesis, the modulation of suppressor proteins such as retinoblastoma (pRb), Bak, Bax and p53 and cellular oncogenes over-expression has been subject of investigation lately. The aim of this study was to investigate the gene expression modulatory effect of partially purified active fractions of Piper guineense (*P. guineense*), Zanthoxylum zanthoxyloides (*Z. zanthoxyloides*), Amaranthus viridis (*A. viridis*), and Catharanthus roseus (*C. roseus*) in Cervical cancer cell line (HeLa cells).

Experimental Design: Cervical cancer cell lines were treated with 1:100 dilutions of IC50 values of each of the fractions. PCR primers for selected genes implicated in cervical cancer were designed according to reference sequences obtained from NCBI. Total cellular RNA was extracted. RNA quality was checked using Nanodrop spectrophotometer and all RNA samples were normalised. Gene expression was monitored in oestrogen receptor- α , p53, retinoblastoma and NQO1 genes by semi-quantitative reverse transcription-polymerase chain reaction (RT-PCR).

Results Total RNA isolated from all the treatment groups indicated high-quality samples with minimum degradation. ESR- α was significantly ($P < 0.05$) downregulated 1.0-fold change by *P. guineense*, (0.8 fold) *C. roseus* and (0.6 fold) *A. viridis*. Only *P. guineense*-HF had a significant ($P < 0.05$) 0.2-fold up-regulation of P53 gene which was followed by a non-significant ($P > 0.05$) upregulation by *Z. zanthoxyloides*; while other treatment groups showed downregulation of P53 gene. There was no up-regulation of Retinoblastoma (Rb) and significant ($P < 0.05$) downregulation of NQO1 gene was observed in groups treated with Camptothecin, *C. afer*-EAF, *C. roseus*-CF, *P. guineense*-HF, and *A. viridis*-EAF showing the most downregulation effect of about 3.8 fold change.

Conclusions These plant fractions may therefore provide anti-proliferative properties by their expression modulatory effect on genes implicated in cervical cancer.

PRESENTATION

Saidu, Rakiya SCREEN AND TREAT IN DEVELOPING COUNTRIES

PREVENTION & SCREENING FOR CERVICAL CANCER IN AFRICA (cont.)

14:40–16:30

Tuesday

7 November

Saidu, Rakiya¹

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Prevention of Cervical cancer using cytology-based screening programmes in high-income countries is a success story in cancer prevention. This also demonstrates the glaring disparities in cervical cancer incidence, morbidity and mortality due to differences in access to quality cervical cancer screening between the rich and the developing countries. Screen-and-treat (SAT) strategies are simple screening algorithms recommended to overcome some of the challenges of cytology-based screening, especially in low and middle-income countries. Studies suggest that SAT method may decrease cervical cancer incidence and mortality significantly. There is, however, uncertainty as to which test and which treatment to offer in national programmes across LMIC.

Which test? The screening tests recommended for SAT strategies are non-cytology based tests, visual inspection of the cervix using acetic acid (VIA) and testing for high-risk HPV (HPV DNA test).

VIA is a point-of-care test that can easily be learned by non-physician providers and does not require sophisticated equipment or laboratory and hence is very cheap. However, the performance characteristics of VIA as a screening test are poor. While it is easy to train health-care workers, the challenges or re-training and maintenance of quality control of VIA driven programmes are enormous. There is an overwhelming amount of scientific evidence that testing for HPV DNA is considerably superior to cytology based screening tests. New point-of-care rapid molecular HPV tests that require little or no laboratory expertise have been developed, making the HPV-based SAT programmes potentially more feasible in developing countries. In 2016, we demonstrated that using Xpert HPV assay, restricting the HPV types and adjusting the cycle threshold cut-off for detecting HPV could greatly improve the specificity of HPV DNA testing while maintaining sensitivity, particularly in HIV positive women.

Which treatment? Ablative forms of treatment are recommended in the SAT settings. Cryotherapy, a strategy endorsed by the WHO, has been widely used in many developing countries. The traditional cryotherapy, however, is cumbersome and fraught with lack of availability of gas and its prohibitive cost. Thermocoagulation (previously cold-coagulation), which has been available in the developed countries for decades is gaining popularity, with more publications emerging from the developing countries.

Going forward SAT for cervical cancer in developing countries is still emerging. With the overwhelming evidence for the superiority of HPV test for the screening (and newer point-of-care technologies being developed), HPV-based screen-and-treat is well suited as a screening test for developing countries.

PRESENTATION

CERVIX AND GYNAECOLOGICAL CANCERS (cont.)

11:00–12:30

Thursday

9 November

Saidu, Rakiya

VULVAR CANCER, IMMUNE SYSTEM, HPV AND HIV

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Vulvar cancer represents about 5% of all gynaecological malignancies. The most common type is vulvar squamous cell carcinoma (vSCC) which accounts for about 90% of all vulvar cancers. There are two distinct types of squamous cell carcinoma of the vulva, HPV-associated and HPV-independent vulvar cancer. Over time, surgery for vulvar cancer has become less radical, which results in less morbidity, but increase in local recurrences as strongly suggested by some studies hence the need to develop new prognostic markers that may accurately guide treatment plans for patients with vSCC. However, this is an area of research that is currently full of debate and controversy.

HPV, p16 and vulvar cancer HPV is involved in the pathogenesis of between 18-75% of vulvar cancers depending on the geographic area. HPV 16 is the most common HPV genotype associated with vSCC cancer. Unlike in oropharyngeal squamous cell carcinoma, the prognostic importance of HPV is still not well established. Establishing this relationship may well be important, and testing for HPV could then guide treatment plan of these patients, with improved outcomes.

While most studies agree that the status of p16INK4a is a good prognostic marker in vulvar cancer, its position as a surrogate marker for HPV positive vulvar cancer has also recently been challenged.

HIV, HPV and vulvar cancer There is a clear relationship between HIV infection and HPV related anogenital neoplasia. In the presence of HIV infection, there is an increased risk of developing HPV related vulvar cancer. However, unlike the cervix, the complex relationship between HIV, HPV and vulvar cancer is not fully understood.

Immune status of tumour and prognosis of vulvar cancer Various cells of the immune system that either promote or inhibit tumour growth infiltrate solid tumours. Studies have shown that the type, location and density of some of these immune cells in a tumour may have prognostic importance in response to treatment, recurrence and survival. There are very few studies and with conflicting results on the prognostic importance of immune cell infiltration of tumour in vulvar cancer. Some studies suggested that presence of immune cells is a good prognostic factor and others suggest no prognostic importance of these cells.

Conclusion Clarifying the role of HPV, HIV, and the immune system in vulvar cancer may hold the key to prognosticate better, guide treatment decisions and possibly lead to new treatment approaches for this cancer.

POSTER

Salami, Mudasiru

P241 | BRONCHOGENIC CARCINOMA JOURNEY OF CARE IN NIGERIA – NEED FOR PARADIGM SHIFT

**POSTER
SESSION**

TWO

16:30–18:00

Thursday

9 November

Salami, Mudasiru¹; Ogunbiyi, Olufemi¹; Adebiji, Akindele¹

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Background Lung cancer is the most common cancer in the world. Primary tumours of the lung are supposedly not common in Nigerians. Reports from Nigeria suggests early age of presentation usually with advanced disease which precludes curative surgical resection in most cases. The prognosis for patients with lung cancer remains dismal, with a five-year survival rate of 14 percent.

Objectives to examine any change in trends of presentation, treatment strategies and outcome in patients presenting with bronchogenic carcinoma.

Methods We conducted a ten-year retrospective review of patients who had confirmed diagnosis of bronchogenic carcinoma in Ibadan Cancer Registry between January 2006 and December 2015. Demographic and clinical information of each patient including the age at presentation, sex, presenting symptoms, mode of diagnosis, pathological morphology, treatment modality and outcome were evaluated. Statistical analysis was carried out descriptively using SPSS.

Results A total of 245 patients were diagnosed with bronchogenic carcinoma in the ten year study period. Their age ranged from 8–99 years with a median age of 58 years. There were 152 males and 93 females (male to female sex ratio was 1.63). Histological diagnosis was obtainable in 89 (36.3%) patients with adenocarcinoma being the commonest 60 patients (24.5%), others were squamous carcinoma 35 patients (14.3%), and small cell carcinoma 15 patients (6.1%). Cytological confirmation of malignancy was possible in 51 patients, (20.8%). However, 80 patients (32.7%) were clinically diagnosed. Majority of the patients presented with advanced disease usually with haemorrhagic pleural effusion. Surgical interventions (chest tube insertion, lobectomy or pneumonectomy) were done in 40 (16.3%) patients, 16 patients (6.5%) had radiotherapy while chemotherapy was administered in 37 patients (15.1%). Lung-cancer specific treatment was not carried in about 43% of the patients due to delay in diagnosis and cost of care.

Conclusion The results of the present study show that the commonest histological type of bronchogenic carcinoma is adenocarcinoma in Nigerians. The common presentation in middle age at an advanced stage and poor treatment take up; calls for increased public awareness. The diagnostic armamentarium and treatment protocol also need to be upgraded to improve the rate of histological diagnosis, tumour typing and appropriate targeted therapy as obtainable in developed countries. We recommend prospective multicentre studies of clinical epidemiology and survival studies of bronchogenic carcinoma in Nigerians.

POSTER

WELCOME RECEPTION AND POSTER SESSION ONE

16:30–18:00

Tuesday
7 November

Samson, Mélanie

P132 | BOURSES RÉGIONALES POUR L'AFRIQUE FRANCOPHONE: UNE SOLUTION ADAPTÉE POUR RÉPONDRE AUX BESOINS REGIONAUX

Samson, Mélanie¹; Pazos, Marta¹; Teahon, Marina¹; Graham, Kirstie¹

¹Union For International Cancer Control

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Contexte Depuis plus de 50 ans, l'Union Internationale Contre le Cancer (UICC) propose des bourses internationales pour renforcer les capacités et faciliter l'échange de connaissances. Grâce à ces programmes, les professionnels du cancer ont une occasion unique d'acquérir de nouvelles compétences à l'étranger, qu'ils peuvent ensuite mettre en œuvre et partager avec leurs pairs de retour chez eux. Des bourses ont été attribuées à des candidats du monde entier, notamment basés en Afrique, postulant pour être formés en Europe et aux États-Unis afin de développer des compétences pratiques en radiothérapie, pathologie, thérapie psychosociale, soins palliatifs, registres du cancer ainsi qu'en recherche fondamentale sur le cancer. Cependant, suite à une récente révision des programmes avec les différentes parties prenantes de l'UICC, l'Afrique francophone a été clairement identifiée comme une région où les demandes de bourses étaient historiquement relativement éparpillées, malgré un besoin urgent de renforcement des capacités en matière de lutte contre le cancer.

Réduire l'écart En réponse à cela, l'UICC a lancé cette année un nouvel appel aux professionnels du cancer basés en Afrique francophone pour postuler à des bourses spécifiquement pour leur région, dans le but de renforcer les capacités locales et les collaborations régionales. Ces bourses régionales visent à développer des compétences plus ciblées sur le plan local, qui pourraient ensuite être mises en œuvre par les boursiers avec plus de facilité et améliorer ainsi les capacités régionales globales.

Des hôpitaux, des universités et des organisations de lutte contre le cancer dans cette région ont été contactés pour promouvoir le nouvel appel à candidatures et un panel d'experts francophones ainsi qu'un directeur de programme régional ont été recrutés. Le système de postulation en ligne a été traduit en français, ainsi que des instructions étape par étape et une vidéo expliquant comment soumettre sa candidature. Le premier appel à candidatures s'est clos le 19 avril 2017, le deuxième appel commencera le 1er juillet pour clore le 1er octobre 2017.

Leçons apprises Les résultats de la première et deuxième série de postulations seront partagés, ainsi qu'un aperçu des différents défis auxquels sont confrontés les candidats, tels que la rédaction des demandes de subventions et l'identification des organisations hôtes appropriées. Finalement, les leçons tirées des premiers cycles de bourses pour l'Afrique francophone seront discutées en soulignant les points forts et les faiblesses de l'approche et en tenant compte des solutions futures pour répondre à ces besoins régionaux.

POSTER

WELCOME RECEPTION AND POSTER SESSION ONE

16:30–18:00

Tuesday

7 November

Samson, Mélanie

P403 | AN INSIGHT INTO NEEDS AND RESOURCES REQUIRED FOR CANCER CONTROL: A REVIEW OF THREE REGIONS

Samson, Mélanie¹; Pazos, Marta¹; Teahon, Marina¹; Graham, Kirstie¹

¹Union For International Cancer Control

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Background The Union for International Cancer Control (UICC) is a membership organisation comprising of more than 1,000 members worldwide. In order to better understand their diverse and complex capacity-building needs and to document their available resources, in 2016 a pilot review was carried out of cancer organisations in three different regions (Francophone Africa, Latin America and Southeast Asia), including both UICC member organisations and non-members.

Methods The study was based on qualitative research methods, including desk-reviews, surveys and 56 in depth interviews with key informants (19 in Francophone Africa, 20 in Latin America and 17 in Southeast Asia). Interviews were conducted in French, English, and Spanish.

Results Regarding the greatest challenges faced by organisations, almost all respondents highlighted that patients consult at very late stages due to a number of barriers (socio-economic, cultural or lack of access to care). The lack of awareness and prevalence of misconceptions about cancer among the population were emphasized across all regions, in addition to the insufficient number of qualified health personnel in the field of cancer, often linked to a lack of infrastructure. In response, the cancer community in these three regions responded by focussing their missions on early detection, screening and awareness campaigns, advocacy to ensure cancer control is a national and local priority and establishing patient support groups to provide psychosocial and peer support and access to care. Treatment centres were also a key area of focus, providing patients with access to diagnosis and care and also providing training to health professionals.

Conclusion This review enabled a better understanding of the diversity of contexts and challenges of cancer organisations in these three specific regions, including a snapshot of the preferences of cancer organisations regarding the topics and formats of future capacity building activities.

In addition, key assets and expertise of cancer organisations were identified, as well as opportunities for peer-to-peer support at the regional level.

PRESENTATION

Sankaranarayanan, Rengaswamy DELIVERY OF CANCER CARE IN LOW-AND MIDDLE-INCOME COUNTRIES

IMPROVING
SYSTEMS:
PUBLIC
HEALTH AND
ECONOMICS

Sankaranarayanan, Rengaswamy¹
¹International Agency for Research on Cancer

11:00–12:30
Tuesday
7 November

Correspondence sankarr@iarc.fr

Currently, low cost, affordable and effective diagnosis and treatments are available for the management of several cancers. Cancer has now emerged as a major public health problem globally including poor countries. A major barrier for cancer care has been lack of or inadequate access to such care in many low-and middle-income countries (LMICs) either due unavailability or inadequate availability of such services, inequitable distribution of such services and lack of health care financing mechanisms to avail such basic care. These difficulties are further compounded by shortage or absence of oncology specialists and facilities and unrealistic regulatory mechanisms. Lack of a pragmatic national cancer control plan addressing the development of cancer health care services in a time bound, phased manner or lack of implementation of an existing plan and non-existent or inadequate cancer health care financing mechanisms are major reasons for lack of cancer care services in LMICs. Planned and appropriate vertical investments in primary, secondary and tertiary care levels is critical. Facilities to provide prevention measures such as counselling, creation of awareness, tobacco/alcohol control measures, hepatitis B and human papillomavirus vaccination as well as to provide a basic cancer related physical examination up for symptomatic people and appropriate referral of suspected should be inbuilt in primary care. Facilities to provide basic diagnostic services such as basic imaging, laboratory services, fine needle aspiration cytology, basic haematoxylin & eosin histopathology services, incision and excision biopsy, and wide local excision should be developed in secondary care. Multimodality management is the hall mark and standard of care for cancer and this should not be considered as a luxury. Planned investments in developing such services in oncology units and cancer centres in tertiary care should adequate attention and commitment of resources. Cancer is a catastrophic illness in both financial and personal terms. Appropriate health care financing mechanisms using domestic sources as part of universal health care (not donor driven!!), particularly for the socioeconomically disadvantaged population segments, should be developed as has been shown by countries such as Brazil, Thailand, Turkey, Mexico and Colombia among others. Development of basic surgical infrastructure, phased development of resource appropriate radiotherapy infrastructure, procurement of medications based on a pragmatic medicines list using off-patent generic drugs, and human resource development are integral components of national cancer plans and should be adequately and sustainably funded and monitored.

PRESENTATION

Sankaranarayanan, Rengaswamy RESEARCH PRIORITIES IN CERVICAL CANCER PREVENTION IN LOW- AND HIGH-INCOME COUNTRIES

**PREVENTION
& SCREENING
FOR CERVICAL
CANCER IN
AFRICA (cont.)**

14:40–16:30

Tuesday

7 November

Sankaranarayanan, Rengaswamy¹

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Despite several advances in cervical cancer prevention, still more than half million new cases and around 300,000 cervical cancer deaths occur in the world annually. The disproportionately high occurrence of cases and deaths in low- and middle-income countries (LMICs) is a Himalayan tragedy that has not seized the attention of government, women's constituencies and economic and public health planners in these countries. Thanks to the lack of political commitment, lack of prioritisation of cervical cancer prevention, lack of budgetary allocations and lack of demand from women's constituencies, women continue to suffer and die from this most eminently preventable cancer, particularly in LMICs. Fortunately we know what to do to prevent cervical cancer in different resource settings and resource appropriate prevention and early detection techniques and tools are under our disposable but unfortunately these are not adequately implemented. Thus this eminently preventable cancer remains yet to be prevented. Given the different patterns of burden and the status of interventions, some of the research priorities for optimal prevention interventions are different in high-income countries (HICs) compared to LMICs. Almost all HICs have implemented HPV vaccination and the major operational/academic research priorities are as follows:

- How to improve coverage of HPV vaccination in the primary target age group of 9-13 years
- Evaluate the outcome HPV vaccination in the primary target group as they age as well as in the older girls/women who received vaccination
- Continue to establish vaccine safety through post vaccination surveillance studies
- Establish optimal screening approach in vaccinated women
- In the short term, research on most optimal triaging method for those screened with HPV testing
- In the context of LMICs, the operational and scientific research priorities include:
 - How to improve awareness and participation in cervical cancer prevention initiatives
 - How to sustain and expand the already introduced pilot HPV vaccination programs
 - Generation of local evidence on the efficacy and safety of HPV vaccination in due course
 - Development of affordable and rapid HPV tests
 - Evaluate the feasibility, safety, acceptability and effectiveness of "screen and treat" using thermocoagulation
 - How low intensity (e.g., once a life time) HPV screening programs can be introduced and sustained in LMICs

In common to both HICs and LMICs, there is an urgent need to evaluate the value of a single dose of HPV vaccination in randomized trials and in observational studies in routine programs.

POSTER

POSTER SESSION TWO

16:30–18:00
Thursday
9 November

Sanni, Daniel

**P313 | DIAGNOSTIC ACCURACY OF CORE NEEDLE BREAST BIOPSIES
COMPARED WITH EXCISIONAL SPECIMENS AT LAGOS STATE
UNIVERSITY TEACHING HOSPITAL, IKEJA, LAGOS STATE, NIGERIA**

Sanni, Daniel¹; Faduyile, Francis¹; Soyemi, Sunday¹; Ibrahim, Nasiru¹;
Popoola, Abiodun; Obafunwa, John¹
¹Lagos State University Teaching Hospital

Correspondence ayodele_sanni@ymail.com

Background Core needle biopsy is an important procedure in the diagnostic evaluation of breast lesions. We intend to find out the accuracy of this procedure in the evaluation of both benign and malignant breast lesions in our local setting.

Method This is a nine year retrospective study of patients who had core-needle biopsies sent to our laboratory, Department of Pathology and Forensic Medicine, LASUTH, Ikeja with subsequently excisional biopsy or mastectomy between 1st January, 2008 and 31st December 2016. The demographic and pathological data were retrieved from the pathological reports. All slides were retrieved and reviewed. Lost or broken slides were recut from the block. The sensitivity, specificity, accuracy and kappa were calculated using International Business Machine Statistical Package for the Social Science (IBM SPSS) version 19.

Results There were ninety-nine patients in the study with an age range of 13 to 82 years and a mean age of 39+ 17 years. Core-needle biopsy showed 53 (53.5%) were benign lesions and 46 (46.5%) were malignant lesions. Out of the 99 patients, excisional biopsy was done on 62 (62.6%) and mastectomy on 37 (37.4%). Histopathological result of this revealed 55 (55.6%) as benign and 44 (44.4%) cases were found to be malignant. Core needle biopsy showed a sensitivity, specificity, Positive Predictive Value (PPV), Negative Predictive Value (NPV) and accuracy of 93.2%, 91.0% 89.1% 94.3% and 92% respectively. The specificity for malignant biopsies was 90.9% while benign was 93.0%.

Conclusion The study showed high specificity and sensitivity of core needle biopsy. This procedure can be used as a standard especially in low resource setting like ours.

POSTER

POSTER SESSION TWO

16:30–18:00
Thursday
9 November

Satcher, Robert

P315 | IMPROVING CANCER PATIENT SURVEILLANCE AND TREATMENT IN SUB-SAHARAN AFRICA USING A MOBILE SMARTPHONE PLATFORM

Satcher, Robert¹; Bird, Justin¹; Wondemagegnehu, Tigeneh²; Seifu, Daniel²; Lin, Patrick¹; Moon, Brian¹; Nalty, Theresa¹; Gebremichael, Dawit¹; Lewis, Valerae¹

¹MD Anderson Cancer Center; ²Black Lion Hospital / Addis Ababa University

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Background/Objectives Cancer is becoming the leading cause of death in sub-Saharan Africa, largely due to diagnosis in late stages of disease and lack of access to treatment. In 2014, the Federal Ministry of Health (FMOH) of Ethiopia launched a National Cancer Strategy to increase cancer treatment rates via building interconnected cancer centers. To assist with this effort, a collaborative project was started between MD Anderson Cancer Center (MDACC) and Black Lion Hospital (BLH) in Ethiopia. The primary objective of this pilot study is to determine the feasibility of data gathering using mobile technology as a component of routine follow-up care following cancer treatment in Ethiopia, using technologies compatible with MDACC technology infrastructure.

Methods We aim to improve the reliability of patient surveillance and treatment management by implementing a smartphone platform for patient management. The smartphone application (APP) was initially developed at MDACC, and was adapted in order to test this approach at BLH in Ethiopia. We focussed on breast cancer patients, as many of these patients receive care at Black Lion Hospital, are followed longitudinally, and have access to the cellular network, since they live in and/or around Addis Ababa. The APP was first adapted and pretested using smartphones in Addis Ababa. The APP coordinates treatments, and collects and transmits data to an electronic medical record. The feasibility trial, with 20 patients, compared the smartphone method to the standard of care approach (face-to-face follow up) in a matched cohort. Patients were eligible for the study if they underwent either chemotherapy or surgery as part of their cancer treatment at BLH. Informed consent was obtained for patients who elected to participate.

Results Health workers and patients adapted to using smartphones easily, and were able to complete the outpatient visits and videoconferencing in preliminary tests using hospital volunteers. The method was found to be feasible for use at BLH. The mobile platform successfully used the icloud, and provides near real-time transfer of data collected using smartphones.

Conclusions Introducing a mobile device based system for cancer patients for routine collection of health data, surveillance, and outpatient visits, at a small scale is feasible. The main barriers to using the system in more rural areas include more stable cellular network coverage, and implementing a system of assigning unique and consistent patient identifiers. This is the first research effort in Ethiopia attempting to implement breast cancer patient intervention using a novel smartphone based approach.

PRESENTATION

CERVIX AND GYNAECOLOGICAL CANCERS

14:40–16:30

Wednesday

8 November

Schmeler, Kathleen

**THE INTERNATIONAL GYNAECOLOGIC CANCER SOCIETY (IGCS)
GLOBAL CURRICULUM & MENTORSHIP PROGRAM:
PROGRESS AND FUTURE**

Schmeler, Kathleen¹; Eiken, Mary²; Chuang, Linus³; Randall, Thomas⁴; Ng, Joseph⁵; Quinn, Michael²

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³Mount Sinai; ⁴Massachusetts General Hospital; ⁵National University Cancer Institute

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Cancer is one of the leading causes of death worldwide with over 17 million new cases and 8.5 million cancer-related deaths per year. Globally, the number of deaths from cancer exceeds the number of deaths from HIV, malaria and tuberculosis combined. Global cancer rates are rising dramatically with a predicted 23.6 million new cases per year worldwide by 2030. There is a significant shortage of health care providers with access to specialty training with a critical need to train and educate local physicians to address this cancer epidemic.

The International Gynecologic Cancer Society (IGCS) is launching the Gynecologic Oncology Global Curriculum & Mentorship Program, a comprehensive two-year education and training program designed for regions around the world that do not currently have formal training in gynecologic oncology. The program will match institutions and individuals from higher resource settings with partners in lower resource settings wishing to obtain formal gynecologic oncology training (twinning). The primary goal of the program is to develop and maintain a comprehensive two-year web based curriculum for local gynecologic oncology training and education that can be adapted by each region/program to reflect local needs and facilities. The on-line curriculum will be supplemented with monthly tumor boards using Project ECHO. In addition, the international mentors will travel to the fellow institution at regular intervals for hands-on surgical training and in-person teaching. The fellows will also travel to the mentoring institution for up to three months for training and education.

The following pilot sites began implementing the Global Curriculum in 2017: 1) Hospital Central de Maputo, Mozambique in collaboration with Barretos Cancer Hospital, Barretos, Brazil and The University of Texas MD Anderson Cancer Center, Texas, USA; 2) St. Paul's Hospital and Black Lion Hospital, Addis Ababa, Ethiopia in collaboration with the University of Minnesota and University of Michigan, USA and Martin Luther University Halle-Wittenberg, Germany; 3) Moi University, Moi, Kenya and the University of Toronto, Ontario, Canada; 4) Da Nang Oncology Hospital, Vietnam in collaboration with the Mayo Clinic, Jacksonville, Florida, USA and the National University Cancer Institute, Singapore; and 5) The University of the West Indies (Jamaica, Bahamas, Barbados, Trinidad & Tobago) in collaboration with the University of Miami, Florida, USA.

If successful, this program will be expanded to additional sites around the world interested in accessing specialty training in gynecologic oncology. A parallel curriculum will be developed in radiation oncology.

PRESENTATION

Schuz, Joachim

ENVIRONMENTAL AND OCCUPATIONAL CANCER BURDEN

**ENVIRONMENTAL FACTORS:
PESTICIDES &
OTHER TOXINS**

14:40–16:30

Thursday

9 November

Schuz, Joachim¹

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Throughout their life people are exposed to a wide range of environmental and occupational pollutants from different sources in the work place, at home and in the general environment. Several chemicals, metals, dusts, fibres, and occupations have been established to be causally linked to an increased risk of cancer. Air pollution, both outdoor (mainly industrial and traffic related) and indoor (heating and cooking), has been identified as a significant contributor to the environmental cancer burden.

The annual global burden of occupational cancer deaths is estimated to be between 300,000 to 600,000, based on current knowledge, but with large uncertainty as i) for many established carcinogens the dose-response relationship is not well described (in particular there is scientific uncertainty on low dose effects), ii) exposure prevalence is unknown in very many countries due to lack of respective workplace monitoring, and iii) there are plausible hypotheses related to probable or possible carcinogens for which the scientific evidence of causation has not been established. While for most developed countries, estimations suggested 3–5% of cancers to be occupational-related (higher in men than in women), there's a lack of valid estimates for the greater part of the world. The main cancer sites affected are lung, pleura, and bladder.

Many carcinogenic risks in the environment and at the workplace appear to be modifiable and the cancers therefore preventable. Given the long induction period of many cancers successful prevention often becomes obvious only in the long run. At the same time, prevention measures have to be implemented at the earliest possible time, to reverse increasing trends in cancer occurrence. An example is asbestos, a major occupational carcinogen, with its use banned in several countries even some 20-25 years ago, but asbestos is still leading to a marked excess of mesothelioma deaths in those countries. Another challenge is the multifactorial origin of most cancers. Lung cancer, for instance, is related to several established workplace carcinogens, but the major cause of lung cancer remains smoking. Therefore, disentangling the effects of smoking, occupational carcinogens, and the synergistic effects or interactions between the two is of high importance in epidemiological studies.

The presentation will give an overview of some occupational and environmental carcinogens and give an introduction to the specific presentations of the session.

PRESENTATION

Schwartz, Gary KAPOSI'S SARCOMA IN AFRICA

Schwartz, Gary¹
¹Columbia University;

SARCOMAS IN AFRICA: DIAGNOSIS & TREATMENT

07:15–08:20

Friday

10 November

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Sarcomas are cancers of the connective tissues. There are over 50 different sarcoma sub-types. In Africa the most common form of sarcoma is Kaposi's Sarcoma (KS). In fact KS is the common tumor among adults in many parts of Africa. Immunodeficiency induced by HIV-infection has substantially increased the incidence of KS throughout Africa. Infection with KS-associated herpes virus-8 (HHV-8) is now believed to be the principle cause of the disease. HHV-8 acts on the TGF- β pathway and may suppress thrombospondin-1, an inhibitor of angiogenesis, which is down-regulated in KS lesions. Co-infection with HIV and HHV-8 ranges from 30 to 50% in Africa creating an immunosuppressive microenvironment that promotes the development of KS. The appearance of KS can range from indolent cutaneous lesions to aggressive disseminated disease with visceral involvement reflecting the immune status of the patient. Widespread visceral KS places the patient at risk for death from hemorrhage due to gastrointestinal lesions, cardiac tamponade, and pulmonary obstruction. An aggressive form also appears in children with generalized lymphadenopathy with or without cutaneous lesions. For newly diagnosed KS and active HIV infection, the initiation of antiretroviral therapy (AVT) often leads to the regression of KS lesions with durable clinical benefit, though a substantial number will require KS treatment despite undetectable viral loads and CD4 positive cell counts > 300 cell/mm. For patients with symptomatic pulmonary or gastrointestinal disease, or with extensive mucocutaneous disease, the introduction of early chemotherapy is often necessary to achieve a rapid response. Chemotherapies can include taxanes, anthracyclines, bleomycin, vinca alkaloids, and etoposide. Based on randomized clinical trials as well as its safety profile, with the relatively low incidence of cumulative cardiac toxicity, liposomal formulations of doxorubicin have become the standard of care for KS patients in the United States. However, availability of this drug and its costs in parts of Africa make this drug prohibitive. In high-income countries the introduction of AVT among HIV patients has led to substantial declines in KS. In a study conducted in South Africa, the introduction of AVT therapy has been shown to reduce the risk of KS by 80%. This supports the concept that early introduction of AVT therapy in Africa will reduce the risk of KS as well as KS-associated cancer deaths in those parts of Africa with high HIV burden.

POSTER

WELCOME RECEPTION AND POSTER SESSION ONE

16:30–18:00

Tuesday
7 November

Semeere, Aggrey

P109 | FEASIBILITY OF USING RAPID CASE ASCERTAINMENT TO EVALUATE KAPOSI'S SARCOMA

Semeere, Aggrey^{1,2}; Freeman, Esther³; Busakhala, Naftali^{4,5}; Sang, Edwin⁵;
Wools-Kaloustian, Kara⁶; Martin, Jeffrey²

¹Makerere University; ²University of California, San Francisco; ³Harvard Medical
School; ⁴Moi University; ⁵Academic Model Providing Access to Healthcare;

⁶Indiana University

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Background Questions abound concerning HIV-related Kaposi's sarcoma (KS) in sub-Saharan Africa. Why do some patients develop KS and others do not? What percentage are diagnosed with advanced KS, thus representing failure of early detection? How many HIV-infected patients are prescribed antiretroviral therapy (ART) and develop KS despite an undetectable HIV viral load? What are the biochemical determinants of prognosis? Addressing these questions requires detailed characterization of patients with KS immediately upon diagnosis and prior to what may be a swift change in KS disease stage, death, or loss-to-follow-up. This expeditious evaluation — common in resource-rich settings — is called Rapid Case Ascertainment (RCA). We describe the feasibility of RCA for KS in Africa.

Methods We established a multi-prong system to identify all new adult diagnoses of KS in the 52-clinic AMPATH HIV primary care network in Kenya. We use two active processes (weekly electronic medical record (EMR) query and histopathology laboratory review) and passive receipt of clinician notifications. Upon identification of apparent new KS, the RCA team promptly reviews records to confirm incident disease, and, if confirmed, uses phone and physical tracking to find the patient. Once found, patients consent to detailed clinical and laboratory evaluation.

Results From July 2016 to March 2017, we identified 88 patients with apparent new KS. Clinician notification yielded 84% of the cases, EMR query 9.0%, and histopathology laboratory review 6.8%. Of these 88, 19 were ineligible for RCA upon further review: 13 had prior KS, 5 did not have KS histologically, and 1 originated outside AMPATH. Of the 69 patients who were eligible, RCA was performed among 36% by 14 days, 54% by 30 days, and 62% by 90 days. Reasons for failing to perform RCA included death prior to reaching the patient (4), insufficient locator information (5), and logistical breakdown due to a clinician's strike (8). Among patients for whom RCA was performed, median age was 38.5 years, 50% were men, and 55% had been prescribed ART. Clinically, 85% had ACTG T1 stage. The median CD4 count was 351 cells/mm³, and 42% had undetectable viral load.

Conclusion An RCA approach to identify patients with newly diagnosed KS can find the majority shortly after diagnosis. A substantial fraction of patients have advanced stage disease and have developed KS despite ART. By addressing the identified logistical challenges, it should be possible to further optimize RCA to evaluate even a higher proportion within a shorter time.

PRESENTATION

Sengayi, Mazvita

BURDEN OF CANCER ATTRIBUTABLE TO HIV IN SOUTH AFRICA (2004–2014)

**BIG CAT
AWARDEES**
11:00–12:30
Wednesday
8 November

Sengayi, Mazvita^{1,2}; Spoerri, Adrian³; Egger, Matthias^{3,4}; Singh, Elvira^{1,2}; Bohlius, Julia³

¹National Cancer Registry, National Health Laboratory Service; ²University of the Witwatersrand; ³University of Bern; ⁴University of Cape Town

Correspondence mazvita.sengayi@nhls.ac.za

Background The impact of South Africa's large HIV epidemic on national cancer patterns is poorly described because HIV status is currently not documented in the National Cancer Registry. In order to estimate the burden of laboratory-diagnosed cancer attributable to HIV in South Africa, we propose a study to assign HIV status in the National Cancer Registry through probabilistic record linkage to National Health Laboratory Service HIV data. This study is a sub-study of the South African HIV Cancer Match study and is supported by CRDF Global through the Beginning Investigator Grant for Catalytic research.

Methods We will estimate standardized incidence ratios for cancer in HIV positive people compared to HIV negative/unknown, the burden of cancer attributable to HIV and the description of 10 year trends (2004–2014) in cancer incidence and spectrum by HIV status in the South African public sector in the era of antiretroviral therapy.

Anticipated Results This will allow us to estimate the contribution of HIV to cancer in South Africa, the type of cancers that occur in HIV-positive people, the additional risk of cancer that HIV-positive people have compared to people who do not have HIV and changes in cancer trends since antiretroviral drugs became available (2004–2014). The results of the study will be used to inform cancer control policy in South Africa in the context of the South African HIV epidemic in the era of antiretroviral treatment availability. This information is crucial for national planning, development of strategies to reduce cancers as well as cancer resource allocation in South Africa where we have many people living with HIV, who are now living to older ages because of antiretroviral treatment.

PRESENTATION

HIV ASSOCIATED MALIGNANCIES

14:40–16:30

Thursday

9 November

Sengayi, Mazvita

CANCER RISK IN HIV-POSITIVE ADULTS RECEIVING ANTIRETROVIRAL THERAPY IN SOUTH AFRICA

Bohlius, Julia³; Giddy, Janet⁵; Guidici, Fabio³; Maskew, Mhairi⁴; Rohner, Elaine³; Sengayi, Mazvita^{1,2}

¹National Cancer Registry, National Health Laboratory Service; ²University of the Witwatersrand; ³Institute of Social and Preventive Medicine; ⁴Wits Health Consortium; ⁵McCord Hospital

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Objective HIV-positive patients are at increased risk of developing cancer. The effect of CD4 cell counts on cancer risk in HIV-positive adults initiating antiretroviral therapy (ART) in an African setting is not well understood.

Methods We used cohort data from two ART programs (McCord Hospital, KwaZulu-Natal and Themba Lethu Clinic, Gauteng province) with record linkage identified cancer cases for the period 2004–2011. We estimated cancer incidence rates for the eight most frequent cancers. We did uni- and multivariable Cox regression analyses adjusted for gender, age, year of starting ART to assess the effect of current CD4 cell count on cancer risk separately for each cancer of interest.

Results We included 21,417 patients, 63% were women, median age at starting ART was 36 years (IQR 31–43) and median CD4 cell count at starting ART was 106 cells/ μ L (IQR 43–176). During 51,436 person-years (pys) of follow-up after ART initiation, 605 patients developed incident cancer for an overall incidence rate of 1,176/100,000 pys (95% CI 1,086–1,274). The eight cancers with the highest incidence rate per 100,000 pys were invasive cervical cancer (ICC) 456 (95% CI 390–534), Kaposi sarcoma (KS) 300 (95% CI 256–350), breast cancer 151 (95% CI 115–198), non-Hodgkin's lymphoma 123 (95% CI 97–157), conjunctiva 62 (95% CI 44–88), cancer of unknown primary site 61 (43–86), skin 57 (95% CI 40–81) and esophageal cancer 30 (95% 19–49). In multivariable analyses there was strong evidence for an association of lower current CD4 cell counts with a higher risk of developing KS and some evidence for an association with NHL. There was no evidence for an association with any of the other cancers analyzed.

Conclusion For most cancers we did not find an association between low current CD4 cell counts and an increased risk of developing cancer. This suggests that ART alone may have limited potential to reduce cancer incidence rates in the HIV-positive population in South Africa. Cancer-specific prevention strategies are needed in addition.

PRESENTATION

AFRICAN EPIDEMIOLOGY: SUCCESSES & PERSPECTIVES

13:30–14:30

Wednesday

8 November

Sengayi, Mazvita

GLOBAL CONSORTIUM OF HIV EPIDEMIOLOGIC STUDIES (leDEA) AND THEIR ACTIVITIES ON CANCER IN SOUTHERN AFRICA

Sengayi, Mazvita^{1,2}; Spoerri, Adrian³; Rohner, Eliane³; Egger, Matthias^{3,4}; Bohlius, Julia³

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Background International Epidemiologic Databases to Evaluate AIDS-Southern Africa (leDEA-SA) collaboration is one of 7 regional centres of the leDEA, an international research consortium established by the U.S. National Institute of Allergy and Infectious Diseases (NIAID) in 2005 to address unique and evolving research questions in HIV/AIDS that are unanswerable by single cohorts. leDEA-SA is led by research teams at the University of Bern (Switzerland) and the University of Cape Town (South Africa) and has participating cohorts located in Lesotho, Malawi, Mozambique, South Africa, Zambia, and Zimbabwe. One of the aims of the leDEA-SA is to study the burden and care of cancers in HIV-positive people.

Methods Most leDEA-SA cohorts do not systematically collect cancer data. To improve cancer ascertainment in HIV cohorts, we conducted record linkages between cancer registries and pediatric as well as adult HIV cohorts in South Africa. We have also initiated new record linkages between HIV cohorts and cancer registries in Malawi, South Africa and Zimbabwe.

Results In South African children with HIV, the most common cancers were Kaposi sarcoma (KS) and Non-Hodgkin lymphoma (NHL). The overall cancer incidence rate in children was 82 per 100,000 person-years (95% CI: 55–122). The risk of cancer increased with age and immunodeficiency, while antiretroviral treatment was protective. In adults, the most common cancers were KS, cervical cancer, NHL, breast cancer and conjunctival cancer. The overall cancer incidence rate in adults was 877 (95% CI 744–1,041) per 100,000 person-years and 83% of cancers were infection-related. Lower current CD4 cell counts were associated with a higher risk of developing KS but not with other cancers. Cervical cancer incidence rate substantially decreased with the implementation of a Pap-based screening program and improved access to treatment of cervical lesions in one urban cohort in South Africa. In Malawi, KS was by far the commonest cancer identified (93.5% of all cancer cases), with many of the KS cases recorded in the HIV clinic only, but not in the cancer registry. While diagnostic and therapeutic capacity for KS is available in Malawi, other cancers were under diagnosed.

Conclusion Ascertainment of cancer in HIV cohorts in Southern Africa is incomplete. However, record linkage is both feasible and essential for improving cancer ascertainment and enriching HIV databases to evaluate cancer risk in African HIV populations. Collaborations such as the leDEA-SA are crucial in building local and international capacity for HIV malignancy research in Africa.

POSTER

WELCOME RECEPTION AND POSTER SESSION ONE

16:30–18:00

Tuesday
7 November

Sengayi, Mazvita

P110 | THE IMPACT OF THE SOUTH AFRICAN HIV EPIDEMIC ON NATIONAL INCIDENCE AND MORTALITY OF KAPOSI SARCOMA

De Villiers, Chantal Babb^{2,5}; Maqhuzu, Phillen^{1,3}; Sengayi, Mazvita^{1,2}; Singh, Elvira^{1,2}

¹National Cancer Registry, National Health Laboratory Service; ²University of the Witwatersrand; ³Ludwig-Maximilians-Universität München; ⁴University of Cambridge

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Background Kaposi sarcoma (KS) is a common malignancy among severely immuno-compromised individuals. South Africa has a high HIV burden and the effect of the evolving HIV epidemic on national KS incidence and mortality has not been previously studied. We investigated the effect of the rising HIV prevalence on national KS incidence and mortality and the impact of the national antiretroviral treatment (ART) programme introduced in 2004 on KS in South Africa.

Methods We examined trends in age-standardized incidence rates of KS in men and women using data from the National Cancer Registry of South Africa for the time period 1988–2012. We calculated age-standardized KS mortality rates for men and women using underlying cause of death data from Statistics South Africa for the time period 1997–2012. We compared trends in KS incidence and mortality with the growth of the HIV epidemic in South Africa using the antenatal HIV prevalence (1990–2012) as reported in annual national surveys as a proxy for national HIV rates. Joinpoint regression analysis was used to calculate the average annual percentage change (AAPC) in KS incidence and mortality rates.

Results KS incidence in women mirrored the antenatal HIV prevalence, with a three-year lag time between the two curves. KS incidence in women rose from 0.12 per 100,000 persons in 1988 peaking at 4.51 per 100,000 persons in 2008 (AAPC +0.56), and declining thereafter (AAPC -0.45). Similarly, KS incidence in men rose from 0.82 per 100,000 persons in 1988 peaking at 6.05 per 100,000 persons in 2009 (AAPC +0.38), and declining thereafter (AAPC -0.48). KS mortality in men and women, mirrored incidence, peaking in 2007 (Male AAPC +0.19, Female AAPC +0.18), and declining gradually thereafter (Male AAPC -0.05, Female AAPC -0.04). A decline in KS incidence in men and women occurred 5 years and 4 years, respectively, after the national ART roll-out with a modest decline in KS mortality after 3 years.

Conclusion National KS incidence and mortality in South Africa increased with the rising HIV prevalence. The introduction of ART in 2004, has led to a decline in national KS mortality and incidence from 2008 and 2009, respectively. We expect a sustained decline in KS incidence and mortality with improved ART coverage as South Africa strives to achieve the 90-90-90 targets in HIV care.

PRESENTATION

Shamley, Delva

ETHICAL PRINCIPLES UNDERLYING REGULATION OF CLINICAL TRIALS

**ETHICS IN
GLOBAL
ONCOLOGY
PRACTICE &
RESEARCH**

11:00–12:30

Friday

10 November

Shamley, Delva¹; Vermeulen, Inge

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The violation of human rights, originally recognized in the formation of The Declaration of Helsinki (1964) and the Nuremberg Code, has led to the iterative process of protecting humanity with regulations and guidelines for clinical trials. The Declaration of Helsinki formed the basis of the ethical principles underlying the introduction of ICH-GCP. ICH-GCP is a set of standards that consolidate the principles of ethical research and ensures the safety of participants. Compliance with this standard should reassure the public that rights, safety and well-being of trial participants are protected and that the data is credible. ICH-GCP has 13 core principles which ensure that every trial is conducted in accordance with ethical principles, sound scientific evidence and clear detailed protocols. Regulatory requirements for clinical trials are enforced by the country specific national Medicine Regulatory Authorities (MRA) that are governed by country specific legislation, regulations and guidelines. These legislation are binding to all parties whereas the regulations are instrumental in enforcing the legislation. Difficulties emerge when a country's legislation and guidelines are outdated or badly written or that the international guidelines which they are adopted contradict established regulations (i.e. western ideology enforced on an African context). As a rule HREC are there to ensure that the design and proposed conduct of CT will satisfy the principles of social or scientific value, scientific validity, fair participants selection, favourable risk/benefit ratio, beneficence, independent review, informed consent and respect for enrolled participants. What they don't do is continue to monitor or audit the trial once ethical approval has been granted. This is where regulatory bodies play a critical role as enforcing and monitoring these guidelines falls to them.

PRESENTATION

SITE SPECIFIC CANCERS & OTHER ABSTRACTS

13:30–14:30

Friday

10 November

Shino, Elizabeth

PSYCHO-ONCOLOGY IN AFRICA: WHERE ARE WE?

Louw, Dap²; Shino, Elizabeth¹

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Psycho-oncology concerns itself with the psychological aspects of cancer. As a formal sub-discipline, it has been in existence for a period of approximately four decades. Although a lot of progress has been made in both research and clinical practice, particularly in industrial and developed countries, there remains a scarcity of psycho-oncological research in developing countries, including Africa. The high current prevalence, incidence, and mortality rates owing to cancer in Africa, as well as projected increases, necessitate the development and advancement of psycho-oncology on the continent. This paper aims to provide an overview of developments in psycho-oncology in Africa. More specifically, it outlines African research findings pertaining to psychosocial consequences of cancer, factors contributing to delays in seeking medical intervention, knowledge of and screening for cancer, and psychosocial intervention across the cancer trajectory. Additionally, the paper will critique where we are in Africa with regard to psycho-oncology, and recommendations for future directions will be made.

PRESENTATION

Shoba, Bonginkosi

CHANGING DOSES OF IMATINIB IN THE TREATMENT OF CHRONIC MYELOID LEUKAEMIA

**BIOMARKERS,
HAEMATOLOGY
& OTHER
ABSTRACTS**

13:30–14:30

Thursday

9 November

Shoba, Bonginkosi¹; Yatich, Robert¹; McLigeyo, Angela¹; Oyiro, Peter¹; Mohamed, Ezzy¹; Abinya, Nicholas¹

¹University of Nairobi

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Chronic myeloid leukemia is a relatively rare medical condition. Despite this being an uncommon condition its influence in medicine has superceded all common diseases. Chronic myeloid leukemia is the first disease ever described to have a clear and elegant chromosomal, clear gene and fusion protein pathogenesis. Moreover this single-handedly introduced the idea of successful targeted therapy to the clinic. Until twenty years ago this disease carried a devastating prognosis, the therapies employed had severe side effects and did not significantly prolong survival and the quality of life was poor. An absolute revolution, which was initially celebrated as a the first ever cure for leukemia and or cancer, was introduced to the clinic some twenty years ago in the form of imatinib mesylate oral therapy. The biology of the disease is elegant, so was this therapy. Imatinib remains unaffordable in Africa and most of the developing world. A sponsored humanitarian project has made this wonder drug available to all our patients who can access it in Africa. Being a relatively new therapy there are many important clinical questions that remain unanswered. Our study based on the GIPAP project in Nairobi, Kenya seeks to address a few of these questions. Some of our patients have required dose adjustments either up or down during the course of their treatment with imatinib depending commonly on their cell counts. It is not known what the effects of these adjustments on the prognosis are, what these adjustments mean in terms of disease pathogenesis and indeed the question arises as to whether we are dosing our patients correctly right at the beginning. In an attempt to answer some of these questions we reviewed 138 patients files going back more than ten years ago when our clinic was started. Patients were stratified to those who either had a dose escalation and those who had dose reductions. The median time to last clinic follow up visit was ascertained and determination was made as to how they had fared since the dose adjustment. The results suggest that given that our male patients have a higher body surface area compared to females it is possible that the non-body surface area based dosing of imatinib at 400mg for all adult patients in the chronic phase may be underdosing our male patients. Furthermore it appears that those patients who needed dose escalation did not do as well as those who needed dose reduction.

PRESENTATION

QUALITY TREATMENT IN LOW RESOURCE COUNTRIES

11:00–12:30

Tuesday

7 November

Shulman, Lawrence

EXPLORING ACCESS TO CANCER MEDICINES IN REGARD TO COST

Shulman, Lawrence¹

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Background Cancer care is complex and systemic therapies comprise an essential component of treatment for many cancers. Access or lack of access to cancer drugs can have a major impact on patient survival.

Methods Cancer therapies for diseases where cure or prolonged survival are possible is reviewed, particularly in regard to incremental benefits of various medicines related to cost.

Results Older generic medicines can have profound benefits for many patients. Newer, more costly medicines, though, can benefit many patients but are currently unaffordable in many locations. In addition, many newer medicines require expensive and technically complex tumor (somatic) molecular analyses to determine which patients will benefit from a drug and which will not. In 2015, WHO approved, for the first time, costly but very beneficial cancer medicines to be included in their Essential Medicines List, including trastuzumab for HER2 positive breast cancer, rituximab for CD20 positive lymphoma, and imatinib for chronic myeloid leukemia. They also rejected some based on the need for complex molecular testing, and other reasons. In 2017 they approved additional targeted therapies. Cost implications and effects on survival will be discussed using a variety of clinical scenarios.

Conclusion The cost of some highly effective cancer medicines cause them to be unaffordable and unavailable to many in the world, resulting in unnecessary, potentially preventable deaths.

PRESENTATION

Shyirambere, Cyprien

A DISCUSSION AROUND INNOVATIVE APPROACHES TO CHILDHOOD MALIGNANCIES IN AFRICA

**CHILDREN
WITH
CANCER**

07:15–08:20

Thursday

9 November

Shyirambere, Cyprien¹; Fehr, Alexandra¹; Lehman, Leslie²

¹Partners in Health / Inshuti Mu Buzima; ²Dana-Farber Cancer Institute

Correspondence cshyirambere@pih.org

The recent past has shown vast strides in the treatment of childhood cancers; at present, 80% are treatable with currently available interventions. However, more than 100,000 children still die of cancer each year. Approximately 80% of these deaths occur in low- and middle-income countries (LMICs). There are many challenges to treating childhood cancer in LMICs. For example, children often lack consistent access to health services, so are often diagnosed with cancer late, and cannot receive proper treatment. To actively combat this growing challenge, cancer centers in Africa need to adopt innovative approaches to cancer care and treatment.

The Butaro Cancer Center of Excellence (BCCOE) was founded in 2012 as a collaboration between the Rwandan Ministry of Health, Partners in Health, and Dana Farber Cancer Institute. Through our work, we have identified five core innovative strategies to better deliver comprehensive cancer care to both children and adults:

1. Develop strong partnerships with cancer centers in high-income countries. Through our partnerships, BCCOE has developed validated treatment protocols for low-resource settings, allowing us to provide better, consistent care to pediatric patients. Further, these partnerships are vital in maintaining on-going trainings and mentorship for doctors and nurses. These protocols were endorsed by the ministry of health, pediatric stakeholders and US based collaborators.
2. Use telepathology. Quickly and accurately pathologically diagnosing cancer is a challenge in many African countries. To overcome this challenge, BCCOE has used telepathology to send high-resolution pictures to pathologists in high-income countries for diagnosis.
3. Create electronic medical record (EMR) system. Using the open-access software OpenMRS, BCCOE has developed an EMR system to track patient data, treatment details, and clinical outcomes. It is also used for chemotherapy administration, which minimizes errors.
4. Advocate for better cancer care. Cancer centers in African countries should lobby for all necessary chemotherapies to be added to the WHO essential medicines list, and for their governments to invest more in cancer care.
5. Start cancer registry. It is necessary for governments and hospitals to know the prevalence of different cancers in their country in order to best address the burden of disease, and track future progress.

These innovative strategies are universal to cancer and healthcare centers around Africa. By adopting these strategies, others can provide high-quality treatment for childhood cancers, and help to alleviate this disease burden.

POSTER

POSTER SESSION TWO

16:30–18:00
Thursday
9 November

Shyirambere, Cyprien

P327 | NUTRITIONAL STATUS AT DIAGNOSIS AND CLINICAL CHARACTERISTICS OF CHILDREN ON AN INPATIENT ONCOLOGY WARD IN RWANDA

Shyirambere, Cyprien¹; Kathryn, Beck¹; Uwamahoro, Vincent²; Nshimyiryo, Alphonse¹; Park, Paul H.^{1,3,4}; Mpunga, Tharcisse²
¹Partners in Health / Inshuti Mu Buzima; ²Butaro District Hospital / Ministry of Health; ³Harvard Medical School; ⁴Brigham and Women's Hospital

Correspondence cshyirambere@pih.org

Background Malnutrition in cancer patients has been shown to negatively impact response to therapy, impair performance status, increase incidence of treatment-related side effects and may impact survival. Among children under-five in Rwanda, 38% are chronically malnourished, 2% are wasted, and 9% are underweight. Therefore, we expect that children and adolescents diagnosed with cancer may be malnourished at diagnosis. To our knowledge, this is the first study in Rwanda to assess prevalence of malnutrition among pediatric oncology patients.

Methods All newly admitted pediatric oncology patients starting inpatient chemotherapy at the Butaro Cancer Center of Excellence (BCCOE) located at Butaro District Hospital in rural Rwanda from January 1, 2012 to December 31, 2015 were included. Age, residence, clinical diagnosis, weight, height, HIV status, and insurance status were collected. Using 2006 World Health Organization international growth references, four nutritional outcomes of interest were assessed (stunting, wasting, underweight, and thinness). Growth references assessing outcomes for children under-five are based on weight and height/length, while those used to assess outcomes for children over-five are based on Body Mass Index (BMI) and age. Therefore, outcomes in these age groups were evaluated separately.

Results Two-hundred-eighteen patients met criteria for inclusion. Fifty-six (n=123) percent were male, and the mean age was 6.7 years. Three percent (n=6) were HIV positive. Diagnoses included: Wilms Tumor (n=85), acute lymphoblastic leukemia (n=64), Hodgkin Lymphoma (n=25), Burkitt and other non-Hodgkin Lymphomas (n=16), rhabdomyosarcoma (n=11), and other cancers (n=17). Among those under-five, 14.7% (n=14) had a weight-for-height z-score (WHZ) <-2 SD (wasting), 46.9% (n=45) had a height-for-age z-score (HAZ) <-2 SD (stunting), and 27.4% (n=26) had a weight-for-age z-score (WAZ) <-2 SD (underweight). Among those 5-16 years (n=120), 32.5% (n=39) had a BMI-for-age z-score <-2 SD (thinness).

Conclusions Overall, children under-five admitted for inpatient chemotherapy to BCCOE were more malnourished than the general under-five population in Rwanda for all outcomes assessed. National level data does not include measures of malnutrition among older children and adolescents for comparison, however, a third of patients >5 were found to be thin for their age, which warrants future investigation. WHZ and WAZ in children with large tumor masses is less sensitive than other measurements, such as arm anthropometry, in detecting malnutrition. Future studies should assess other measurements of malnutrition, explore the downstream consequences of malnutrition on outcomes, and study nutrition interventions, such as high calorie/protein nutrient supplementation before and during cancer treatment and its effect on nutritional status.

PRESENTATION

QUALITY TREATMENT IN LOW RESOURCE COUNTRIES

(cont.)

14:40–16:30

Tuesday

7 November

Shyirambere, Cyprien

THE VALUE OF DISEASE-BASED TREATMENT PATHWAYS TO IMPROVE QUALITY, REDUCE ERRORS, AND IMPROVE PATIENT OUTCOMES

Shyirambere, Cyprien¹; Fehr, Alexandra¹; Shulman, Lawrence²

¹Partners in Health / Inshuti Mu Buzima; ²University of Pennsylvania

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Cancer care is complex. In order to properly care for and treat cancer patients, there must be access to the entirety of the continuum of care, including: the ability to diagnosis the disease, the ability to accurately stage the disease (including access to staging tools like imaging, ultrasounds and cat-scans), access to systemic therapies (including chemotherapy, targeted therapy, and hormone therapies), access to radiotherapy, comprehensive palliative care, and social support (including nutritional support and transportation). It follows then, that a multidisciplinary team – including general physicians, nurses, oncologists, pathologist, pediatricians, surgeons, and more – is also necessary for cancer treatment. Further, these treatment specifics vary considerably depending on the type and stage of cancer being treated. Lastly, an electronic medical record system is a necessary component of tracking patient information, treatment details, and clinical outcomes. In high-income countries treatment pathways that include the entire continuum of care from initial evaluation to follow-up or end of life care are increasingly in use in an effort to reduce variation in care, improve quality and control costs. However, in low-income countries, including many countries in Africa, not all components of the continuum of care are readily available, and oncologic expertise varies greatly. Therefore, standardized treatment pathways that provide a structured way to treat cancer, are an essential component of successfully caring for and treating cancer in much of the developing world. These pathways should include step-by-step instructions on, for example, the minimum imaging requirements for staging, and, based on the results, the appropriate treatment steps to take, including systemic therapy, surgery, and/or radiotherapy. Implementation of treatment pathways in low-income countries has the potential to greatly reduce treatment errors, improve treatment quality, and, ultimately, greatly improve patient outcomes.

In Rwanda, we have used treatment pathways as a way of providing high quality, comprehensive cancer care at the Butaro Cancer Center of Excellence (BCCOE). BCCOE was founded in 2012 in collaboration with the Rwandan Ministry of Health, Partners In Health, and the Dana-Farber Cancer Institute. At BCCOE trained general physicians, pediatricians, and internists, along with other members of the clinical team, treat cancer patients using disease-specific treatment pathways to determine the necessary actions from initial diagnosis to the end of treatment, and track details in OpenMRS, an open-source electronic medical record system customized for cancer care. With this method, BCCOE is able to successfully care for and treat cancer patients in a low-resource setting.

PRESENTATION

Siebert, Reiner

WHOLE GENOME, EPIGENOME AND TRANSCRIPTOME PROFILING OF BURKITT LYMPHOMA

BURKITT LYMPHOMA

11:00–12:30

Wednesday

8 November

Siebert, Reiner¹

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Burkitt lymphoma (BL), including its leukemic variant Burkitt leukemia (B-AL), is the most common type of pediatric B-cell lymphoma. Endemic, sporadic and immune-deficiency related BL are differentiated. The biological hallmark of BL of all these three subtypes is the IG-MYC translocation involving MYC and mostly the immunoglobulin heavy (IGH) locus or more rarely one of the immunoglobulin (IG) light chain loci. At the cytogenetic level the IG-MYC translocation is the sole abnormality in around 40% of cases. Overall, BL is characterized by a low genomic complexity. In the present study we analyzed the genomic, epigenomic and transcriptomic landscape of 39 sporadic BL in children/adolescents (age at diagnosis <20 years) by sequencing according to the guidelines of the International Cancer Genome Consortium. The pathognomonic IG-MYC translocation was detected in all cases using WGS and/or FISH analysis. Two different expression patterns of the MYC transcripts which were associated with the translocation breakpoint location were identified. Moreover, IG non-MYC translocations, IGH-CBFA2T3, IGH-HECW2, and IGH-CCNG1, were identified. The integration of single nucleotide variants (SNVs), structural variant (SVs), and copy number aberrations (CNAs) identified a total of 54 recurrently affected genes (≥ 3 samples). MYC, ID3, CCND3, TP53, FBXO11, SMARCA4, DDX3X, ARID1A each mutated in $\geq 20\%$ of samples. A subset of the genes identified as drivers by bioinformatics analysis also showed differential splicing. Interestingly, SNVs and SVs of the FBXO11 gene were mutually exclusive. Immunohistochemical analysis of FBXO11 was done in tonsils, lymph node samples, BL and non BL samples. BL showed essentially an exclusively cytoplasmic staining pattern independent of the presence of SNV or SV involving FBXO11 gene, while normal B-cells and non BL exhibited predominant nuclear FBXO11 staining. Three new mutational signatures were discovered in the analysis of the whole ICGC MMML-Seq cohort and were present in BL, two of which may be related to the action of AID, one with a low degree (L1) and one with a high degree (L2) of modulation by altered repair pathways. Overall sporadic BL showed a comparably low genomic complexity with a low number of SNVs and SVs. However, the integration of CNAs, SNVs and SVs as well as patterns of differential splicing allowed us to identify recurrently affected genes, which are involved predominately in the PI(3) kinase pathway, tonic BCR signaling, and cell cycle regulation, chromatin composition and germinal center development.

POSTER

WELCOME
RECEPTION
AND POSTER
SESSION ONE

16:30–18:00

Tuesday

7 November

Silkensen, Shannon

**P031 | ASSESSING PATHWAYS TOWARD QUALITY BIOMARKER
RESEARCH IN LMICS**

Flanigan, John¹; Henderson, Marianne¹; Silkensen, Shannon¹

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Statement of the problem Reproducing basic, clinical, and population-based NCD research relies on high-quality biospecimens that are curated so that the integrity of the biomarkers is preserved. The analytes contained in these specimens become the direct source material from which targets for therapy, detection, and prevention are identified. The lack of available standardized, high-quality biospecimens being collected, processed, stored and used in low- and middle-income countries is widely recognized as a significant roadblock to conducting NCD research in these settings. Increasing the integrity of biospecimen collections will facilitate reproducible research and speed translation into public practice.

Proposed Solution To effectively increase the quality of biobanked specimens that can be used for biomarker research in low- and middle-income countries, the number of clinical and research personnel proficient in these skills must be increased. Awareness of quality methods in biobanking raises the reproducibility of all research studies supported by the skilled staff. Could currently funded LMIC organizations or partnerships be leveraged to increase the number of clinical and research personnel proficient in biobanking skills?

Conclusion This presentation will address possible pathways toward increasing the number of personnel competent in the best practices of biobanking and seek feedback from the AORTIC 2017 participants.

POSTER

POSTER SESSION

TWO

16:30–18:00

Thursday

9 November

Silkensen, Shannon

P242 | US NCI'S CENTER FOR GLOBAL HEALTH REGIONAL CENTERS FOR RESEARCH EXCELLENCE PROGRAM TO SUPPORT RESEARCH INFRASTRUCTURE ON NON-COMMUNICABLE DISEASES, MENTAL HEALTH AND INJURIES (NCDS)

Flanigan, John¹; Silkensen, Shannon¹

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Cancer researchers have begun to unravel the complex relationship between genes, the environment, cancer diagnosis, and survival. Through this process, it has become clear that working in populations outside the US is essential to their success. Forward-looking teams of meritorious investigators from the US and institutions across the world have come together to create Regional Centers of Research Excellence. These centers are based at top-tier institutions in low- and middle income countries. They have galvanized investigators to work in multidisciplinary teams to tackle cancer and other non-communicable diseases (NCD) to improve the health of the US and LMIC populations.

When the two-year planning grants conclude, each will have produced a blueprint for the cancer and NCD research agenda in their region or country. The credibility of this blueprint comes from the local needs assessment that documents the community's top cancer and NCD research priorities. Investigators leading the RCRE will use this input to craft a well-conceived research plan that specifies the short-, mid-, and long-term outcomes of the research program. In addition to specifying measurable goals, the investigators will include concrete metrics for monitoring and evaluating the quality, value, and scientific impact of the Center in the region.

These Centers will increase the operational efficiencies in the region by training and retaining skilled personnel; cultivating first-rate facilities; and developing processes to maintain continuous operations. Moreover, they will shape the marketplace by increasing the economies of scale in the region and thereby reduce the cost and increase the production of research in the region.

All of these components work towards is our ultimate goal: to improve the health of the US and LMIC population. They will address unanswered scientific questions that require an international engagement and or an adaptation to a resource limited environment. This presentation will highlight the scientific strengths and visions of the Centers in Africa.

POSTER

WELCOME RECEPTION AND POSTER SESSION ONE

16:30–18:00

Tuesday

7 November

Simbiri, Kenneth

P032 | TRANSFORMATION OF PRIMARY CONJUNCTIVAL CELLS TRANSFECTED WITH PAPILLOMA AND HERPESVIRUS ONCOGENES

Jha, Hem²; Massaro-Giordano, Giacomina³; Robertson, Erle³;
Simbiri, Kenneth¹

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Objective Ocular surface squamous carcinoma (OSSN) is a common cancer that has recently increased in incidence in HIV-1 infected patients. The rise has been more transparent in sub-Saharan Africa. Our objective: Determine inflammatory cytokines/chemokines, cell cycle markers, and growth factors in transfected primary conjunctival cells that have been associated with oncogenesis and to elucidate the mechanisms utilized by the viral proteins which contribute to OSSN associated pathogenesis in primary conjunctival cells.

Method We transfected primary conjunctival cells with different oncogenic viral genes (HPV16-E6, HPV16-E7, HPV16-E6/E7, KSHV-LANA, and EBV-EBNA1) that have been associated with transformation of infected cells. The cells were tested for expression of different markers linked to oncogenesis. We used RT-PCR to determine the expression of the markers. The level of expression was determined in each case. We also performed immunohistochemistry (IHC) on the primary cells using specific antibodies.

Results The transfected conjunctival cells were demonstrated to be epithelial as determined by expression of Cytokeratin-19 (C-19) and Vimentin markers. The primary conjunctival cells were efficiently transfected with the specific viral oncogenes resulting in expression of different cytokines, chemokine, cell cycle markers, and growth factors. The different constructs elicited expression and/or suppression of p53, p21, pRB, IL-10, IL-13, cyclinD1, TNF, TNF13B, and VEGF in specific transfected conjunctival primary cells.

Conclusion Our findings indicate that the viral oncogene expression in primary conjunctival cells contributed to the production of inflammatory cytokines, chemokines and dysregulation of cell cycle proteins in primary conjunctival tissues. This mirrors the transformation process in OSSN pathogenesis. Further studies should follow to identify pathways dysregulated that can be targeted for therapy or vaccine development.

POSTER

POSTER SESSION TWO

16:30–18:00

Thursday

9 November

Simonds, Hannah

P393 | A RETROSPECTIVE ANALYSIS OF THE EFFECT OF TUMOUR VOLUME ON SURVIVAL IN ADVANCED INVASIVE CERVICAL CARCINOMA: DOES SIZE REALLY MATTER...?

Simonds, Hannah¹; Fourie, Ilze¹

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Introduction The National Cancer Registry of 2010 lists invasive cervical cancer (ICC) as the second most common malignancy among females in South Africa. It has long been recognised that more advanced stages of cancer are associated with poor outcomes. This retrospective review investigates the effect of tumour volume on overall survival – and does so specifically for locally advanced (FIGO stage IIB – IIIB) cervical cancers. Currently all patients, irrespective of volume of tumour, are irradiated to the same total dose. The aim of this study is to determine whether overall survival is similar for all patients treated for stage IIB/IIIB disease and if suggestions can be made regarding the possibility of increasing or decreasing radiation dose based on tumour volume.

Materials and Methods This is a retrospective analysis of patients with histologically confirmed stage IIB/IIIB ICC treated with radical radiotherapy between January 2011 and December 2011. Exclusion criteria included the following: patients whom did not complete the full course of radiotherapy treatment, who did not receive brachytherapy and those who did not survive to the point of treatment completion. A total of 82 patients were identified, 71 of which met the inclusion/exclusion criteria.

Results In this study overall survival was found not to correlate with tumour volume ($p=0.135$). The logistic regression demonstrated that HIV status ($p=0.024$) and tumour stage ($p=0.048$) significantly impacted overall survival.

Conclusion Our conclusion is that there is no difference in overall survival for different tumour size groups in this small cohort. HIV status and tumour stage were, however significant. A larger cohort and improved methods of determining tumour volume (MRI) should be considered in future prospective studies.

PRESENTATION

Simonds, Hannah

SUSTAINING RADIOTHERAPY SERVICES FOR CERVICAL CANCER IN SOUTH AFRICA

IMPROVING QUALITY OF RADIOTHERAPY DELIVERY IN AFRICA

07:15–08:20

Wednesday

8 November

Simonds, Hannah¹

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Cervical cancer is one of the leading cause of death from malignancy in young women in Africa. The diagnosis is frequently made of locally advanced disease which is no longer operable. Radiotherapy remains the mainstay of cervical cancer therapy in South Africa. Facilities include 9 national oncology departments with 26 linear accelerators. Organisation of multi-disciplinary team meetings, support from gynaecology oncology colleagues and readily available brachytherapy services allow cervical cancer patients access to best standard care. Challenges remain in providing continuity of service with staff shortages, machine break-downs, stock-outs of Cisplatin and growing waiting lists.

POSTER

WELCOME RECEPTION AND POSTER SESSION ONE

16:30–18:00

Tuesday

7 November

Sinayobye, Jean d Amour

P077 | RWANDAN CANCER REGISTRY: RESULTS AND CHALLENGES

Sinayobye, Jean d Amour¹; Ingabire, Cecile²; Adedimeji, A.A.³; Murenzi, Gad¹; Mugenzi, Pacifique¹; Mutesa, Leon²; Castle, P.E.³; Anastos, Kathryn³
¹Rwanda Military Hospital; ²University of Rwanda; ³Albert Einstein College of Medicine

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Background Cancer information systems based on registries provide information on cancer burden and were shown to be the unique source of information for cancer program planning, monitoring and evaluation. However, only 1 in 5 low and middle-income countries have functional cancer registries either hospital based or population based only covering one city or a region of the country. The most recent Rwandan cancer registry was re-launched in 2010 but stopped four years later. A sustainable and functional cancer registry is needed in Rwanda as well as a need to understand the results, challenges and implications its quality for proper implementation.

Methods A hospital-based cancer registry in Rwanda was redeveloped in 2010 on NIH funding. Newly trained cancer registrars operated in four referral hospitals and two district hospitals where cancer care related services were available. Cancer cases abstraction covered from 2007 to 2014 using register books, medical records and histology reports to identify cancer patients. Recorded information included diagnosis topography and morphology, basis of diagnosis and classification using WHO-ICD-0-3 and CANREG-5.

Results From 2007 up to October 2014, 5,806 total cancers were registered and 55.5% (3,220) of cases were women. The most five common cancers seen were gastric cancer (589), breast cancer (564), cervical cancer (512), lymphomas (446) and liver cancer (346). Only 60.2% of the cases were microscopically verified. The medical record system was the biggest challenge where patients' medical records were essentially non-electronic; with high volume of data being incomplete and inaccurate. Unspecified information was high for most variables such as geographical distribution 11.4%, and modalities of cancer treatment at 40%. Limited basic facilities for cancer diagnosis such as pathologists and pathology laboratories lack of follow up data such as treatment, complications, survival or death were challenging. Low socioeconomic status or ignorance could prevent the patients from seeking cancer care in health facilities, and prefer seeking traditional healers or stay home and die from there causing underestimation the cancer statistics.

Conclusion It is important to examine and address the challenges around the registration activities and understand their implications on the quality of cancer registry to having a more sustainable, complete and usable cancer registry that can be used by policy makers and researchers. More importantly, it is necessary that the Government take the ownership to avoid funding-related discontinuation.

POSTER

WELCOME RECEPTION AND POSTER SESSION ONE

16:30–18:00

Tuesday
7 November

Singh, Elvira

P078 | BREAST CANCER TRENDS DIFFER BY ETHNICITY: A REPORT FROM THE SOUTH AFRICAN NATIONAL CANCER REGISTRY (1994–2009)

Singh, Elvira^{1,2}; Joffe, Maureen²; Cubasch, Herbert³; Ruff, Paul²;
Norris, Shane²; Pisa, Pedro²

¹National Cancer Registry; ²University of the Witwatersrand; ³Chris Hani
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Background Globally, an estimated 1.67 million incident breast cancer (BC) cases were diagnosed in 2012 corresponding to a rate of 43 per 100,000, with 6.3 million women alive diagnosed with BC in the previous 5 years. GLOBOCAN 2012 estimated that 522,000 women (13/100,000 population) died from BC during 2012, with BC ranking as the fifth leading cause of death from cancer overall. A previous description of BC in South African (SA) women for 1993–1995 reported an age-standardised incidence rate of 25/100 000 for all population groups with a lifetime risk of 1 in 36. This paper reports on more recent National Cancer Registry (NCR) data on BC in SA, explores breast cancer trends in terms of incidence and mortality rates, and investigates differences by ethnicity in post-apartheid SA between 1994 and 2009.

Methods Sources of data included the South African National Cancer Registry pathology-based reports (1994–2009) and Statistics South Africa (SSA) mortality data (1997–2009). Numbers of cases and age-standardised incidence rates (ASIR) were computed from the NCR database for 1994–2009. Age-specific incidence rates were calculated for five year age categories. The direct method of standardisation was employed to calculate age-standardised mortality rates using mortality data.

Results Between 1994 and 2009, there were 85 561 female BC in SA. Though the highest number of cases were in the Black population, the percentage increase in cases per population group (1994–2009) was highest in the Coloured population (570%) followed by the Black (290%), Asian (190%) and White (3.6%) populations. For Asians, a sharp increase in proportion of BC as a percentage of all females cancers was observed between 1994 and 2001 (6.2%), and continued to increase to 2009 by 9.4%. Whites and Asians presented higher incidences of BC at an earlier age compared to Blacks and Coloureds in 2009. In 2009, the ASIR for Total Population, Blacks, Whites, Coloureds and Asians were 26.9, 18.7, 50.2, 40.9 and 51.2 per 100000 respectively. In 1998, there were 1618 BC deaths in SA compared to 2784 deaths in 2009. Age-standardised mortality rates (ASMR) between 1997 and 2004 increased but stabilised thereafter.

Conclusion This paper demonstrated BC incidence rates are similar to other countries in the region, but lower than international estimates. Reasons for under-estimation include the under-reporting from the private sector laboratories and limitations of the pathology-based registry.

PRESENTATION

OESOPHAGEAL CANCER RESEARCH

11:00–12:30

Friday

10 November

Snell, Jeff

SUBTYPING SUB-SAHARAN OESOPHAGEAL SQUAMOUS CELL CARCINOMA BY COMPREHENSIVE MOLECULAR ANALYSIS

Snell, Jeff¹; Liu, Wenjin¹; Mulima, Gift²; Shores, Carol¹; Gopal, Satish^{1,2}; Sharpless, Ned¹

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Esophageal squamous cell carcinoma (ESCC) is endemic in regions of sub-Saharan Africa (SSA), where it is the third most common cancer. Here, we describe whole-exome tumor-normal sequencing and RNA transcriptomic analysis of 59 patients with ESCC in Malawi. We observe similar genetic aberrations as reported in Asian and North American cohorts, including mutations of TP53, CDKN2A, NFE2L2, CHEK2, NOTCH1, FAT1 and FBXW7. Analyses for non-human sequences did not reveal evidence for infection with HPV or other occult pathogen. Mutational signature analysis revealed common signatures associated with aging, cytidine deaminase activity (APOBEC) and a third signature of unknown origin, but signatures of inhaled tobacco use, aflatoxin and mismatch repair were notably absent. Based on RNA expression analysis, ESCC could be divided into three distinct subtypes, which were distinguished by their expression of cell cycle and neural transcripts. This study demonstrates discrete subtypes of ESCC in SSA, and suggests the endemic nature of this disease reflects exposure to a carcinogen other than tobacco and oncogenic viruses.

PRESENTATION

Snyman, Leon

SENTINEL LYMPH NODE DETECTION IN A SOUTH AFRICAN CERVICAL CANCER POPULATION

**SITE SPECIFIC
CANCERS
& OTHER
ABSTRACTS**

13:30–14:30

Friday

10 November

Lindeque, Gerhard; Snyman, Leon¹

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Introduction Cervical cancer remains the most common gynaecologic cancer in South Africa, where the at-risk population is not screened for the disease, and the prevalence of the disease as well as HIV is high. The sentinel lymph node (SLN) algorithm has been described and suggested as a feasible alternative to routine full pelvic lymphadenectomy in women with operable early stage cervical cancer. This concept has not been researched in a population with high prevalence of HIV, TB and PID.

Materials and Methods Seventy-eight women were recruited. Intracervical methylene blue and 99Technesium nanocolloid were used to identify SLNs. Indocyanine green was used in eight patients. Patients with SLNs negative after H&E examination underwent ultrastaging. Standard full pelvic lymphadenectomy was performed on all women.

Aims To determine the detection rate, bilateral detection rate, sensitivity, specificity, positive and negative predictive values of sentinel lymph nodes in cervical cancer. Sub-group analysis to identify characteristics impacting on detection rates.

Results Data of 72 women were available for analysis of which 65% were HIV infected. The mean age of the group was 47.2 years (SD 9.09), and for HIV-negative women 52.8 compared to 44.2 years for HIV-positive women ($p < 0.0001$). The mean BMI was 27.5 kg/m² (SD 5.41). Forty-seven women (65.3%) were HIV infected. The mean tumour diameter was 24 mm. Forty-eight patients (66.67%) were stage IB1 and 11 (15.3%) were IB2. Eighteen patients (25%) had pelvic lymph node metastases. The mean pelvic lymph node count was 25.16.

The SLN detection rate was 65.3% and the bilateral detection rate was 30.5%. The SLN detection rate in HIV positive was 68% and 60% in HIV negative women ($p = 0.49$). The sensitivity, specificity, positive and negative predictive values were 85.7%, 100%, 100% and 98.33% respectively.

Detection rates were significantly better in women with tumour size < 2 cm, node negative and BMI < 25 kg/m² (compared to ≥ 30 kg/m²) were 77.1%, 72.2% and 77.7% respectively.

Conclusion The SLN detection rate is much lower in this group of women compared to the published literature reporting detection rates of around 80%. Sensitivity, specificity, PPV, NPV and false negative rates are comparable to the published literature. SLNB is a feasible option in the management of well selected women with early stage cervical cancer.

PRESENTATION

REGISTRATION,
ONCOLOGY
NURSING
& OTHER
ABSTRACTS
13:30–14:30
Thursday
9 November

Somdyala, Nontuthuzelo

HOW MUCH DOES IT COST TO RUN A POPULATION-BASED CANCER REGISTRY IN SOUTH AFRICA: THE CASE OF THE EASTERN CAPE CANCER REGISTRY

Somdyala, Nontuthuzelo¹; Mbuthini, Linda¹; Ncinitwa, Akhona¹; Sithole, Nomfuneko¹; Bradshaw, Debbie¹; Tangka, Florence²; Edwards, Patrick³; Subramanian, Sujha³

¹Eastern Cape Cancer Registry, SAMRC Burden of Disease Research Unit;

²Centers for Disease Control Prevention; ³RTI International

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Objective Cancer registries are a disease information system that provides data on cancer incidence, and ideally in addition survival and mortality rates. Lack of reliable data on cancer burden is a serious barrier to planning effective cancer control activities. This puts emphasis on health ministers to consider cancer registries as the most important requirement in the planning of cancer control programmes. However, one is always confronted by the question; how much does it cost to run a cancer registry? The aim of this study is to quantify and cost resources used by the Eastern Cape Cancer Registry (ECCR) in South Africa.

Method We used CDC's International Registry Costing Tool (IntRegCosting Tool) which is a standardized Excel-based instrument that was developed using established economics.

Methods The tool has been tested among 13 cancer registries across 7 countries. A sample comprised of cancer cases which were collected during 2015. Price estimates around collection activities were calculated including capturing and storage. Registry staff inputted information about funding received, and allocated those funds across budget categories and other specific registry activities. This activity-based costing process resulted in the creation of summary reports that can be used to help us understand the true operational costs and factors that might impact efficiency.

Results The total number of cases during 2015 was 816. About 69% of the registry's resources went towards personnel, where the registry employs about 7 full-time equivalent staff. The second largest portion of expenses; 15% was towards computers, travel, training, and other materials followed by consultants (8%), overhead (7%), and software (1%). By detailed registry activity, the highest cost activity was research studies and advanced analysis, followed by administration. Management costs was the third highest cost activity, while data collection and abstraction was the fourth, and publications the fifth. The total value of resources used was 277,070 US dollars, while the cost per inhabitant was about 23 cents.

Conclusion The CDC's IntRegCosting Tool was successfully used to quantify the resources used by the ECCR and to examine the registry's highest cost activities. These cost estimates help provide the evidence-based information that can be used to identify areas for improvement, towards funding requests, and even for policy-makers to better understand the needs of the cancer registries. In the present world which is very mindful about cost, this study is very useful and forms one of the basis for planning and budgeting.

POSTER

WELCOME RECEPTION AND POSTER SESSION ONE

16:30–18:00

Tuesday

7 November

Somdyala, Nontuthuzelo

P079 | METHODS USED IN CHECKING VITAL STATUS INFORMATION BY EASTERN CAPE CANCER REGISTRY

Somdyala, Nontuthuzelo¹; Mbuthini, Linda¹; Ncinitwa, Akhona¹;
Sithole, Nomfuneko¹; Bradshaw, Debbie¹

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Objective Cancer registries' main objective is to generate cancer incidence. In addition; these registries are also expected to estimate cancer survival which information should be utilized nationally and regionally to improve cancer care and inform cancer control policies. Cancer survival information is scarce in Africa including South Africa. Since 2015; the Eastern Cape Cancer Registry started to collect routinely information on vital status for all cases in the database particularly for the period 2008–2013. In this presentation methods that are used by this registry will be discussed.

Method Cases for the period 2008–2013 were extracted from the database. A list was generated for all cancer sites each with 10 and more cases. A total of 18 cancer sites were selected. Vital status information for each case was checked which is either alive or dead of which 4 201 cases was not known. All cases with known status "dead" from the database were excluded. A follow up was undertaken using the following:

Methods (i) A list of all cases with national identity number was generated and linked to the Home Affairs Death Register

(ii) A list of cases with a cellphone number was generated and were contacted

(iii) A list of patients seen in an oncology hospital was generated and attendance and death registers were checked

(iv) A list of 1835 cases whose vital status information could not be verified by the above three methods was generated. Physical addresses were checked and sorted according to towns and villages. Lists were submitted to data collectors and home visits were done.

Results A total of 65% cases were verified using different methods; of which linkage to Home Affairs death register and hospital records had the highest contribution whereas home visits the least. Below are the summary results.

National I.D: 1235

Telephone: 85

Hospital records: 1046

Home visits: 367

Conclusion Results achieved were encouraging and improvement on quality of information for all selected cases was observed creating an opportunity for better results in cancer survival studies. More time is needed for home visits for better results since villages are scattered in the registration area.

POSTER

POSTER SESSION

TWO

16:30–18:00

Thursday

9 November

Stewart, Tessa

P445 | POPULATION RISK FACTORS FOR LATE-STAGE PRESENTATION OF CERVICAL CANCER IN SUB-SAHARAN AFRICA

Stewart, Tessa¹; Moodley, Jennifer²; Walter, Fiona¹

¹University of Cambridge; ²University of Cape Town

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Background Cervical cancer is the most prevalent malignancy in sub-Saharan Africa, and the most common AIDS-related cancer in women. A lack of population-based screening programmes and poor coverage where programmes are available, means many women only seek professional help when they experience symptoms of cervical cancer implying advanced stage malignancy, and resulting in a poor prognosis/high mortality rate. Numerous physical and socio-cultural risk factors make women in sub-Saharan Africa vulnerable to contracting HPV and developing cervical cancer. This ecological study aimed to assess the relationship between population-level exposures to these risk factors and late-stage presentation of cervical cancer.

Method A literature review was undertaken for risk factors of HPV infection and the development of cervical cancer in sub-Saharan Africa. Open-access databases were mined for variables for each country within sub-Saharan Africa that most closely represented each of the risk factors. A proxy for late-stage presentation of cervical cancer was used: a ratio of incidence-to-mortality (IMR), and these data were gathered from IARC's GLOBOCAN 2012 database. Countries with high cervical cancer mortality rates relative to their incidence rates have an IMR closer to one, suggesting a larger proportion of late-stage presentation. Variables showing significant correlation to the IMR, as well as screening programme data were used in a stepwise multiple regression to quantify the effect of each on the IMR.

Results Western Africa had the lowest median IMR at 1.463, followed by Eastern Africa (IMR=1.595) and Central Africa (IMR=1.675), whereas Southern Africa had the highest median IMR at 1.761. Variables selected for the final model included GDP, HIV infection, % rural population, parity, not using a condom with non-regular partner, and no formal education. The model explains 65.2% of changes seen in the IMR. Significant predictors of IMR were GDP (coefficient = 2.189×10^{-6} , $p = 0.064$), HIV infection (coefficient = -1.936×10^{-3} , $p = 0.095$), not using a condom (coefficient = -1.347×10^{-3} , $p = 0.013$), and no formal education (coefficient = -1.311×10^{-3} , $p < 0.000$).

Conclusion Using an incidence-to-mortality ratio allows a comparative estimation of late-stage presentation of cervical cancer despite a lack of country-specific staging data.

PRESENTATION

Subramanian, Sujha

COST AND AFFORDABILITY OF BREAST AND CERVICAL CANCER SCREENING, DIAGNOSIS AND TREATMENT IN KENYA: PATIENT PAYMENTS IN THE PRIVATE AND PUBLIC SECTORS

Subramanian, Sujha¹; Gakunga, Robai¹

¹RTI International

**NATIONAL
CANCER
CONTROL
PLANS & OTHER
ABSTRACTS**

13:30–14:30

Friday

10 November

Correspondence ssubramanian@rti.org

Introduction The incidence of cancer is rising in low- and middle-income countries, including Kenya, disproportionately to the rest of the world. Our objective was to quantify patient payments to obtain cancer screening, diagnosis, and treatment services in the public and private sector in Kenya and evaluate patients' ability to pay for the services.

Methods We collected payment data on breast and cervical cancer, the most prevalent cancers among women, from Kenyatta National Hospital, the main tertiary public hospital, and the Kibera South Health Center, a public outpatient facility, and private sector practitioners and hospitals. We developed detailed treatment frameworks for each cancer site and used an itemization cost approach to estimate payments. Patient affordability metrics were derived from Kenyan government surveys and national datasets.

Results We report patient payments in the public and private sectors in U.S. dollars. Cancer screening costs ranged from \$2.02 to \$3.89. Diagnostic procedures were substantially more expensive. Breast cancer diagnostic procedures were on average \$401.00 and \$1,096.75 in the public and private facilities respectively. Similarly, cervical cancer diagnostic workup was \$195.38 and \$488.45. Early stage cancers (Stage I and II) required payments of about \$1,000 in public facilities and \$8,000 to \$9,000 in private facilities. The cervical and breast cancer treatment cost for stage III (curative approach) was approximately \$1,500 in public facilities and \$10,000 in the private facilities. Payments required for cervical cancer were consistently lower than breast cancer for each stage at diagnosis. More than 80% of Kenyans aged 15 to 49 years do not have health insurance, which makes cancer services generally unaffordable for most people given the overall high cost of services relative to income (average household expenditure per adult is \$413 per annum).

Conclusion There is substantial variation in patient costs between the public and private sectors. Breast and cervical cancer diagnosis and treatment costs, even in the public sector, represent a substantial economic burden that can result in catastrophic expenditures.

PRESENTATION

Subramanian, Sujha

COST-EFFECTIVENESS OF INTEGRATED HPV VACCINATION AND SCREENING: IMPACT ON HIV AND NON-HIV INFECTED WOMEN

**PREVENTION
& SCREENING
FOR CERVICAL
CANCER IN
AFRICA**

11:00–12:30

Tuesday

7 November

Subramanian, Sujha¹

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Although several cervical cancer screening programs have been initiated in Sub-Saharan Africa, there is limited evidence on the role of integrated HIV and cervical cancer interventions. We have developed a novel microsimulation model to assess cost and effectiveness of interventions and strategies for scaling up cervical cancer prevention and screening at the population level in Sub-Saharan Africa under 'real-world' conditions that include HIV prevention and treatment interventions, HPV vaccination and cervical cancer screening. The findings from the model will help assess the impact of prevention and screening interventions incorporating the underlying HPV infection process which causes almost all cervical cancers and the interlinked HIV infection process which substantially increases the risk of developing cervical cancer.

The microsimulation model consists of three interlinked individual modules: risk assessment, natural history, and intervention. The output from the risk assessment module will identify whether an individual is HIV positive or negative (true risk) and an individual's perceived risk (positive or negative based on testing and those that are unknown). Based on the rates of HIV acquisition and testing, an individual's true and perceived risk will change. The risk module will also identify HPV infection which will be incorporated into the natural history module as the key risk factor for developing cervical cancer. In the natural history module, women are followed from age 12 to 100 years and, at the beginning of the simulation, no one is infected with HPV or CIN1, CIN2-3, or cancer. Each year women infected with HPV may undergo regression, no change, or progression to CIN. Some women will progress through CIN and CIN2-3 and finally have cancerous lesions. Women with cancer either become symptomatic or progress through Stages II-IV. Once a cancer diagnosis is made, the probability of survival is stage-specific. Women without cancer will leave the model if they undergo a hysterectomy or die of causes other than cervical cancer. The intervention module contains details on HIV and HPV primary prevention [including age at initiation of sexual activity, number of partners, condom use], HPV immunization, screening by visual inspection, rapid HPV screening, diagnostic tests and cancer treatment.

In the presentation, we will highlight the impact of multiple scenarios on the incidence of cervical cancer and the cost per quality adjusted life years. We will also present the cost and effectiveness of the interventions for the overall population and specifically for the cohorts of HIV infected and non-infected women.

POSTER

Subramanian, Sujha

P071 | ESTIMATING THE COST OF OPERATING THE ZIMBABWE NATIONAL CANCER REGISTRY

**WELCOME
RECEPTION
AND POSTER
SESSION ONE**

16:30–18:00

Tuesday

7 November

Subramanian, Sujha^{1,3}; Tangka, Florence²; Edwards, Patrick³

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Correspondence ssubramanian@rti.org

Objective The Zimbabwe National Cancer Registry, established in 1985, is one of the fully functional population-based cancer registries in sub-Saharan Africa. Registry results have been widely published and the registry has contributed data to four successive volumes of “Cancer Incidence in 5 Continents”. The objectives of this study were to estimate the financial costs and in-kind contributions of the registry and to gather factors that may influence costs and quality of cancer registry operations.

Methods Using CDC’s International Registry Costing Tool (IntRegCosting Tool), we collected and assessed 2015 cost data. The costing process, which has been validated through pilot-testing in numerous countries globally, used activity-based costing to allocate resources across budget categories and specific registry activities. Registry staff inputted data into the tool and received summary reports on the costs and factors that might impact efficiency.

Results The registry, which covers a population of a little over 13 million inhabitants and an area of 390,757 square kilometers, had 6,548 total cancer incident cases in year 2015. About 69% of the registry resources went towards personnel, where the registry employs 4 full-time equivalent staff. A fourth of the registry’s resources went towards computers, travel, training, and other materials, while 6% went towards overhead, and less than 1 percent towards software. Data collection and abstraction was the costliest activity, costing a little over 13,000 US dollars of the total budget of about 43,000 US dollars. Administration was the second most costly activity, costing a little over 12,000 US dollars. The registry’s total cost per cancer incident case was 7 US dollars, and the total cost per inhabitant was less than a cent.

Conclusion It is important to know the true cost of running a cancer registry for the purposes of mobilizing resources. The IntRegCosting Tool was able to provide detailed results on the costs of running the cancer registry, and helped identify high cost activities, along with costs per case and per inhabitant. The present study provides a snap shot assessment of the activity-based cost currently incurred by the Zimbabwe registry.

POSTER

WELCOME RECEPTION AND POSTER SESSION ONE

16:30–18:00

Tuesday

7 November

Subramanian, Sujha

P072 | ECONOMIC ANALYSIS OF THE NAIROBI CANCER REGISTRY: IMPLICATIONS FOR EXPANDING AND ENHANCING CANCER REGISTRATION IN KENYA

Subramanian, Sujha^{1,3}; Gakunga, Robai²; Okerosi, Nathan¹; Edwards, Patrick³; Tangka, Florence⁴

¹Nairobi Cancer Registry; ²Independent Consultant; ³RTI International; ⁴CDC

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Objective Cancer registration is an important activity for informing cancer control activities. Cancer registries in Sub-Saharan Africa have limited resources to effectively operate because of competing priorities. To date, there has not been an assessment of the resources and funding needed to perform all the activities essential for cancer registration in Kenya. Evidence will help registries to quantify and advocate for the funds needed to sustain, enhance, and expand high quality cancer registration in Kenya.

Methods In this study, we used the Centers for Disease Control and Prevention's (CDC's) International Registry Costing Tool (IntRegCosting Tool) to evaluate the funding, cost, and labor resources used to perform the cancer registry operations in Nairobi County for two annual periods between July 2012 and June 2014.

Results Funding from grants, research studies, and international organizations provided 70% of the registry operations' cost. For both time periods, the most-costly registry activities were related to administration, management, and training, along with data acquisition activities such as data abstraction, entry, and validation. Even among these core registry activities, however, substantial variations existed.

Conclusions Stable funding for cancer registry operations is necessary to sustain core registry activities in order to deliver high-quality data, which in turn is necessary to foster evidence-based policies to improve cancer outcomes. As stakeholders look into expanding the Nairobi Cancer Registry into a national program, the cost data provided in this study will help justify the funding required for sustaining and expanding registry activities.

PRESENTATION

REGISTRATION,
ONCOLOGY
NURSING
& OTHER
ABSTRACTS

13:30–14:30

Thursday

9 November

Subramanian, Sujha

RESOURCE REQUIREMENTS FOR CANCER REGISTRATION IN AFRICA

Subramanian, Sujha^{1,2}; Edwards, Patrick²; Korir, Anne³; Wabinga, Henry⁴; Hoover, Sonja²

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Purpose High quality population-based cancer registry data are critical for implementing cancer control policies. Data on the resources needed to support cancer registration are essential for increasing global capacity in cancer surveillance and control. The aims of this study are to (1) Engage global stakeholders to identify and quantify the resources needed to strengthen and expand existing registries or establish new registries where none exist to support the collection of high quality cancer data; and (2) Share estimates of the costs for establishing and maintaining cancer registries with stakeholders to guide policies and facilitate planning.

Methods A tool was developed to collect activity-based cost data from cancer registries. Working with registry staff and in-country consultants, training webinars were conducted. Cost and resource use data were collected from registries in Kenya and Uganda. All monetary and non-monetary contributions to registry activities were collected for a comprehensive assessment.

Results Host institution contributions provide valuable support for registry activities and account for 30% to 58% of registry operating expenditures. The largest budget component incurred by cancer registries is labor costs and this contributes to over half the total cost. The cost per case for registries in Africa ranged from \$10.22 to \$15.62. Registries that were largely supported by research activities incurred higher costs than the more established long-standing registries.

Conclusions Based on our preliminary assessment, the collection of information on the cost of operating cancer registries in LMICs is feasible. Some of the approaches to reduce the cost of operating population-based registries are to partner with universities and hospitals as infrastructure and other high fixed cost expenditures can be shared or donated, and to streamline data collection activities to reduce labor cost (e.g. travel to data sources and time spent accessing medical records).

PRESENTATION

RADIATION & OTHER ABSTRACTS

08:25–09:25

Friday

10 November

Taku, Nicolette

EXTERNAL BEAM RADIOTHERAPY IN WEST AFRICA: 1975–2015

Hopkins, Kirstin Isabel¹; Prasad, Rajiv¹; Rubio, Alfredo Polo¹; Taku, Nicolette^{1,2}; Zubizarreta, Eduardo¹

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Purpose/Objective XRT commenced in West Africa with the provision of Cobalt-60 teletherapy treatment at Lagos University Teaching Hospital, Nigeria in 1973. Through investments in radiotherapy infrastructure and collaborative efforts with the IAEA, among others, West African nations have seen an increase in the number of megavoltage units (MVUs) installed in public healthcare centers. However, no analysis of the trend in XRT capacity specific to this region has been performed. The purpose of this study is to present the absolute number of MVUs and the number MVUs per 100 million persons in West Africa from 1975 to 2015.

Material/Methods West Africa was defined in accordance with the United Nations delineation and inclusive of Benin, Burkina Faso, Cabo Verde, Cote d'Ivoire, The Gambia, Ghana, Guinea, Guinea-Bissau, Liberia, Mali, Mauritania, Niger, Nigeria, Senegal, Sierre Leone, and Togo. An extensive literature search for publications detailing the number of MVUs in public centers in West African countries was performed, and extracted MVUs data were confirmed using the Directory of Radiotherapy Centers (DIRAC), as necessary. Population data were obtained from the World Bank Group and used to determine the number of MVUs per 100 million persons.

Results Twenty-five unique publications of relevance were identified. Ten of the 16 (62.5%) West African countries have no history of XRT. Two countries lost their XRT treatment capacity, leaving only 4 countries with available XRT as of 2015. The number of functioning MVUs in 1975, 1985, 1995, 2005, and 2015 were 1, 1, 5, 7, and 7, respectively. At 6 total, the maximum number of Cobalt-60 machines occurred in 2005. From 2005 to 2015, the number of functioning Cobalt-60 machines decreased from 6 to 2. The number of LINACs in the region increased from 1 to 6 during this same time interval. However, 3 LINACs were designated as non-functional by the end of 2015. When machines known to be non-functional were excluded, the numbers of MVUs per 100 million persons were 0.8 in 1975, 0.6 in 1985, 2.4 in 1995, 2.6 in 2005, and 2.0 in 2015.

Conclusions Although the absolute number of MVUs in West Africa has increased during the last 40 years, the XRT capacity relative to the catchment population has decreased during the last decade. Given that non-functioning LINACs have contributed to this decline, careful consideration of XRT technology should be given to ensure the balance between the quality of treatment and sustainability of access to treatment.

PRESENTATION

EVIDENCE TO POLICY: CANCER CONTROL PLANNING
14:40–16:30
Wednesday
8 November

Tapela, Neo

BRIDGING THE EVIDENCE-POLICY DIVIDE: EXPERIENCE FROM BOTSWANA LEVERAGING PLANNING FOR NON-COMMUNICABLE DISEASES CENTER OF RESEARCH EXCELLENCE IN SOUTHERN AFRICA

Tapela, Neo¹

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Background There is a significant gap between the knowledge of healthcare innovations and their translation to policy and practice, particularly with regards to the emerging public health challenge of Non-communicable diseases in low- and middle-income countries. Research that is poor quality or not relevant to the current needs of policymakers and stakeholders, and lack of proximity between researchers and policy-makers are some of the contributors to this divide.

Intervention Peo (which in Setswana means ‘seed’) is a consortium research project that seeks to propel NCD prevention and control efforts through regionally-relevant and policy-impacting NCD research and facilitate planning for NCD Center of Research Excellence in Southern Africa. Peo is funded by NIH/NCI and is a partnership comprised of Botswana Ministry of Health and Wellness, Botswana Harvard AIDS Institute Partnership, Harvard University, University of Pennsylvania, University of Botswana, and University of the Witwatersrand.

Aims include: a) improving availability of quality data leveraging electronic health information systems and standardization of data elements, b) building institutional capacity for collaborative research and joint agenda setting, and c) building human capacity to expand pool of clinicians and program officers experienced and proximal to research. Taking into consideration the burden and impact of disease in the Southern African region, and gaps in response to date, areas of initial focus within these aims are breast cancer, hypertension, and road-traffic accident trauma.

Results Progress and experience from Peo project will be presented. Standardized core data elements for the three NCD focus areas have been identified following consultations of stakeholders including clinicians, program managers, researchers, public health officers and M&E staff. These will inform monitoring of disease burden, quality of health services, health outcomes, and potentially be used to pool data between countries. A research enhancement Fellowship program has been established with six Fellows enrolled. The first module of training has been administered and Fellows have been matched to pilot research projects through which they will receive year-long mentorship. Pilot research projects have been initiated, with over 2,000 individuals enrolled for community-based evaluation of cardiovascular risk, in rural populations in Botswana. Shared cores within RCRE have been operationalized, including coordinating core, biostatistics and data strengthening.

Conclusion Translation of evidence to policy and practice requires multi-pronged approaches. Implementation and academic partners have a role supporting these approaches and fostering closer interaction between research, clinical and policy-making communities.

POSTER

WELCOME
RECEPTION
AND POSTER
SESSION ONE
16:30–18:00
Tuesday
7 November

Tapela, Neo

P129 | PATIENT BASELINE CHARACTERISTICS AND CANCERS DIAGNOSED IN THE POTLAKO INITIATIVE IN BOTSWANA: THE OPPORTUNITY FOR LEVERAGING PRIMARY CARE IN CANCER EARLY DETECTION IN LMICS

Tapela, Neo^{1,2,3}; Iver, Hari⁴; Mmalane, Mompoti²; Botebele, Kerapetse²;
Lockman, Shahin^{2,3,4}; Dryden-Peterson, Scott^{2,3,4}

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Partnership; ³Brigham & Women's Hospital; ⁴TH Chan Harvard School of Public
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Background Cancer is more deadly in sub-Saharan Africa compared to high income regions of the world, in part due to late diagnosis. In Botswana, where over 70% of cancers with documented staging are diagnosed at advanced stage, recently finalized national Primary Care Guidelines may serve as an avenue to strengthen early detection of cancer. Here we describe baseline characteristics of patients enrolled in Potlako initiative, a quality improvement intervention in Botswana's Kweneng-East district aiming to enhance early detection of cancer through a package of training primary care clinicians, use of standardized referral algorithm, and strengthened health system navigation support to both patients and clinicians.

Methods We worked with all public health facilities in the district (21 health posts, 14 primary clinics and 2 hospitals) in addition to the national referral hospital where patients with cancer are treated. Male and female adults residing within the district, with suspected cancer were eligible for inclusion. We reviewed demographic and clinical characteristics of patients enrolled from April 2016 to March 2017 using descriptive statistics.

Results 341 patients have been enrolled, comprising 255 (75%) females with median age of 46.1 years [IQR: 32–59]. Of the 277 with documented HIV status, 36.1% were HIV positive. 186 (54.6%) were first enrolled at a primary care clinic while 155 (45.4%) at a district hospital. 279 (81.8%) of all patients had performance status of ECOG 2 or better at enrollment, while 75 (22.0%) had moderate to severe pain (pain score 3 or higher out of 5). For the 320 cases where suspected type of cancer was specified, the leading types were breast (132, 41.3%), cervical (83, 25.9%), esophageal (16, 5%), prostate (13, 4%), lymphoma. To date, 58 (15.8% of suspected) cancers have been diagnosed.

Conclusions We have found good performance status at presentation and a relatively high yield of cancer diagnosis among patients suspected to have cancer, which reflects the potential to save more lives through diagnosing and treating cancers early in an LMIC setting. Improved interventions by primary care clinicians to manage pain are needed. These findings may inform future development of cancer-related training modules and new strategies to scaling up early detection and supportive care in Botswana, leveraging implementation of the Primary Care Guidelines.

PRESENTATION

HIV AND
SITE SPECIFIC
CANCER
ABSTRACTS

08:25–09:25

Friday

10 November

Tawe, Leabaneng

PRELIMINARY RESULTS ON HIGH RISK HUMAN PAPILLOMAVIRUS SUBTYPES IN CERVICAL CANCER SPECIMENS IN HIV+ AND HIV-WOMEN FROM BOTSWANA

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Background Cervical cancer is the fourth most common cancer in women worldwide and HPV is the primary causative agent. Women with HIV are at a higher risk of persistent HPV infection leading to cervical cancer. However, distribution of HPV subtypes is not well known in invasive cervical cancer. Objective: To explore the prevalence and distribution of HPV genotypes of women from Botswana and develop technique for HPV detection using cervical cancer biopsy tissue.

Methods The HPV DNA was prepared from paraffin-embedded samples (10 μ m section) of 52 cervical biopsy specimens. HPV genotyping was performed through Abbott Real-Time PCR and for samples with low DNA concentration nested-PCR (using consensus MY011/09 primer pair followed by GP5/6 primers) applied. The 150pb PCR products were subjected to direct DNA sequencing to determine HPV subtypes. Statistical comparison among frequencies was done with chi square test.

Results In 52 specimens tested, HPV genotypes identified were: HPV-16 (n=27, 51.9%), HPV-18 (n=9, 17.3%), other hr-HPV genotypes (n=16, 30.8%). HPV-16 was more prevalent in HIV-infected (45.5%) than in HIV-uninfected subjects (36.8%) ($X^2 = 4.39$, $df=1$, $p=0.036$); no statistical difference was found for HPV-18 by HIV status. Moreover, the carriers of HPV-16 and/or -18 were more likely to be HIV-infected (72.7%) than HIV-uninfected (36.8%) ($X^2 = 6.45$, $df=1$, $p=0.011$). Majority of our cervical cancer samples had either HPV-16 and/or -18 (86.5%) and the rest had other hr-HPV genotypes (13.5%).

Conclusion We developed a highly sensitive method to provide the spectrum of HPV genotypes in cervical cancer patients from Botswana. Our study demonstrates a high prevalence of HPV-16 and -18 in cervical cancers patients with difference in prevalence according to the HIV status. However, this is a small sample and results will need to be tested in a larger number of cervical cancer specimens.

PRESENTATION

PALLIATIVE & SUPPORTIVE CARE (cont.)

14:40–16:30

Tuesday

7 November

Tayari, Jean Claude

MYTHS AND OBSTACLES FOR NARCOTICS DRUGS IN PALLIATIVE CARE

Tayari, Jean Claude¹; Muhimpundu, Marie Aimee¹; Mukasahaha, Diane¹; Bernard, Francois¹; Eagan, Arielle²

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In 2008, Rwanda's 800g morphine International Narcotics Control Board quota was not enough to serve its population. This national quantity was also restricted due to the limited forms of the narcotic available in-country, as well as patients' geographic locations in rural areas. Answering global and national calls to bring access to quality pain treatment and care for patients suffering from serious illnesses, the Rwandan Ministry of Health took a multitude of steps to develop its Palliative Care policies and programs. In 2012, Rwanda was the one of the first African countries to develop a National Palliative Care Policy, creating a framework for training, increased access to medications, and strategies to develop high-quality, equitable care delivery. Rwanda began the local reconstitution of liquid oral morphine and the International Narcotics Control Board increased the country's allowance, leading to a 4-fold increase from 800 to over 37,000 grams and an rise in the total national use from nearly zero to 10.042 Kg. A steady supply and distribution has since persisted, with over 2,000 bottles shipped countrywide in 2016, with 99% for cancer related-pain.

Yet with increased availability, Rwanda's Ministry of Health has been keenly aware of a second, less-tangible barrier: practitioners' fear of how to safely and appropriately prescribe morphine, a fear often heightened due to myths around morphine use. To ensure safe prescription, the Ministry of Health proactively implemented education for healthcare professionals, creating an "Availability of Opioid Analgesics for Pain Management Training." Delivered by expert educators, the training aims to discuss: (1) aspects related to Palliative Care and Pain Management, (b) beliefs and myths about opioids creating barriers to clinical use, (c) prevention of diversion, and (d) reporting mechanisms to manage the opioid supply chain.

The Ministry of Health has also brought this education and training to pharmacists, who play a vital role because of their clinical expertise in narcotics prescription as well as their ability to catalyze and advocate for the smooth transition of pain medications in national supply chains. When educated properly, pharmacists can become advocates and dispel myths around narcotic drugs in Palliative Care. Rwanda has recognized this and strengthened health professionals and pharmacists' ability to ensure that analgesics are stocked, available, and used correctly and safely in clinical settings. Through this, patients are increasingly able to safely access available Palliative Care medications as clinically indicated, bringing relief to their suffering.

PRESENTATION

PALLIATIVE
CARE &
OTHER

ABSTRACTS

14:40–16:30

Wednesday

8 November

Tayari, Jean Claude

THE AVAILABILITY OF OPIOID ANALGESICS FOR PAIN MANAGEMENT: EMPOWERING PHARMACISTS TO PLAY A VITAL ROLE IN CREATING EQUITABLE SUPPLY CHAINS

Eagan, Arielle²; Tayari, Jean Claude¹

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Introduction Public health and palliative care professionals alike call for a holistic, interdisciplinary view of care delivery, both clinically and through the health care system's design as whole. If engaged in palliative care training, treatment decisions with the clinical team, and advocacy around the procurement of pain medications, pharmacists stand as key stakeholders in ensuring that medicines flow through procurement chains properly and reach the hands of physicians, and thus patients in need. But if left out of trainings, not informed of care decisions, and not empowered to understand and advocate for pain medicines, pharmacists risk creating a cascading barrier for pain management at the clinical level.

Methods Rwanda's Medical Procurement and Production Division recognized the growing systemic barrier created by pharmacists' lack of familiarity with morphine and thus anxiety around its use. In response, Rwanda created trainings to dispel morphine myths and educate pharmacists on pain management, particularly around the use of morphine. Rwanda's Ministry of Health/Rwandan Biomedical Center held an "Availability of Opioid Analgesics for Pain Management Training" for pharmacists around the country. Delivered by Palliative Care experts educators, the training aimed to discuss: (1) aspects related to Palliative Care and Pain Management, (b) beliefs and myths about opioids creating barriers to clinical use, (c) prevention of diversion, (d) reporting mechanisms to manage the opioid supply chain. Before training, trainees were given a Pre-test to evaluate their skills at baseline. After, participants were given a Post-test.

Results Significant findings were discovered between the Pre- and Post-test across all twelve questions and their sub-categories. On comfort of prescribing and dispensing morphine, participants reported an increase of confidence of accurately checking dose, rising from 83.87% to 96.55%, and of checking frequency, increasing from 79.03% to 98.31%. Additional reporting was found on participants views of morphine short-term use over a period of weeks, months, and years as well as use of morphine in combination with other medications. Participants views also shifted in their understanding of morphine doses, frequency of dosing, and pharmacists' beliefs that morphine hastens death.

Conclusion Pharmacists have a vital role in the palliative care conversation, not solely for their clinical expertise in the prescription of pain medications but, beyond this, in their ability to catalyze and advocate for the smooth transition of pain medications in national supply chains. When trained, pharmacists can ensure that analgesics are stocked, available, and used correctly and safely in clinical settings.

POSTER

WELCOME RECEPTION AND POSTER SESSION ONE

16:30–18:00

Tuesday

7 November

Tchounga, Boris Kevin

P199 | CLINICAL, BIOLOGICAL AND MORPHOLOGICAL CHARACTERISTICS OF HEPATOCELLULAR CARCINOMA IN WEST AFRICA

Tchounga, Boris Kevin^{1,2}; Bagny, Yves³; Jaquet, Antoine¹; Attia, Alain⁴;
Adoubi, Innocent⁵; Maïga, Moussa⁶

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Yopougon; ⁵CHU de Treichville; ⁶Hôpital Gabriel Touré

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Objectives to describe epidemiological, clinical and morphological characteristics of hepatocellular carcinoma (HCC) according to their etiological factors in West Africa, a region with endemic HIV, hepatitis B virus (HBV) and hepatitis C virus (HCV).

Method a cross sectional study was conducted in referral hospitals of Abidjan (Cote d'Ivoire), Bamako (Mali) and Lomé (Togo). All patients presenting with a suspicion of liver tumor underwent a standardized clinical examination, abdominal ultrasound and a serum α -fetoprotein measurement. The diagnosis of HCC was based on the combination of one or more space-occupying ultrasound lesions suggestive of an HCC and a serum α -fetoprotein level ≥ 400 ng/ml. HIV, HBV and HCV serology tests were systematically performed. Advanced HCC was defined based on Milan criteria and cirrhosis was estimated using a validated ultrasound scoring scale.

Results A total of 141 patients were diagnosed with HCC, 16% from Côte d'Ivoire, 54% from Mali and 30% from Togo. The typical patient suffering from HCC was a male (78%), aged 47 years old (IQR [39-57]), presenting with hepatomegaly (94.2%) abdominal pain (89.9%), ascites (60.4%) and jaundice (58.7%). The prevalence of hepatitis B surface antigen, hepatitis C antibody and HIV infection were 68.8%; 25.5% and 2.8% respectively. Multifocal lesions were found in 126 (93.3%) patients, and 81 (57.5%) had a background of cirrhosis. The median alpha fetoprotein was 16, 737 ng/ml [1,427-80,000] and the median largest tumor size was 7.6 cm [4.9-11.3]. Milan criteria were not met in 90 (63.8%) patients. HCC patients infected with HBV were younger than those infected with HCV and those co-infected with both viruses (42 vs 64 and 49 years old, $p = 0.0001$). Among patients with HCC, there was more male infected with HBV than those infected with HCV (87.5% vs 51.7%; $p = 0.001$). Cirrhosis was reported in 81.8% of HBV/HCV co-infected patients versus 54.5% and 48.3% of HBV and HCV mono-infected patients, respectively ($p = 0.11$).

Conclusion HCC were diagnosed at an advanced stage with no preexisting liver cirrhosis in almost half of patients. HBV-related HCC were more likely to occur among young male. New strategies are needed to enhance the early diagnosis of HCC in sub-Saharan Africa.

POSTER

POSTER SESSION TWO

16:30–18:00
Thursday
9 November

Tchounga, Boris Kevin

P244 | PREVALENCE OF HIGH RISK HPV AND ASSOCIATED FACTORS AMONG HIV-INFECTED ADOLESCENT GIRLS PRIOR TO HPV IMMUNIZATION IN CÔTE D'IVOIRE WEST AFRICA

Tchounga, Boris Kevin^{1,2}; Horo, Apollinaire³; Jaquet, Antoine¹; Comoe, Jean-Claude Kouassy⁴; Garrigue, Isabelle⁵; Adoubi, Innocent⁴
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Objectives Current cervical cancer prevention strategies recommend HPV vaccination for young girls prior to their sexual debut. HIV is a major co-factor associated with the acquisition and persistence of HPV. However, there is limited data on the prevalence and distribution of HPV infection in the key population of HIV-infected young people. This study aimed to describe the HPV prevalence and correlates among perinatally HIV-infected young females eligible to HPV vaccination.

Methods A cross-sectional study was conducted from April to June 2016, in the four major pediatric HIV clinics of Abidjan, Côte d'Ivoire. Prior to the administration of HPV immunization, all HIV-infected females aged 11–16 years were proposed to participate to the study. A dedicated questionnaire was administered to assess sexual activity and gynecological hygiene practices in all participating girls, followed by a gynecological examination and a systematic vaginal swab collection. HPV genotype identification was performed using the AnyplexTMII HPV28 Detection (Seegene). A logistic regression analysis was used to identify factors associated with the presence of HPV infection.

Results A total of 250 HIV-infected young female were included, with a median age of 13 years [IQR 11–14]. Among them, 237 (94.8%) were on antiretroviral treatment and their median CD4 count and viral load at enrolment were 660 [439–914] cells/mm³ and 2.0 log₁₀ copies/mm³, respectively. Menstrual activity was reported by 111 (44.4%) participants and the frequent practice (1/day) of vaginal toilet was reported by 75 (30%) of them, with a median initiation age of 12 [10–13]. Sexual activity was reported by 12 (4.8%) participants, and ascertained by gynecological examination in 19 (7.8%) of them. The HPV prevalence was 3.6% (95%CI [1.6–6.7]) with 77.8% of oncogenic HPV detected. HPV infection was significantly associated to the practice of vaginal toilet (OR=8.3; 95%CI [1.6–41.4]; p=0.009). No significant association was reported between HPV infection and sexual activity (OR=3.0; 95%CI [0.3–30.3]; p=0.346).

Conclusions Prevalent HPV infections were identified in this population of HIV-infected females eligible to HPV vaccination and were associated to vaginal toilet. Genital hygiene practices and sexual education should be promoted in HIV-infected young females, to prevent the acquisition of oncogenic HPV in this high-risk population.

POSTER

POSTER SESSION TWO

16:30–18:00
Thursday
9 November

Teixeira, Rubina

P394 | CONCOMITANT CHEMO-RADIOTHERAPY ALONE OR WITH INDUCTION CHEMOTHERAPY IN ADVANCED HEAD AND NECK CANCER

Aveiro, Fernando²; Cavaleiro, Augusta¹; Teixeira, Rubina¹; Vieira, Paula²
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Purpose: The purpose is to compare the treatment outcomes of patients with locally advanced head and neck cancer treated with Concomitant Chemoradiotherapy (CRT) alone versus induction chemotherapy (IC) followed by CRT in a retrospective study.

Material/Methods From February 2009 to December 2015 patients with nonmetastatic stage III-IV were evaluated in a multidisciplinary board and assigned to CRT or IC followed by CRT. IC consisted of TPF (cisplatin, docetaxel, and fluorouracil), PF (cisplatin, fluorouracil), TCF (carboplatin, Docetaxel, and fluorouracil) and TP (cisplatin, docetaxel). The chemotherapy administered concurrently to most patients was cisplatin, given days 1, 22 and 43. Adverse events were assessed according to the common toxicity criteria of adverse events (CTCAE v. 4.0) and survivals were estimated using Kaplan-Meier method.

Results The median follow-up was 29 months. A total of 138 patients were treated, 78 (56,5%) with CRT and 60 (43,5%) with IC followed by CRT. At 3 years the overall survival for CRT versus IC followed by CRT was 50, 4% vs 34, 3%, respectively ($p = 0,006$). The Local control at 3 years was also higher for CRT compared to IC followed by CRT, 61% vs 42,4% ($p = 0,02$). The most common grade 4 toxicity during IC was leukopenia and during QRT the hematologic and non-hematologic toxicities were similar in both treatment modalities.

Conclusion Results suggest that CRT was associated with higher overall survival and local control and that IC did not improve the distant control.

POSTER

Telka, Ewa

P316 | MEANING IN LIFE IN CANCER PATIENTS: RELATIONSHIPS WITH ILLNESS PERCEPTION AND GLOBAL MEANING CHANGES

Telka, Ewa¹; Cieslak-Stec, Malgorzata¹; Chemiczewski, Przemyslaw¹
¹Gliwice Cancer Center Institute

POSTER
SESSION

TWO

16:30–18:00

Thursday

9 November

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Purpose Meaning in life seems to play an important role at various stages of coping in cancer patients. It can influence the ways in which cancer patients perceive their illness and potential changes in beliefs and goals. The main aim of the current study is to examine how the two dimensions: presence of and search for meaning are related to illness perception and global meaning changes.

Material and Method The research was conducted among 231 cancer patients (136 women and 95 men), between 27 and 86 years of age ($M = 56.73$; $SD = 12.64$). They were diagnosed with gastrointestinal cancer (stomach, colon, pancreas, liver, large intestine). The following research methods were used: the Meaning in Life Questionnaire, the Appraisal of the Disease Scale, and the Scale of Changes in Beliefs and Goals.

Results Presence of meaning was associated with illness perceptions, changes of beliefs, and changes of goals. In contrast, there were no statistically significant relations between search for meaning and illness perception. The cluster analysis showed that the patients who were in presence style less negatively perceived their illness than those in presence and search style. The first also experienced less disruptions in important beliefs and goals than the latter. In addition, the patients in presence style were characterized by less negative illness perceptions and fewer disruptions in beliefs and goals than their compeers in indifferent style.

Conclusions Having meaning in life is related to a more satisfactory image of the illness and less violations in the belief and goal system. Searching for meaning, even though accompanied by presence of meaning, is rather detrimental to illness perception and changes in beliefs and goals. The awareness of having a purpose and overarching aim in life helps cancer patients to interpret and organize their stressful experiences, and perceive the illness from a less negative perspective.

POSTER

Telka, Ewa

P374 | MEANING IN LIFE AND EUDAIMONIC QUALITY OF LIFE IN TERMINAL PATIENTS WITH GYNAECOLOGIC CANCER

Telka, Ewa¹; Chomiczewski, Przemyslaw¹; Cieslak-Stec, Malgorzata¹
¹Gliwice Cancer Center Institute

POSTER
SESSION

TWO

16:30–18:00

Thursday

9 November

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Introduction Meaning in life and quality of life are some of the most important factors determining the psychophysical functioning of ill people. This is particularly evident in the terminal stage of cancer, in which individuals tend to reevaluate existing goals and values, as well as search for new satisfactory quality of life areas.

Purpose The purpose of this paper was to assess the level of meaning in life and eudaimonic quality of life in terminal cancer patients compared with healthy people. In addition, the relationships between the structure of meaning in life and quality of life in both groups were examined.

Material and Method The research group consisted of 92 people with malignant cancer undergoing treatment in the years 2013–2014 in different parts of Poland-Gliwice Cancer Centre Institute, Opole Cancer Centre, Department of Palliative Care Opole. A comparative group of 94 healthy people was examined. Two methods were used: Personal Meaning Profile and Psychological Well-being Scale.

Results Terminally ill persons obtained higher scores in most dimensions of meaning in life than healthy persons. As regards eudaimonic quality of life the most significant difference was found in purpose of life, in which healthy individuals scored higher than ill individuals. There were stronger associations between meaning in life and quality of life for ill patients than healthy subjects.

Conclusions A higher level of meaning in life among patients can be interpreted in terms of compensation mechanism, according to which terminally ill people examining different aspects of their life pay more attention to search for meaning than their actual presence of meaning. They also reevaluate their life achievements in existential terms.

POSTER

POSTER SESSION TWO

16:30–18:00
Thursday
9 November

Telka, Ewa

P395 | USE OF CYBER KNIFE STEREOTACTIC RADIOSURGERY FOR THE TREATMENT OF LYMPH NODE IN THE ENDOMETRIAL CARCINOMA METASTASIS

Telka, Ewa¹; Cieslak-Stec, Malgorzata¹; Chomiczewski, Przemyslaw¹; Jochymek, Bozena¹

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Aim The aim of the study is to evaluate the effectiveness of the Cyber Knife stereotactic radiosurgery for patients with endometrial carcinoma with single metastasis to the pelvic lymph nodes and para-aortic.

Material and Methods To the analysis was a group of 20 patients with endometrial carcinoma treated at the Cancer Centre, MSC Institute of Oncology in Gliwice, between 2011 and 2014. The age of the patients range from 38 to 76 years old. All patients were after surgery to remove the primary tumor in the pelvis with subsequent adjuvant chemotherapy or radiotherapy to the pelvis. Used total dose 45–50,4Gy by 25–28 fractions to the pelvis with single metastasis to the pelvic lymph nodes and / or para-aortic treated with the Cyber Knife stereotactic radiotherapy 2-3x8Gy to 2-3x10Gy based on PET-CT planning. Assessment of treatment toxicity was based on a scale EORTC / RTOG. Evaluating efficacy of treatment was analyzed using a test level of Ca 125 in the blood and the control PET-CT images and the analysis of survival was assessed by the Kaplan-Meier model.

Results In all patients after using the Cyber Knife stereotactic radiotherapy was found complete remission of metastasis pelvic lymph nodes altered and / or para-aortic assessed in the study, PET-CT and normalization of inhibin levels in blood serum. Treatment toxicity and its severity does not exceed 1 degree by EORTC / RTOG. There was no recurrence in metastasis lymph nodes changed in PET-CT.

Conclusions

1. The treatment at the Cyber Knife stereotactic radiotherapy single lymph node metastases is an effective and safe treatment.
2. The Cyber Knife radiation treatment of single metastasis to the pelvic lymph nodes and para-aortic is an alternative to surgery and chemotherapy, particularly in patients with a history or not expressing consent for the surgery or chemotherapy.

PRESENTATION

CANCER ADVOCACY & OTHER ABSTRACTS

11:00–12:30

Thursday
9 November

Temin, Sarah

AMERICAN SOCIETY OF CLINICAL ONCOLOGY RESOURCE – STRATIFIED GUIDELINES FOR PRIMARY AND SECONDARY PREVENTION AND TREATMENT OF CERVICAL CANCER

Temin, Sarah¹; de Sanjosé, Silvia²; Jeronimo, Jose³; Chuang, Linus T.³

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The American Society for Clinical Oncology (ASCO) developed resource-stratified guidelines, like those for breast cancer, to build upon existing recommendations for HPV vaccination and HPV testing-based screening for primary and secondary cervical cancer prevention, respectively, and to include recommendations for cervical cancer management. The overarching goal was to recommend minimum standards for primary and second cervical cancer prevention and treatment for any given resource (Basic, Limited, Enhanced, and Maximal), recognizing that these guidelines may assist countries in their cervical cancer prevention and control planning.

ASCO convened three separate panels for primary, secondary, and tertiary cervical cancer prevention that conducted a review of existing guidelines, a formal consensus-based process, and a modified ADAPTE process to adapt existing guidelines. For primary prevention, in all resource settings, two doses of HPV vaccine are recommended for girls age 9–14 years, with an interval of ≥ 6 to ≤ 15 months. HIV-infected individuals, and girls living in maximal and enhanced settings that start their vaccination 15 years or older, should receive three doses. Vaccination of boys may be offered in all settings except basic.

For secondary prevention, all adult women should get at least one HPV testing-based screen in their lifetime, with a greater number of screens in a lifetime with increasing resources. Women with HIV infection should be screened twice as often as women without HIV infections. Basic and limited resources should forgo diagnostic verification of disease prior to treatment. For treatment, in basic or limited settings where radiotherapy is often lacking, for women with larger tumors or advanced-stage cervical cancer, neoadjuvant chemotherapy (vs. standard chemoradiation) is recommended before performing radical hysterectomy or its modifications. If brachytherapy is unavailable, extrafascial hysterectomy or its modification for women who have residual tumor 2–3 months after concurrent chemoradiotherapy and additional boost is recommended. For stage IV or recurrent cervical cancer, single-agent chemotherapy (carboplatin or cisplatin) is recommended in basic settings. Palliative radiotherapy for symptom management should be used if resources are available and curative treatment unavailable.

Global implementation of integrated program of treatment, second, and primary prevention will reduce cervical cancer-related deaths immediately, decrease the incidence of invasive cervical cancer within a few years, and reduce the lifetime risk of cervical cancer, lower than from a lifetime of Cervical Cancer screening alone, respectively. Failure to increase access to preventive and curative services will result in an estimated 50 million cervical cancers and 30 million cervical cancer-related deaths by 2070.

POSTER

POSTER SESSION TWO

16:30–18:00

Thursday

9 November

Terwase, Joyce Mcivir

P317 | INFLUENCE OF PSYCHOLOGICAL DISTRESS AND SOCIAL SUPPORT ON THE QUALITY OF LIFE OF CERVICAL CANCER PATIENTS IN FEDERAL MEDICAL CENTER, MAKURDI, NIGERIA

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The study examined the influence of psychological distress and social support on the quality of life experienced by cervical cancer patients in Federal Medical Center, Makurdi. Survey design was adopted in which forty-five cervical cancer patients who attended the hospital within that period where conveniently sampled, and they took part in the study. Data were collected using a structured questionnaire that comprised the Hospitals Anxiety and Depression scale, Social Provision Scale and the European Organization for Research and Treatment in Cancer quality of life scale with thirty items. The multiple regression statistical analysis was used to analyze the data. The result shows that there is a significant relationship of psychological distress and social support on quality of life experienced by cervical cancer patients i.e. $F(2, 47) = 13.07$; $p < .001$ $R = .62$ and $R^2 = .38$. This implies that psychological distress and social support both have 38% contribution on quality of life experienced by cervical cancer patients. Observation of β shows that only psychological distress significantly accounted for quality of life $\beta = .63$, $t = 5.10$, $p < .001$. In terms of independent contribution to variance explanation, the result shows that psychological distress accounted for about 63% of the variance in the Quality of Life of Cervical cancer patients while Social Support accounted for only 6%. Psychological distress and social support significantly influence the quality of life of cervical cancer patients, with psychological distress significantly and independently influencing the poor quality of life. It is therefore recommended that the psychological distress of cervical cancer patients be assessed regularly and addressed by the required professionals involved in care giving, so that the patients can have a better quality of life.

POSTER

POSTER SESSION TWO

16:30–18:00
Thursday
9 November

Teule, Alexandre

P256 | DESCRIPTION OF BRCA1 AND BRCA2 GERMLINE PATHOGENIC MUTATIONS IN A NORTH AFRICAN POPULATION IN THE CATALAN INSTITUTE OF ONCOLOGY (SPAIN)

Brunet, Joan¹; Company, Assumpta²; Feliubadalo, Lidia¹; Lazaro, Conxi¹; Navarro, Matilde¹; Quiles, Francisco¹; Teule, Alexandre¹
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Background Morocco is the second country of origin of foreign population residing in Spain with 678467 people (2016). Breast cancer (BC) is the most frequent cancer among women in Morocco. Most prevalent BC-predisposing genes are BRCA1 and BRCA2, responsible of Hereditary Breast and Ovarian Cancer (HBOC). The role of germline mutations in these genes is largely unexplored in this population.

Material and Methods From 1998 to the present we have identified 485 families with BRCA1 or BRCA2 pathogenic or probably pathogenic germline mutations in the Hereditary Cancer Program of the Catalan Institute of Oncology, composed of 3 hospitals (Hospital Duran i Reynals, L' Hospitalet; Hospital Germans Trias i Pujol, Badalona; Hospital Josep Trueta, Girona). 9 of these families are originary from North Africa. We have reviewed the mutations found in these families.

Results We have identified 5 families with mutations in BRCA1 (4 with the c.5390G>T mutation and 1 family with the c.798_799delTT mutation) and 4 families, apparently without genetic relation, with the mutation c.1310_1313delAAGA in BRCA2. Only the family with de c.798_799delTT mutation is originary from Algeria, the other 8 families are originated from Morocco.

c.5390C>T BRCA1 mutation has been suggested as a founder mutation in the north coast Moroccan population.

c.798_799delTT BRCA1 mutation had been described in other ethnicities in the literature (Caucasian; Central/Eastern/Western European; Latin American, Caribbean) but not in the arab population.

c.1310_1313delAAGA BRCA2 mutation has been described in other ethnicities too (African American; Ashkenazi; Caucasian; Ecuadorian; Latin American, Caribbean; Western European) and could be a recurrent mutation in this population.

Conclusions The identification of recurrent mutations in BRCA1 and BRCA2 could facilitate the genetic testing process for specific populations with clinical criteria of HBOC, with pre-screening for these mutations as a first step in the testing algorithm. This could be a cost-effective approach, making it particularly suitable for countries with limited budgets for genetic testing, such as Morocco.

POSTER

POSTER
SESSION TWO
16:30–18:00
Thursday
9 November

Theoneste, Nsabimana

P375 | EVALUATION OF KNOWLEDGE, ATTITUDES AND PRACTICE OF PAIN MANAGEMENT AMONG MEDICAL DOCTORS AT TWO REFERRAL HOSPITALS IN RWANDA

Theoneste, Nsabimana¹; Krakauer, Eric; Vincent, Dusabejambo; Cyprien, Ntirenganya

¹Ruhengeri Referral Hospital; ²Harvard Medical School; ³Kigali University Teaching Hospital; ⁴Butare University Teaching Hospital

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Background Pain management is a critical component of comprehensive care for patients with serious illness, and prior studies have shown that doctors are key mediators of effective pain management. Though palliative care is growing in Rwanda, there have been no prior studies measuring the knowledge, attitudes and practice of managing pain among doctors. Such information is essential to design relevant and effective programs to address this important component of care for the patients of Rwanda.

Objective The primary aim was to establish baseline data on the knowledge, attitudes and practice of pain management in patients with advanced disease among doctors at two referral hospitals in Rwanda. The secondary aim was to investigate the specific barriers to effective pain management in order to make future recommendations that will target these barriers and help to improve the care of patients with advanced disease throughout Rwanda.

Methods A cross sectional, descriptive study, aimed at evaluating the knowledge, attitudes and practice of pain management among doctors at two referral hospitals was conducted. A modified version of the validated Knowledge Attitude Survey regarding Pain (KASRP) tool and demographic questionnaire was used as the primary outcome measure.

Results A total of 135 doctors were included in the study. The results revealed a widespread knowledge deficit and poor attitude focused in the area of pain assessment and pharmacological management of pain. Even though 88.0% of doctors in our study strongly believed that pain relief is an essential part of care for patients with advanced disease, a large number of respondents incorrectly answered questions regarding the specific management of pain. This included 30.3% of respondents stating that vital signs are the best indicator of the presence of pain, and 53.7% of respondents failing to recognize that aspirin and other non-steroid anti-inflammatory drugs (NSAIDs) are effective treatment for bone pain. Knowledge deficits were also present for the use of morphine, as 50.8% of respondents did not know the time to peak effect of morphine, 72.2% did not know the usual duration of analgesia of IV morphine, and 45.5% did not know how to correctly convert IV morphine to PO morphine.

Conclusion There was a widespread knowledge deficit and poor attitude of doctors regarding pain management at two referral hospitals in Rwanda. Further education and quality improvement initiatives are needed in order to improve the pain management of patients with advanced disease in Rwanda.

PRESENTATION

Thiam Konate, Fatou Sira

EXPANDING THE SERVICES OF THE BALTIMORE CITY CANCER PROGRAM (BCCP) TO AFRICAN IMMIGRANT WOMEN IN BALTIMORE CITY

**NATIONAL
CANCER
CONTROL**

**PLANS & OTHER
ABSTRACTS**

13:30–14:30

Friday

10 November

Thiam Konate, Fatou Sira¹; Ntiri, Shana O.¹; St. George, Diane Marie M.¹
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The Baltimore City Cancer Program (BCCP) is a community initiative of the University of Maryland Marlene and Stewart Greenebaum Comprehensive Cancer Center (UMGCCC). They offer screening, diagnosis and treatment for breast and cervical cancer, at no cost, to Baltimore City residents who are uninsured or underinsured. According to the International Agency for Research on Cancer, breast and cervical cancer are the cancers with the highest incidence and mortality rates among African women. The recent increase in the African immigrant population in the Baltimore City metropolitan area is significant and has subsequently raised new public health concerns.

The objectives of this project were to: increase the awareness of the BCCP within the African immigrant population of Baltimore City and surrounding areas, increase the use of the services offered by the BCCP among African immigrant women, and develop an action plan for BCCP outreach to African immigrant women.

Community stakeholders were identified and sent letters of introduction. To determine the needs and the best course of action to increase breast and cervical cancer screening for this population, we utilized qualitative methods to collect primary data from the target population. We used open ended interview guides based on the Behavioral Model for Vulnerable Populations. The inclusion criteria were: African immigrant women between 18 and 79 years of age residing in the Baltimore City metropolitan area. Interviews were conducted in English or French. The study was given an exempt status by the University of Maryland Institutional Review Board. Non-classic grounded theory was used for the qualitative narrative analysis of these audiotaped in-depth interviews.

54 African immigrant community stakeholders were contacted, 14 partnerships were created and 10 health education activities were implemented. 10 women were recruited, consented and participated in these interviews. The thematic analysis of the interviews suggested that these women had limited knowledge of breast and cervical cancer, limited access to competent care, as well as cultural and religious barriers to breast and cervical cancer screening. A SWOT analysis of the BCCP was conducted to develop an action plan for tailored community outreach and health education. This included information on cultural sensitivity.

The BCCP will need to build on the partnerships created with this target population. This study highlighted the importance of a tailored approach to community outreach in combination with a clear and specific message for health education efforts in order to increase breast and cervical cancer screening in this population.

POSTER

WELCOME RECEPTION AND POSTER SESSION ONE

16:30–18:00

Tuesday

7 November

Tindwa, Chakou H

P065 | INTEGRATION OF BREAST CANCER AWARENESS AND SCREENING INTO SPORTS EVENTS; A COST-EFFECTIVE AWARENESS AND SCREENING METHOD FOR LMICS

Tindwa, Chakou H.¹

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Background Cancers are on dramatic rise in LMICs causing serious morbidity and mortality. In Tanzania alone approximately 44,000 people are diagnosed with cancer and about 20,000 die of it every year. Over 80% of cancers diagnosed at late stage i.e. 3 & 4 making cure impossible which leads to prolonged sufferings and huge medical costs. Causes of these late diagnoses are countless however poor public awareness and lack of routine screening in health facilities are the main resulted from poor public funding. This call for innovative approaches that can simultanously improve awareness and conduct screenings to public.

Methods Tanzania Health Summit integrated breast cancer awareness and screening programs into a Heart Marathon conducted April-26, 2016, which attracted over 2000 runners and messages reached to over 10 mil people countrywide. 5 health care providers and 1 insurer enrolled to conduct public breast cancer awareness and screening at the Marathon start ground. The Summit also enrolled 6 private organizations to support for supplies and financial budget for the event. During the media marketing of the Heart Marathon Breast Cancer education was given which enhanced public awareness significantly and among other leads to crowding at screening day.

Results During the event 982 women were screened, 88 of them had suspicious lesions and 6 diagnosed with early stage Breast Cancer. Over 2000 people got direct breast cancer awareness from experts at the event and over 10 mil people heard about the disease via pre Marathon media campaign.

Conclusions In LMICs where fund is a major constrains to cancer screening and awareness programs, intergration of cancer screening and awareness compagin into prevailing sports event such as Marathon, Music concerts and the like can cost-effectively help on public advocacy and screening in these countries and eventually improve associated mortality and morbidity through early detection as well as improved public lifestyle.

PRESENTATION

Tittenbrun, Zuzanna

ENGAGING WITH PARTNERS AND LOCAL COMMUNITIES FOR NATIONAL CANCER CONTROL PROGRAMMES

**NATIONAL
CANCER
CONTROL
PROGRAMMES**

Tittenbrun, Zuzanna¹

¹UICC

07:15–08:20

Wednesday

8 November

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The 2017 cancer resolution adopted in May urges all governments to “consider an approach in the planning, implementation and evaluation phases of cancer control that involves all key stakeholders representing governmental, nongovernmental and community-based organizations, including those representing patients and their families.” A collaborative, multi-sectoral approach can increase a country’s capacity to prepare an effective national cancer response through “systematic, stepwise and equitable implementation of evidence-based strategies for prevention, early detection, diagnosis, treatment, rehabilitation and palliative care, and to evaluate the impact of implementing such programme” and can result in greater ownership and accountability.

Civil society organisations and local communities play a critically important role in increasing cancer health literacy through public awareness and education activities but also, as 2016 report of UICC members demonstrates, in broader contributions to national action including leading cancer registries, running early detection and screening programmes and supporting treatment and palliative care of cancer patients. Examples of such partnerships will be shared in this session.

In addition civil society has a critical advocacy role to play, especially with national policy makers. The International Cancer Control Partnership (ICCP), which aims to support cancer planners and decision-makers in the development, implementation and evaluation of high impact and comprehensive national cancer control plans, will also be presented as an example of a successful international partnership on cancer control with examples of activities in Africa.

PRESENTATION

HIV
ASSOCIATED
MALIGNANCIES

14:40–16:30

Thursday

9 November

Tomoka, Tamiwe

ACCURATE REAL-TIME DIAGNOSIS OF LYMPHOPROLIFERATIVE DISORDERS IN MALAWI THROUGH CLINICOPATHOLOGIC TELECONFERENCES

Tomoka, Tamiwe¹; Montgomery, Nathan D.²; Kampani, Coxcilly¹; Dhungel, Bal Mukunda³; Gopal, Satish¹; Fedoriw, Yuri²

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Background The incidence of lymphoproliferative disorders (LPD) is increasing in Sub-Saharan Africa (SSA) and resources for diagnosis and treatment are limited. Scarcity of diagnostic pathology services results in long turn-around times or frequent misdiagnosis that may lead to inappropriate treatment. A telepathology service was established at the Kamuzu Central Hospital (KCH) pathology laboratory, Lilongwe Malawi with an aim of improving timely and accurate diagnosis of cancer. We report 2 years' experience of accurate real-time diagnosis of LPD through clinicopathologic teleconferences (CPTC).

Methods All adult LPD were rendered an initial diagnosis by a local pathologist using a limited panel of immunohistochemical (IHC) antibodies followed by a consensus real-time diagnosis after a weekly CPTC involving clinicians and pathologists from Malawi and USA. Additional ancillary studies were performed in USA and a final diagnosis was rendered. A four tier system (level 1, 2, 3 and 4) categorizing levels of agreement was developed to quantify concordance between real-time diagnoses rendered after weekly CPTC and final USA diagnoses, incorporating the clinical implications of any discordance. Level 1 = complete agreement, level 2 = real time and final diagnosis similar but one/the other was less specific, level 3 (minor discordance) = change in WHO classification but no change in treatment in Malawi based on current treatment guidelines, level 4 (major discordance) = Change in WHO classification with change in treatment in Malawi.

Results Between 1 June 2013 and May 31, 2015, a total of 83 adult patients received real-time LPD followed by final diagnoses in the USA. 52% were HIV positive and the commonest diagnosis was diffuse large B cell lymphoma (DLBCL) representing 44%. In 95% (n=79) of the cases there was level 1, 2 and 3 concordance between real-time and final diagnosis meaning that the real time diagnosis led to patient management that was appropriate for the setting. 76% (n = 63) of all cases showed complete (level 1) concordance demonstrating accuracy of local diagnoses using real-time telepathology service. 8% and 10% of cases showed level 2 and 3 respectively. Real-time and final diagnoses were discordant in 5% (n= 4) of the cases leading to a change in patient management.

Conclusion Accurate and timely diagnostic services can be implemented in SSA with relatively modest investments. A small and carefully chosen panel of IHC coupled with clinico-pathologic teleconferences can improve diagnostic services, research and collaborative academic environment for pathologists and clinicians in the SSA.

PRESENTATION

Torres-Luquis, Odalys

LYMPH CIRCULATING TUMOUR CELLS AND THEIR LYMPH MICROENVIRONMENT

**CANCER
BIOLOGY**

11:00–12:30

Thursday

9 November

Torres-Luquis, Odalys¹; Mohammed, Sulma¹

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Breast cancer is the most common cancer in women and it is estimated that around 40,610 women will die of breast cancer this year. However, the leading cause of mortality is metastasis. When the tumor cell migrates from the primary tumor it can disseminated into the blood circulation or lymphatic system. It has been proven that 80% of malignant carcinoma chooses the lymphatic system over the vascular system. There is lack of proven data about the characteristics of tumor cells in the lymphatics and the composition of the microenvironment in the lymph. The purpose of this work is to characterize breast cancer cells in transit to the lymph and understand how the lymphatic microenvironment allows migration of these cells from the primary tumor to the draining sentinel lymph node. This will help us to greatly understand the characteristics of migrating tumor cells via lymphatic system.

POSTER

POSTER SESSION TWO

16:30–18:00
Thursday
9 November

Trauernicht, Christoph

P396 | MEASURED AND CALCULATED DOSE DISTRIBUTIONS IN THE “CLAWS” – A UNIQUE GOLD APPLICATOR LOADED WITH I-125 SEEDS FOR WHOLE-EYE RADIOTHERAPY

Trauernicht, Christoph^{1,2,3}; Hering, Egbert²; du Plessis, Freek⁴; Maree, Gert⁵
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Introduction Ophthalmic tumours are fairly rare and diverse and their diagnosis and treatment usually requires special expertise and equipment, including patient care by a multidisciplinary team. Brachytherapy is the preferred radiation treatment modality for various intraocular tumours and the most commonly used radionuclide is I-125. The “Claws” is a gold applicator that is loaded with I-125 seeds for localized whole-eye radiotherapy.

Method Under general anaesthesia, a pericorneal ring is attached to the four extra-ocular muscles, and four appendages, each loaded with I-125 seeds, are inserted beneath the conjunctiva in-between each pair of muscles and attached anteriorly to the ring. The applicator has an inside diameter of 22 mm. Current dose calculations approximate each I-125 seed as a point source, and a project is underway to improve the dose calculations, and particularly the dose to critical structures in and around the eye, based on Monte Carlo calculations.

Spectra of the OncoSeed IMC6711 seed at different angles were measured in air using a silicon drift detector. Seed measurements in specially designed phantoms were done using thermoluminescent dosimeters and gafchromic film. A CAD model of the “Claws” was designed and used to manufacture a PVC model in a milling machine, which was then micro-CT scanned at 200 μm resolution. The CAD model was also cut into 200 μm slices; these will be edited and used as input for Monte Carlo simulations.

Results The applicator irradiates the eye with minimal dose to the surrounding bony orbit, extraocular optic nerve, eyelids and lacrimal gland. Certain seeds may be omitted to reduce the dose to the unaffected parts of the eye. A typical treatment prescription is 40 Gy given over four days to the centre of the eye. General anaesthesia is also required for the removal of the applicator.

Conclusion The applicators are cost-effective because they can be re-used. The I-125 seeds are regularly used for other eye plaques and implants. The eye does not need fixation during treatment and cosmesis is excellent. The Monte Carlo simulations will take into account the gold shielding of the applicator and the anisotropic dose distribution around the I-125 seeds, which will give a better estimation of the dose to the organs at risk.

POSTER

POSTER SESSION TWO

16:30–18:00
Thursday
9 November

Turyahikayo, Jack

P376 | MULTIDIMENSIONAL OUTCOMES OF PALLIATIVE CARE NEEDS: A PROSPECTIVE STUDY AMONG PATIENTS SUPPORTED BY SPECIALIST PALLIATIVE CARE SERVICES IN MULAGO HOSPITAL

Downing, Julia¹; Gray, Alice¹; Leng, Mhoira^{1,2,3}; Mwazi, Butali¹; Namukwaya, Elizabeth¹; Turyahikayo, Jack¹

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Objective Assessing multidimensional outcomes of Palliative Care (PC) needs is an essential component in ensuring adequate models of service provision and integration. Outcome tools commonly used in palliative care address key domains including physical, psychological, social and spiritual. APCA African Palliative Outcome Scale (POS) is the first palliative care outcome tool that has been developed and validated for use in Africa to measure the burden of multidimensional problems. It has been widely applied for PC research and routine care in many African settings.

Method A prospective study was carried out in Mulago National Referral Hospital (MNRH). All eligible participants newly referred to Makerere Palliative Care Unit (MPCU) were recruited after consent. Socio-demographic data and baseline scores for ECOG and the APCA African POS underpinning physical, psychological, interpersonal and existential domains were captured on the first visit with reassessment on two consecutive visits three days apart. The ward teams and MPCU continued to offer joint care to patients with PC needs.

Results 120 patients were enrolled (117 completed). Spread of diagnosis with commonest cancers hepatocellular (16.7%) cervical (15.8%) and breast (9.2%). ECOG Stage 3 and 4 patients accounted for 41.7% and 42.5% respectively. HIV prevalence was 18.3% with status unknown in 7.6%. There was statistically significant (p value < 0.001) improvement in physical, psychological, interpersonal and existential outcomes of median scores across the three study visits. 29% and 21% poorer outcomes were seen in the existential domain among patients who died before discharge from hospital and higher ECOG respectively. 35% and 22% poorer outcomes were noted on the interpersonal domain among the unemployed and peasants respectively.

Conclusion Measurable improvements in outcome using validated tools were observed. Patients who had more severe symptoms or who had advanced disease showed overall poorer outcomes. This study offers important evidence for this model of PC delivery and emphasizes the role of specialist PC in addressing complex needs. PC has been integrated across communicable and non-communicable disease spectrum using a health systems strengthening approach.

PRESENTATION

Utumatwishima, Jean

HIGH ALLOSTATIC LOAD SCORE IDENTIFIES AFRICAN IMMIGRANTS AT INCREASED RISK FOR CARDIO-METABOLIC DISEASES: AFRICANS IN AMERICA STUDY

Utumatwishima, Jean¹; Sacks, David¹; Sumner, Anne¹

¹National Institute of Health

EPIDEMIOLOGY

ABSTRACTS

14:40–16:30

Wednesday

8 November

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Background/Objective Allostatic load score (ALS) is a measure of the biologic response to stress. The degree to which high ALS is associated with risk for diabetes and cardiovascular disease in African immigrants to the United States is unknown.

Methods ALS was calculated in 252 self-identified healthy African immigrants (age: 40 ± 10 , (mean \pm SD), range 21–64y), BMI 27.8 ± 4.5 , range 18.2–42.4 kg/m², 69% male) using 11 variables from 3 domains: cardiac (SBP, DBP, cholesterol, triglyceride, homocysteine), metabolic (BMI, A1C, glycated albumin, eGFR) and immunological (hsCRP, albumin). High-risk was defined by the highest quartile for each variable, except for albumin and eGFR, which used the lowest quartile. One point was assigned if the variable was in the high-risk range and 0 if not. High ALS was defined by the cut-off for the highest ALS quartile (≥ 4.0). Risk factors for diabetes and cardiovascular disease were defined by newly diagnosed prediabetes or diabetes during an OGTT, low insulin sensitivity calculated by the Matsuda Index and high visceral adipose tissue (VAT) mass measured by computerized tomographic (CT) scan.

Results African immigrants with high ALS had higher fasting glucose (97 ± 19 vs. 89 ± 7 mg/dL, $P < 0.001$) and 2h glucose levels (151 ± 55 vs. 124 ± 31 mg/dL, $P < 0.001$) than African immigrants with low ALS. The prevalence of newly detected diabetes (16% vs. 3%, $P < 0.001$) and prediabetes (41% vs. 24%, $P < 0.001$) was also higher in the high ALS group. In addition, compared to African immigrants with a low ALS, African immigrants with high ALS had less insulin sensitivity (5.6 ± 4.1 vs. 7.2 ± 4.9 , $P = 0.009$) and more VAT (148 ± 74 vs. 85 ± 64 cm³, $P < 0.001$).

Conclusions High ALS detects risk for diabetes and cardiovascular disease in African immigrants. Measuring ALS may prove to be a valid cost-effective way to detect risk for diabetes and cardiovascular disease in low resource areas of Africa.

POSTER

Uwayezu, Marie Goretti

P279 | CORRELATES AND PREDICTORS OF ANXIETY AND DEPRESSION AMONG CANCER PATIENTS IN A SELECTED HOSPITAL IN KIGALI – RWANDA

Uwayezu, Marie Goretti¹; Gishoma, Darius¹; Bhengu, Busisiwe^{1,2}; Mukeshimana, Madeleine¹

¹University of Rwanda; ²University of New York

POSTER

SESSION

TWO

16:30–18:00

Thursday

9 November

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Background Worldwide there is an increase of cancer disease epidemiological burden. Cancer patients face many challenges such as pain and disfigurement due to the disease, treatment and financial problems. Studies have found that those challenges may lead to the emotional disturbance such as anxiety and depression which have negative impact on the treatment outcome and increase mortality and morbidity.

Aim This study aims to explore correlates and predictors of anxiety and depression disorders among cancer patients in King Faisal hospital Kigali –Rwanda.

Specific objectives

1. To determine the prevalence of anxiety and depression among cancer patients attending KFH.
2. To explore the correlation between socio-demographic factors, disease related variables, nurses and family, friends' social support and anxiety & depression disorders among cancer patients attending KFH.
3. To explore the predictors of depression and anxiety among cancer patients attending KFH.

Methods The study design is descriptive cross sectional study. A quantitative approach will be used to explore the prevalence of anxiety and depression. The sample size of 96 patients with cancer will be recruited to the study. Cochran formula was used for sample size determination. Probability simple sampling strategy will be used to select subjects. The study instrument will be Hospital Anxiety and Depression Scale (HADs) will be used to assess anxiety and depression levels in cancer patients. Data will be analyzed by using SPSS 23 version. Descriptive statistics including correlation between anxiety and depression, socio-demographic and cancer related medical factors will be calculated. Validity and reliability of the tool will be tested through a pilot test. University of Rwanda and King Faisal Hospital ethics and research committee approved the study. Ethical principles will be observed throughout the study. Frequencies mean and standards deviation will be used as descriptive statistics. Chi square, t test will be used to examine the level to which numerical and categorical variables are related to depression and anxiety. Multiple logistic regression analysis will be used to test the main risk factors of anxiety and depression among patients with cancer. The results will be presented using statistics, tables and graphs.

Results Data collection underway.

Conclusion The study is ongoing, results will be out by June, 2017.

POSTER

Uwimana, Philomene

P377 | PALLIATIVE AND END-OF-LIFE CARE EDUCATIONAL NEEDS OF MULTIDISCIPLINARY HEALTH PROFESSIONALS IN WANDA

**POSTER
SESSION
TWO**

16:30–18:00

Thursday

9 November

Uwimana, Philomene¹; Male, Marcia¹; Moreland, Patricia¹; Sego, Ruth¹; Ntuzimira, Christian²; Nankundwa, Evelyn¹; Byiringiro, Samuel¹

¹University of Rwanda; ²Rwanda Palliative Care and Hospice Organisation (RPCHO)

Correspondence philouwim@gmail.com

Background In 2011, Rwanda became one of the first African countries to develop a National Palliative Care Policy due to the increase in incidence of incurable diseases. Palliative care education has been provided to multiple disciplines since policy inception. The policy includes a commitment to quality improvement of palliative care training to strengthen service delivery for people with life-limiting illnesses, including children and their families. Educational needs of practicing multidisciplinary health care professionals have not been evaluated. This information is essential to support the sustainability and quality of palliative and end-of-life care in Rwanda.

Aim To assess palliative and end-of-life care educational needs of multidisciplinary health care professionals in Rwanda

Specific objectives To determine the association between demographic variables and palliative and end-of-life educational needs of multidisciplinary healthcare professionals working in selected hospitals in Rwanda; and to compare palliative and end-of-life educational needs of physicians, nurses and social workers working in selected hospitals in Rwanda.

Methods The study design is a cross-sectional descriptive survey research design will be used. Study population will be 422 multidisciplinary healthcare providers (physicians, nurses, social workers) at five hospitals (3 referral and 2 district hospitals) in Rwanda. Data collection instrument is the End-of-Life Professional Caregiver Survey (EPCS). To determine the clarity of the questions, effectiveness of directions, time required to complete the questionnaire and appropriateness to the context of Rwanda, the revised EPCS will be pretested among 3 physicians, 5 nurses and 2 social workers.

Data analysis will focus on descriptive statistics to analyze the frequency distributions, means and standard deviations, and percentages. Descriptive categories include, age, gender, years of work experience, education, employment status, previous palliative care education. Bivariate analysis including 2 group t-test and one-way ANOVA and Chi square will be used to determine a relationship between demographic variables and palliative care educational needs. Ethical principles will be observed throughout the study.

Results Study is currently in progress

Discussion The study will provide important information regarding the perceived palliative and end-of-life educational needs of practicing multidisciplinary health care professionals in Rwanda. Identifying these needs will strengthen the quality of education of health professionals and improve the quality of life of children and adults in palliative and end-of-life care.

PRESENTATION

Uwinkindi, Francois

SCALING UP OF CERVICAL CANCER SCREENING AT PRIMARY HEALTH CARE LEVEL IN RWANDA

**NATIONAL
CANCER
CONTROL**

Uwinkindi, Francois¹; Balinda, Jean Paul¹; Hagenimana, Marc¹; Rwunganira, Samuel¹; Eagan, Arielle²; Muhimpundu, Marie Aimee¹
¹Rwanda Biomedical Center; ²Harvard Medical School

**PLANS & OTHER
ABSTRACTS**

13:30–14:30

Friday

10 November

Correspondence uwifranco@gmail.com

Introduction Rwanda is a high cervical cancer-burden country, with an Age Standardized Rate (ASR) of cervical cancer incidence of 41.8 cases per 100,000 people in 2012. In the same year, cervical cancer mortality lay at 26.2 deaths per 100,000 people. To address this burden, Rwanda initiated the Vision Inspection with Acetic acid (VIA) screening-based strategy in 2013 in line with WHO recommendations for low- and middle-income countries. The target audience of the program was set for women between the ages of 30 and 49 and remains today. Here, we describe the implementation status of the program at the primary health care level; health centers and district hospitals in Rwanda.

Methods Integrating into Rwanda's existing health system, the program was purposefully rooted in health centers, with a pathway designed for women who screen positive to be referred to the district hospital for cryotherapy or LEEP, according to the lesions' size. Nurses, midwives and medical officers from health centers and district hospitals are trained through a 10-day curriculum (5 days for theory and 5 days for practice) before initiating the provision of services to clients in routine care. Monitoring of the program is conducted through both quarterly, on-site mentorship and screening indicators that are integrated into Rwanda's Health Management Information System (HMIS), through which facilities report on monthly basis.

Results Since its initiation in August 2013, Rwanda's cervical cancer screening program has been established in 20 of 42 (48%) district hospitals and 106 of the 252 (42%) health centers in their catchment area. Training has been an integral component as well, with at least two nurses/midwives trained at implementing health centers and a medical officer with two nurses/midwives trained on cervical cancer screening and the treatment of precancerous lesions at district hospital. In addition, district hospitals have been equipped with cryotherapy, LEEP, and colposcopy machines. Over this program's implementation three and a half year course, 17,500 women have been screened for cervical cancer.

Conclusion Using a simple VIA-based strategy, Rwanda has been able to swiftly and effectively increase the number of health facilities implementing cervical cancer screening program. Though additional innovative implementation strategies are still needed to proportionally increase women's screening coverage, these initial steps hold great promise in Rwanda's ability to effectively implement a sustainable cervical cancer screening program.

PRESENTATION

Van Eeden, Ronwyn

CURATIVE MANAGEMENT OF ADULT SOFT TISSUE SARCOMAS IN 2017 AND BEYOND

SARCOMAS IN AFRICA: DIAGNOSIS & TREATMENT

07:15–08:20

Friday

10 November

Van Eeden, Ronwyn¹

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Soft tissue sarcomas (STS) are a histologically diverse group of heterogeneous mesenchymal and neural derived malignancies. There are more than 50 subtypes. Still, they are a rare group of tumours, which account for only 1% of all adult malignancies. Although many occur spontaneously, previous radiation therapy is the strongest risk factor for developing sarcomas as well as some familial conditions. The prognosis is influenced by the size of the initial tumour, histological grade, age of the patient, subtype, tumour location and depth. The 5-year survival rate for STS range from 60-80%. STS is associated with a recurrence rate of 40-60% depending on the above-mentioned factors and initial treatment. Recurrences usually occur within the first 3 years.

STS requires a multidisciplinary team approach for management. Pre-treatment evaluation is of utmost importance. An expert pathologist must review the diagnostic biopsy and correct staging and grading must be done. Treatment depends on the location extent, stage, grade and the histological subtype.

Curative surgery remains the mainstay of treatment. The addition of pre- or postoperative radiation therapy may improve local control for STS of the trunk and extremities, however, with no survival benefit. The role of adjuvant chemo is unclear and controversial, with minimal evidence for doxorubicin-based regimens. There is a role for neo-adjuvant / pre-operative therapy in locally advanced tumours to facilitate with limb sparing surgery and eliminate microscopic metastases. Careful monitoring and imaging is important to assess response in this setting. There are new chemotherapy agents and targeted agents that show activity and many ongoing clinical trials.

Optimal management of curative STS depends on correct diagnosis, work-up and an experienced team of sarcoma experts. Follow up for primary disease is essential for excluding recurrence. Careful consideration of the correct modalities and sequencing of treatment in recurrent disease with a special emphasis on oligometastatic disease that is still curative is imperative. Each patient is unique and the risks, benefits and evidence behind treatment decisions must be thoroughly explored.

In Africa, late presentation of STS is not uncommon and is associated with a poorer outcome.

PRESENTATION

OESOPHAGEAL CANCER RESEARCH

11:00–12:30

Friday

10 November

Van Loon, Katherine

MOLECULAR DETERMINANTS OF OESOPHAGEAL CANCER IN TANZANIA

Van Loon, Katherine¹; Mmbaga, Elia²; Mushi, Beatrice²; Greer, John¹; Benz, Steve³; Collisson, Eric¹

¹UCSF; ²Muhimbili University of Health and Allied Sciences; ³Nantworks

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Esophageal cancer (EC) is the 8th most common cancer world-wide and is characterized by wide geographic variations in incidence. The eastern corridor of Africa has been identified as a region impacted by a disproportionately high incidence of this disease. The geographical and population variability in the incidence of EC indicate the potential diversity in the etiologic factors for this disease. We aimed to utilize tumor specimens obtained from Tanzanian patients with EC to evaluate possible genetic, molecular, and infectious determinants. Patients with suspected EC were identified at Muhimbili National Hospital in Dar es Salaam, Tanzania and consented prior to definitive diagnostic endoscopic evaluation. Questionnaire data and sputum specimens were also obtained. For patients with endoscopic findings consistent with EC, tumor biopsies were obtained and stored using two different fixation and preservation media: PAXgene Tissue Container and RNAlater. All specimens were shipped at ambient temperature from Dar es Salaam to the University of California, San Francisco. DNA and RNA extraction and genome and transcriptome sequencing were performed. Results of whole-genome sequencing and a survey of the transcriptome for pathogen-encoded RNA and viral motifs will be presented for 62 cases with a confirmed histologic diagnosis of squamous cell carcinoma. All 62 cases were of African ethnicity, of which 69% (n=43) were male and 56% (n=35) were current or former smokers. Median age at diagnosis was 61 (range 26–86), with 13% of cases (n=8) aged ≤40 years. (Funding source: U.S. National Institutes of Health, National Cancer Institute Cancer Center Administrative Supplement to Promote Cancer Prevention and Control Research in Low and Middle Income Countries, A119617, [CA-0082629]).

PRESENTATION

RADIATION & OTHER ABSTRACTS

08:25–09:25

Friday

10 November

Vulpe, Horia

VIRTUAL LONGITUDINAL MENTORSHIP – A CLINICAL AND EDUCATION RESEARCH CAPACITY BUILDING PROJECT FOR RADIATION ONCOLOGY TRAINEES IN GHANA

Vulpe, Horia¹; Lam, Andrew⁴; Chu, Ryan³; Kassam, Zahra¹; Ringash, Jolie¹; Panzarella, Tony¹; Cummings, Bernard¹; Craig, Tim¹; Breen, Stephen¹; Vanderpuye, Verna²

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Introduction Teaching clinical research methods is important for continuous improvement but can be challenging for smaller programs, especially in developing countries.

Purpose The objective of our project is to evaluate the feasibility and efficacy of a virtual longitudinal clinical research mentorship program in radiation oncology.

Methods After a focus group in Accra, Ghana, five Ghanaian Radiation Oncology trainees (National Centre for Radiotherapy and Nuclear Medicine, Korle Bu Teaching Hospital) were invited to submit research concepts. Two of the 5 trainees were assigned a mentor in methodology (Toronto faculty) and a clinical supervisor (Ghana faculty). Toronto mentors provided research design expertise while Ghanaian supervisors provided direction in adapting the solutions locally. An introductory methods course (12 sessions) led by Toronto faculty used a problem-based approach to facilitate knowledge transfer online. The primary outcome was the number of abstracts accepted for presentation at international conferences. Intermediate outcomes included online feedback questionnaires and a critical appraisal skill assessment (Berlin Questionnaire).

Results Five trainees and 13 faculty members (including 2 Ghanaians) participated in this project in 2015. The virtual introductory course was successfully delivered. Participants strongly agreed that they would recommend the sessions to another resident (75%), that the objectives were clear (71%), the topics were useful for their training (73%), and the discussions were helpful to understand the topics (70%). Audio visual connection functionality scored the lowest (32% strongly agreed). Qualitative feedback from Toronto faculty highlighted technology, teamwork and participant engagement as areas that worked well. They reported dealing with complex issues and “unconventional research method topics” (e.g. quality assurance) as areas requiring additional preparation. Four trainees completed the Berlin Questionnaire before and after the course. Results in 3/4 trainees improved by an average of 20% (absolute) and remained unchanged for 1/4. Two trainees have seen their research abstracts accepted at international conferences including the Canadian Association of Radiation Oncology Annual Scientific Meeting and the International Gynecologic Cancer Society meeting. Manuscript preparation is ongoing.

Discussion and Conclusion A virtual longitudinal mentorship program between Ghana and Toronto improved research and education capacity through collaboration between two geographically remote academic institutions. The program plans to expand to other developing countries.

PRESENTATION

Wallace, Melissa

BEHAVIOURAL SCIENCE AND CANCER CONTROL

Wallace, Melissa¹

¹Cancer Association of South Africa

**IMPROVING
HEALTH
SYSTEMS:
PUBLIC HEALTH
& ECONOMICS**

11:00–12:30

Tuesday

7 November

Correspondence mwallace@cansa.org.za

A significant proportion of cancers are caused by modifiable behavioural risk factors including tobacco use, diet, level of physical activity, alcohol use and sun behaviour. In addition, acceptability and uptake of vaccination and cancer screening too are driven by socio-behavioural factors. Furthermore, structural and economic interventions (such as a levy/ tax on tobacco or alcohol) ultimately rely on behavior for their success. Looking beyond risk reduction, behaviour (such as adherence) also plays an essential role in the success of treatment and overall patient outcomes; and consideration of socio-behavioural factors enhances the overall care and support cancer patients receive. It is not an overstatement to say that the effectiveness of a significant number of cancer control interventions rely on attention to socio-behavioural matters. Yet despite this, behavioural science may be overlooked as a supplementary and dispensable component of a comprehensive cancer control plan, particularly when resources are limited. Given the anticipated exponential increase in cancer incidence in low-income countries, there is an urgent need to develop a better understanding of the social, psychological, behavioural and cultural factors influencing cancer control issues, and to address these when planning and implementing cancer control initiatives.

This presentation will therefore highlight the unique, pervasive and indispensable contribution that socio-behavioural science can and should be making to cancer control in low-income countries. This will be illustrated through examples of biomedical and other interventions that have proved successful as well as more cost effective, as a result of their inclusion of and attendance to socio-behavioural matters. In addition, the presentation will address the kinds of research questions that are better answered by socio-behavioural research. Ultimately, the need for a better integrated multidisciplinary approach to cancer control will be argued, and a framework for such an approach presented.

POSTER

Wata, David

P378 | THE JOURNEY OF ACCESS TO PAIN RELIEF: A KENYAN CASE STUDY

**POSTER
SESSION**

TWO

16:30–18:00

Thursday

9 November

Wata, David¹; Aywak, Dorothy¹; Muinga, Esther²

¹Kenyatta National Hospital; ²Kenya Hospice and Palliative Care Association

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Opioids play a major role in provision of pain relief in palliative care as well as other settings. Morphine is the most widely used opioid due to the relatively low cost, wide availability and existence of several formulations, compared to other opioids monitored by the international narcotics control board (INCB).

Morphine is usually supplied as a powder for reconstitution, slow release tablets, immediate release tablets and injection.

The powder is the most widely available formulation of morphine. This, however, presents various challenges: shortage of expertise to reconstitute morphine in all health facilities, use of different formulas for reconstitution thus differing stabilities, use of non-validated formulas to reconstitute a medicine that is a high alert medicine, lack of facilities to carry out the reconstitution and differing concentrations of the final products from different facilities which can cause confusion to patients if they access the medicine from different facilities

The access to morphine project was developed in Kenya to provide a solution to this challenge. The project was developed by a partnership between the Kenyatta National Hospital (KNH), the Ministry of Health, the Kenya Hospice and Palliative Care Association and the American Cancer Society (ACS). The team benchmarked from a similar project running in Uganda and included technical input from KNH to develop a production manual that contains the formula for the morphine production, in process quality control, standardized concentration for pediatric and adult formulation, bottling, labelling and packaging. The facility for production was set up in KNH. The investment required for the set up was provided by KNH and ACS.

The first production was done in November 2016 and delivered to 11 health care facilities around the country providing palliative care services in the country. We have developed morphine solution both for adults and pediatric populations. The process is validated. Quality control checks are done to ensure that the morphine meets pharmacopeal standards. Accelerated stability studies have also been done to determine the shelf life of the products.

Patients in Kenya can access morphine oral solution through the various healthcare facilities throughout the country. Morphine produced and distributed throughout the country is of standardized, consistent, and high quality. Patients requiring pain relief for palliative care and other clinical settings can access the same quality and same concentration of morphine from any facility.

POSTER

POSTER SESSION

TWO

16:30–18:00

Thursday

9 November

Wekesa, Christine

**P245 | CHARACTERISTICS OF BREAST CANCER PATIENTS ATTENDING
MOI TEACHING AND REFERRAL HOSPITAL IN WESTERN KENYA**

Wekesa, Christine

Correspondence christiacharles@yahoo.com

Background Breast cancer is the most common cancer in women worldwide, estimated to have caused over 508,000 deaths in 2011. Although is thought to be a disease of the developed 50% of breast cancer cases and 58% of deaths occur in LMIC's. Late diagnosis of breast cancer is common amounting to 70–80% limiting the management. The status of many Kenyan women influences their health seeking behaviors in regard to breast cancer.

Objectives Determine the factors that are associated with late diagnosis of breast cancer in western Kenya, demographic characteristics, factors influencing participation in breast cancer screening, and level of breast cancer awareness.

Methods Cross-sectional research design was employed. 211 respondents composed of 120 breast cancer diagnosed women and 91 undiagnosed were interviewed. Data analyzed by descriptive and inferential statistics and presented on tables, Bar graphs and Pie charts.

Results Breast cancer affected both young and old. Majority 25.7% of the respondents who were undiagnosed were prompted to undergo screening due to curiosity while 8.9% of the Breast Cancer Patients were prompted by presence of symptoms, felt discomfort and unusual changes. 30.7% of the respondents had stayed for a considerable length of time (1 year) with the cancer before they went to the hospital with majority (31.7%) of the Breast Cancer Patients being diagnosed in stage 3. The main reason for late presentation was sighted as lack of knowledge on the symptoms of breast cancer (65.3%). The Women Screened for Breast Cancer (68.9%) and Breast Cancer Patients (81.2%) were both aware of breast cancer. Their sources of information being Barazas, Local radio and National television.

Conclusion Breast cancer is a disease that affects all ages; screening to determine the safeguard against breast cancer was only adhered to by few women with majority diagnosed in late stage. The study also concluded that there was lack of awareness of the disease, reason why even after the symptoms seen many of the women still did not immediately visit the health facility. Despite the awareness, knowledge was shallow and did not serve to help the women seek immediate medical care or screening.

Recommendations Information on breast cancer should be saturated to all parts of the nation to ensure that every individual is aware and is able to identify the symptoms of breast cancer as soon as possible and campaigns should be carried out to promote breast cancer screening hinting on the advantages of screening, early detection and treatment.

PRESENTATION

OESOPHAGEAL CANCER RESEARCH

11:00–12:30

Friday

10 November

White, Russell

SURGICAL OPTIONS AND SURVIVAL ANALYSIS

White, Russell¹

¹Tenwek Hospital / Brown University

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Treatment of esophageal cancer patients with a curative intent generally involves some form of surgical resection. Recent research regarding outcomes after esophagectomy will be reviewed. Related topics which will be reviewed include the current state of neoadjuvant therapy, minimally invasive esophagectomy, and technical variations in surgical techniques. Data will also be presented regarding the use of endoluminal stenting for nutritional support prior to esophagectomy. Approximately 400 cases of esophageal cancer per year are seen at Tenwek Hospital in Kenya. A brief review of management strategies which is appropriate for low and middle income countries (LMIC's) will be reviewed.

POSTER

POSTER SESSION

TWO

16:30–18:00

Thursday

9 November

Wirtz, Holger

P455 | SOLAR-POWERED RADIOTHERAPY 4.0 – OPPORTUNITY FOR RADIO-ONCOLOGY IN AFRICA

Wirtz, Holger¹

¹Lake Constance Radiation Oncology Center, Singen-Friedrichshafen

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Introduction 50–60% of cancer patients require radiotherapy as important (and cost effective) part of their treatment. The majority of people in Africa suffering from cancer have no or limited access to radiotherapy technology. Modern radiotherapy machines need uninterrupted electrical power.

Project-Ghana, Implementation in Singen (Germany) The Lake Constance Radiation Oncology Center, Singen run 2 Linacs of ELEKTA and 1 BigBore-CT-Scanner of PHILIPS on solar-power since 2011. It can be shown, that the annual cost can be cut significantly; in summer the site is completely independent from public-grid. A initiated reference project for Ghana is discussed at the 1st European Solar-Powered Radiotherapy 4.0 Conference in July 2017 in Singen (Germany). The geographical position and the duration of sunshine at this place let expect high efficiency in harvesting solarpower and getting high-power out of specific accu-systems.

Perspective on Education, Training, Risk-Controlling It makes sense to expand treatment-capacity of existing sites. Increasing staff-number and staff-experiences is obligatory. Electrical power stability and autarkic, technical solutions must be included in purchasing-plans of radiotherapy-machines. Communication (Internet, Mobile, video-conferencing) need power as well. Help for low-experienced staff-group can be obtained from using automatic-planning of patient's therapy, checking and controlling with digital-assistance systems (online-dosimetry, portal-dosimetry, process-control and risk-control). All of those systems can be audited and supported via internet) as to be shown in our departments (Project: RADIOTHERAPY 4.0). Cyber-education on site by experienced remote-trainers can be offered. This technology reduces dramatically the risk of mistreatment (for several reasons) in using high-advanced, high-doserate Radiotherapy in Africa.

POSTER

WELCOME RECEPTION AND POSTER SESSION ONE

16:30–18:00

Tuesday

7 November

Wishahi, Mohamed

P096 | RESULTS OF TREATMENT WITH GEMCITABINE, PACLITAXEL, DOXORUBICIN AND RADIOTHERAPY FOR URINARY BLADDER PRESERVATION FOR PATIENTS WITH NON-MUSCLE INVASIVE HIGH GRADE RECURRENT T1 UROTHELIAL CANCER OF THE BLADDER: SURVIVAL AND QUALITY OF LIFE

Wishahi, Mohamed¹; Elkhoully, Amr¹; Hosein, Mohamed¹; Wishahi, Mariam²
¹Theodor Billharz Research Institute; ²Katharinen Krankenhaus

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Objective PT1 urothelial carcinoma (UC) of the bladder is a potentially aggressive cancer. Non-muscle invasive carcinoma of the bladder (NMIBC) of high grade T1 tumor that recurred after Intravesical BCG, had a high incidence of tumor progression. To estimate the response rate of gemcitabine, paclitaxel, doxorubicin combined with radiotherapy aiming at bladder preservation in patients with recurrent high grade T1 tumor. We conducted a prospective study to evaluate the multimodality treatment. Overall survival, disease free survival, and quality of life were estimated.

Materials and Methods In a retrospective study of the hospital cancer data base in two hospital in three governorates of Cairo, Giza, and Kena, we identified 87 patients with T1 NMIBC, between 2008 and 2016, the patients had high grade T1 urothelial carcinoma (UC) that had recurred after complete course of intravesical BCG, patients were given the option of standard treatment with radical cystectomy (RC), the patients asked for bladder preservation. Multimodality treatment arm was compared to an arm of 60 patients of matched age and clinicopathological status that they had RC. Follow up was up to 3-5 years, Overall survival (OS) and disease free survival (DFS) were calculated using Kaplan-Meier and Cox regression tests were used to evaluate both groups. Inclusion criteria were recurrent, high grade T1 NMIBC, no prior chemotherapy, glomerular filtration rate <60 mL/min, and no dialysis. Gemcitabine (900 mg/m²), paclitaxel (135 mg/m²), and doxorubicin (40 mg/m²) were administered on day 1 of each 14-day cycle. Patient received 20 sessions of fractionated radiotherapy.

Results 87 patients were enrolled in the chemo radiotherapy group with bladder preservation, which was compared with 60 patients in the standard arm who had RC. Median age was 54 years (range 51–87). Complete responses were 100%. Notable grade 3 and 4 nonhematologic toxicities were fatigue and mucositis (14%). There were Neutropenic fever (5%), and no treatment-related deaths. Median overall survival was 43 months. The results in the first arm were comparable with the second arm of standard RC.

Conclusions Patients with high grade T1 NMIBC who had recurrence after treated with BCG had selected bladder preservation and received chemoradiotherapy with gemcitabine, paclitaxel, doxorubicin and fractionated radiotherapy, Overall survival was comparable to an arm of standard treatment with RC, quality of life was better in the patient who had bladder preservation. We advocate bladder preservation in patients who do not accept the option of RC and urinary diversion.

POSTER

WELCOME
RECEPTION
AND POSTER
SESSION ONE
16:30–18:00
Tuesday
7 November

Wishahi, Mohamed

P200 | URINARY BLADDER SQUAMOUS CELL CARCINOMA AND SQUAMOUR DIFFERENTIATION HISTOLOGIC VARIANT OF UROTHELIAL CARCINOMA RESULTED FROM SCHISTOSOMIASIS: CHALLENGES AND ONCOLOGICAL OUTCOME FOLLOWING SURGICAL TREATMENT

Wishahi, Mohamed¹

¹Theodor Bilharz Research Institute

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Objectives Urinary bladder carcinoma is the first male malignancy in Africa due to prevalence of urinary schistosomiasis, Squamous cell carcinoma(SCC) represent 47% of cases, while urothelial carcinoma(UC) of transitional cell type represent 53%, the histological variant of UC in the form of squamous differentiation was found to be of an aggressive behavior of regional recurrence and metastases. To investigate the impact of variant histologic patterns of carcinoma of the bladder on oncological outcomes of patients treated with radical cystectomy (RC). Three histologic patterns were evaluated: urothelial carcinoma (UC), squamous cell carcinoma (SCC), and urothelial carcinoma with squamous differentiation (UC&SqD).

Materials and Methods Retrospective archival study included 258 patients treated with RC for muscle-invasive carcinoma. Data were reviewed in the demographic as well as clinic-pathologic parameters, including histopathological variant, tumor stage, and nodal status. Overall survival and cancer-specific survival were evaluated. Histologic pattern of these 258 patients were: 90 patients with UC as a reference for disease progression, 112 patients with SCC, and 56 patients with UC&SqD. Archival data were retrieved from 1995 to 2012.

Results Median follow-up was 44 months; there were statistically significant difference between survivals in the three groups. Overall survival decreased in UC&SqD. Patients with SCC had a higher risk of local recurrence, where patients with pure UC had higher risk of metastases.

Conclusion Squamous differentiation of UC was associated with high tumor stage and high tumor grade. Patients with this histologic variant had less favorable prognosis compared to pure UC and pure SCC. Diagnosis of divert histological patterns in RC is valuable to plan treatment strategy.

PRESENTATION

RADIATION AND CHEMOTHERAPY

14:40–16:30

Thursday

9 November

Wong, Rebecca

THE USE OF CONFORMAL RT IN HEPATOCELLULAR CARCINOMA

Wong, Rebecca¹

¹Institute of Health Policy, Management and Evaluation

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Hepatocellular carcinoma is the second leading cause of cancer related death in the world with the highest disease burden in HBV endemic regions such as sub-saharan Africa and eastern Asia. While surgical resection and liver transplant provides the highest cure rates, it is suitable only for the minority of patients. The ability to deliver high doses to the tumor, while sparing normal tissues has translated into an expanding indication for radiotherapy in this disease although high level evidence are needed to clarify its role in the multi disciplinary setting. The evolution of radiation technology from 2D to 3D conformal paved the way to more sophisticated techniques such as IMRT, SBRT, particle therapy and combined modality therapies by demonstrating increasing local control and safety outcomes. Conformal radiotherapy techniques permit treatment to be delivered safely while achieve meaningful disease control and can be considered where more sophisticated technologies are limited in availability, provided normal tissues constraints are met. For HCC that are biologically suitable to surgical resection for cure (Child-Pugh A, <3cm and or <3 nodules) but are unsuitable for resection, transplant or RFA, definitive RT (e.g. 66Gy in 33 fr) can be considered and can achieve local control rates in the order of 76% and 1 year survival in the order of 40-60%. For patients with more advanced disease, conformal RT has also been shown to improve outcome when combined with TACE in patients with portal vein or IVC thrombus. In patients with pain from diffuse liver disease, where no systemic or liver directed therapies are available, palliative radiotherapy (e.g. 8Gy in 1 fr) has shown efficacy as a palliative approach and is being compared against best supportive care in an ongoing randomized trial.

PRESENTATION

Wu, Emily

THE IMPACT OF HUMAN IMMUNODEFICIENCY VIRUS INFECTION ON CERVICAL CANCER SURVIVAL IN UGANDA

**HIV
ASSOCIATED
MALIGNANCIES**

14:40–16:30

Thursday

9 November

Wu, Emily¹; Mugisha, Noleb²; Krantz, Elizabeth³; Nakisige, Carolyn²; Urban, Renata¹; Schwartz, Stephen³; Casper, Corey³

¹University of Washington Medical Center; ²Uganda Cancer Institute;

³Fred Hutchinson Cancer Research Center

Correspondence ewu10@uw.edu

Background/Objectives To understand the impact of HIV infection on overall survival (OS) in Ugandan women diagnosed with cervical cancer.

Disease/Procedure/Practice Issue A prospective cohort study of women diagnosed with cervical cancer between 2013 and 2015 at the Uganda Cancer Institute. Upon enrollment, medical history, blood draw, and tumor tissue were obtained for each participant. The association of HIV infection, age, FIGO stage, tumor histology, tumor grade, baseline CD4 count and baseline hemoglobin (Hb) with OS was evaluated using univariable and multivariable Cox proportional hazards models.

Outcomes 53 HIV-infected and 96 HIV-uninfected participants were enrolled. The majority of both groups had squamous cell and moderate to poorly differentiated tumors. Median age at diagnosis was 44 for HIV-infected and 54 for HIV-uninfected participants. Among HIV-infected participants 68% had early stage (I–II) compared to 61% of HIV-uninfected participants. 77% of HIV-infected participants were receiving antiretroviral therapy. Median baseline CD4 count was 373 cells/mm³ and median Hb was 10.5 g/dL for participants with HIV. Median CD4 count was 926 cells/mm³ and median Hb was 12.0 g/dL for participants without HIV.

There were 35 deaths among HIV-infected and 45 among HIV-uninfected participants. HIV-infected participants tended to have shorter unadjusted median OS compared to HIV-uninfected participants (14.7 vs 24.3 months, hazard ratio (HR) 1.67, 95% CI 0.93–3.00, $p=0.09$). On univariable analysis, younger age and later stage, lower CD4 count, and lower Hb were associated with shorter OS. After adjusting for age, stage, histology, grade, baseline CD4 count, baseline Hb, and receipt of any treatment, HIV infection was not significantly associated with OS (HR 1.07, 95% CI 0.46–2.51, $p=0.87$). Only early stage ($p=0.002$) and younger age ($p=0.042$) remained significantly associated with OS in multivariable analysis.

Conclusions Despite similar stage, histology, and grade distribution between HIV-infected and uninfected cervical cancer patients in this prospective cohort study, there is a marked difference in unadjusted OS, potentially attributable in part to differences in baseline CD4 count and Hb. Only stage and age were associated with OS in a multivariable model, but small cohort size may have reduced power to detect other associations. These findings motivate larger and more detailed studies of the natural history of cervical cancer in sub-Saharan Africa.

POSTER

POSTER SESSION TWO

16:30–18:00

Thursday

9 November

Wuraola, Funmilola

P318 | BREAST CANCER IN THE ELDERLY

Aderounmu, Adewale¹; Olasheinde, Olalekan¹; Olorunfemi, Olayiwola¹;
Wuraola, Funmilola¹

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Breast cancer incidence is known to be rising in Nigeria as well as most low and middle income countries. Contrary to findings from Western countries, the majority of affected women are pre-menopausal, with the peak age in the forties. Much of the information available on breast cancer in terms of pattern of presentation and mortality in our setting therefore largely depicts events around this age group, they constituting the majority. Very little is known about breast cancer in the elderly as a distinct group in terms of pattern of presentation and treatment outcome in this category of patients.

Method Elderly women (65 years and above) managed for breast cancer in a Nigerian Teaching Hospital over a 5 year period were reviewed. Details of their socio-demographic characteristics, pattern of presentation, treatment and outcome were obtained and analyzed.

Result Of the 420 patients managed during the study period, there were 62 elderly patients accounting for 14.8% of total. As expected, they were all post-menopausal, with their ages ranging from 65–92 years, with a mean of 70.7 years. Comorbidities were present in 22 patients (19.7%), of which systemic hypertension was the commonest.

Right sided tumours were predominant (53.2%), with two bilateral cases (3.2%). The mean tumour size at presentation was 10cm, with the majority presenting with stage 3 disease. Infiltrating ductal carcinoma was the predominant histological type 83.5%. Mastectomy was done in 34 Patients (53.4%) while 48 (77.4%) had chemotherapy either as adjuvant or neo-adjuvant. Only 35 patients (56%) had complete two year follow up. Amongst these, 7 patients had local or distant recurrences (20%), while mortality rate was 28.6%.

Conclusion Pattern of breast cancer presentation among elderly women mirrors what has been generally observed, in terms of delayed presentation and default from treatment. Data to adequately evaluate survival in this group of patients is required.

POSTER

WELCOME RECEPTION AND POSTER SESSION ONE

16:30–18:00

Tuesday
7 November

Wysong, Megan

P423 | STRENGTHENING CERVICAL CANCER PATIENT-, FACILITY-, AND PROGRAM-LEVEL DATA AND DECISIONS IN LIMITED RESOURCE SETTINGS

Wysong, Megan¹; Varallo, John¹; Drummond, Jenn²; Maza, Mauricio³;
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Background Appropriate collection and use of health information is critical for planning, scaling, and improving cervical cancer programs. Limited coordination, training, and standardization of data practices result in low quality data that are largely unsuitable for use. Failure to recognize the data's usefulness contributes to lack of investment in the collection of quality data. Lack of globally endorsed data collection, collation, and use tools has hampered scale-up and roll-out of cervical cancer programs at the national and global levels. In response to this need, the Bill & Melinda Gates Foundation provided funding to the CDC Foundation for the development of a toolkit that included sections focused on Patient and Program Monitoring (PPM) and Facility-based Surveys (FBS). This toolkit was designed to improve and accelerate the availability of high-quality data in low resource settings.

Methods From 2015–2016 Jhpiego and Basic Health International worked to develop the PPM and FBS sections of the Improving Data for Decision-making in Cervical Cancer Programs toolkit, which included the development of global standards, tools, and guiding information for data gathering to improve the quality, coverage, and scale of cervical cancer prevention and treatment programs. Development methods included desk review of existing tools, review of global normative guidance on cervical cancer services, participatory field work with country-level implementers, and consultation with global subject matter experts.

Results Final PPM and FBS sections are currently in pre-production. The final PPM section includes tools and guiding information intended to support the improvement of patient-level data collection, analysis, and facility- and national-level use of data, to help Ministries of Health and their partners to better plan, target, tailor, and scale interventions. The final FBS section provides resources for measuring cervical cancer service availability, readiness, and service quality and monitoring key indicators; content which is particularly relevant to countries ready to scale-up screening and treatment services sub-nationally or nationally. Feedback received during development and early experiences with adaptation of the draft standardized sections to country contexts were key to finalizing this toolkit, and will be shared as part of this presentation.

Conclusion The Improving Data for Decision Making cervical cancer toolkit will soon be made freely available to Ministries of Health. The authors' experiences and lessons learned during toolkit development, and early experiences with contextual adaptation of the draft PPM and FBS sections, provide valuable information for programmes and stakeholders to consider as they evaluate potential use of the toolkit.

PRESENTATION

RADIATION & OTHER ABSTRACTS

08:25–09:25

Friday

10 November

Yamoah, Kosj

TREATMENT PATTERNS AND OUTCOMES FOR LOW-INTERMEDIATE RISK PROSTATE CANCER PATIENTS TREATED WITH DEFINITIVE RADIOTHERAPY – A CROSS-CONTINENTAL COMPARATIVE STUDY BETWEEN GHANA AND THE UNITED STATES

Yamoah, Kosj¹; Asamoah, Francis³; Venkat, Puja¹; Awasthi, Shivanshu¹; Naghavi, Arash¹; Abrahams, Afua²; Mensah, James²; Vanderpuye, Verna³; Yarney, Joel³

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Purpose There is limited data on disease control for prostate cancer (PCa) in Native African men (NAM) treated with definitive radiotherapy. In this study we evaluate treatment patterns and outcomes among PCa patients in Ghana compared with a similar cohort in the United States (US)

Methods This retrospective study consisted of 834 PCa patients (69 NAM from Ghana, 765 US) diagnosed with Gleason score (GS) ≤ 7 (3+4) disease, prostate specific antigen (PSA) ≤ 20 ng/ml and received definitive radiotherapy. Analysis was limited to patients with low (GS=6)-intermediate risk [GS 7(3+4)] disease with a low risk of occult metastatic disease.. Fisher Exact test and Kaplan-Meier (KM) analyses were used to analyze differences in treatment patterns and biochemical recurrence (BCR).

Results NAM were diagnosed with PCa at a younger median age than their US counterparts (64 vs 68 Year, $p < 0.001$). The median definitive radiation dose was 70.2 Gy (IQR: 70–73.8) for NAM vs. 78 Gy (IQR: 75.6–79.2) for US men. 10 year actuarial freedom from biochemical failure (FFBF) was 83% vs. 93%, ($p = 0.001$) among NAM compared to the US counterpart. In a univariate cox proportional Hazard (CPH) model, NAM had significantly higher risk for BCR (Hazard Ratio 3.5, 95% CI, 1.57–7.80, $p = 0.002$). NAM were more likely to receive androgen deprivation therapy (ADT) compared to US counterparts (60.8% Vs 21.5%, $p = <0.001$). US counterparts are more likely to receive combination EBRT and Brachytherapy (23.3% vs. 4.3% $p = <0.001$) compared to NAM.

Conclusion NAM with low-intermediate risk PCa experience less durable disease control and outcomes following standard treatment recommendations. Results may suggest underlying biological differences and variation in RT treatment doses/delivery. This data will aid in developing research strategies to improve treatment outcomes in NAM.

PRESENTATION

BIOMARKERS,
HAEMATOLOGY
& OTHER
ABSTRACTS

13:30–14:30

Thursday

9 November

Yates, Clayton

QUADRUPLE NEGATIVE BREAST CANCER PATIENTS WITH AFRICAN ANCESTRY HAVE AN ENRICHED BASAL AND IMMUNE SIGNATURE

Akinremi, Titilola⁵; Davids, Melissa⁴; Dean-Colomb, Windy²; Ghebremedhin, Anghesom¹; Grizzle, William³; Karanam, Balu¹; Yates, Clayton¹
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Purpose There is increasing evidence that Androgen Receptor (AR) expression has prognostic usefulness in Triple negative breast cancer (TNBC), where tumors that lack AR expression are considered Quadruple Negative Breast Cancers (QNBC). However, a comprehensive analysis of AR expression within all breast cancer subtypes or stratified in women with African Ancestry (AA) has not been reported.

Experimental Design We assessed AR mRNA expression in 925 tumors from The Cancer Genome Atlas, and 136 tumors in 2 confirmation sets. AR protein expression was determined by immunohistochemistry in 197 tumors from a multi-institutional cohort, for a total of 1258 American patients analyzed. Results were validated in 21 Nigerian Breast Cancer patients. Cox hazard ratios were used to determine correlations to PAM50 breast cancer subtypes, and TNBC subtypes.

Results Overall, AR-negative patients are diagnosed at a younger age compared to AR-positive patients, with the average age of AA AR-negative patients being, 49 compared to 57 in white patients. AA breast tumors express AR at lower rates compared to Whites and Nigerian patients have lower AR than AA patient. Furthermore, AR expression was independent of ER and PR expression ($p < 0.0001$). AR-negative patients have a (66.60; 95% CI, 32–146) odds ratio of being basal-like compared to other PAM50 subtypes, and this is associated with an increased time to progression and decreased overall survival. AA QNBC patients predominately demonstrated BL1, BL2 and IM subtypes, with differential expression of E2F1, NFKBIL2, CCL2, TGFB3, CEBPB, PDK1, IL12RB2, IL2RA, and SOS1 genes compared to white patients.

Conclusion AR should be used as a prognostic marker, along with ER, PR, and HER2 for breast cancer patients particularly in African American and Nigerian Women. AA QNBC patients have a characteristic immune signature, suggesting that these patients could benefit from newly developed immune therapies.

PRESENTATION

PALLIATIVE CARE & OTHER ABSTRACTS

14:40–16:30

Wednesday

8 November

Yennu, Sriram

ECHO PALLIATIVE CARE IN AFRICA: TELE-MENTORING TO IMPROVE THE QUALITY OF PALLIATIVE CARE IN SUB-SAHARAN AFRICA

Amos, Charles¹; Arthur, Joseph¹; Chidebe, Runcie³; Opore-Lokko, Edwina Addo⁴; Reddy, Suresh¹; Weru, John²; Yennu, Sriram¹

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Quality Palliative Care (PC) can provide prompt relief from unnecessary suffering and improve quality of life in end of life patients. The goal of this ongoing project is to increase access to Quality PC for end of life patients by providing PC training and telementoring to health care practitioners in Sub-Saharan Africa using ECHO Palliative Care in Africa (ECHO-PACA) Telementoring program.

Methods The Department of Palliative Care at the University of Texas MD Anderson Cancer Center (MDACC) and ECHO-PACA Team is currently conducting telementoring with health care providers in Sub-Saharan Africa. ECHO-PACA began with the establishment of a comprehensive PC curriculum that was customized to local needs. Groups were then recruited to attend a monthly teleconference, which consists of case presentations, discussion, and a didactic presentation. The case presentation mimics the method used to train residents in which a case is presented and feedback on care is provided. The didactic session follows the established curriculum to teach an aspect of palliative care. At the conclusion of the telementoring session, those who presented a case presentation are provided a detailed summary of suggestions for care of the patient presented. Feedback is also given to the MDACC and ECHO-PACA teams at the conclusion of each session that is used to improve future sessions and the curriculum.

Results The program began in July 2016 with the recruitment of 6 groups and has expanded to 14 groups from Brazil, England, Ghana, Ireland, Kenya, Nigeria, South Africa, and Zambia. The groups consist of cancer organizations, medical schools, nursing schools, hospices, hospitals, clinics, and solo practitioners. Within the groups are doctors, nurses, psychologists/counselors, pharmacists and administrators. To date ECHO-PACA has provided 65 hours of clinic time. This education has allowed healthcare practitioners to benefit from the collective knowledge of specialist and colleagues, to more effectively care for end of life patients within their communities. There were some challenges with groups that do not have strong internet connectivity, but efforts have been made to assist with those issues and further expand the number of participating groups.

Conclusions ECHO-PACA has proven to be feasible and effective in disseminating PC knowledge and skills training. It has also generated a great deal of enthusiasm among current and new participants. The curriculum also continues to be refined using feedback from all groups. We will discuss ECHO-PACA future collaborations and outcomes in our presentation.

PRESENTATION

Zheng, Yonglan

BREAST CANCER PANEL GENE SEQUENCING IN HIGH-RISK COHORTS AND WOMEN OF AFRICAN ANCESTRY

**GERMLINE
GENETIC
CANCERS:
BREAST AND
OVARIAN**
14:40–16:30
Thursday
9 November

Zheng, Yonglan¹; Olopade, Olufunmilayo¹

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Massive parallel sequencing (MPS) technologies and Big Data are revolutionizing the detection of genetic variants and promise to accelerate cancer control efforts in underserved populations. To evaluate inherited breast cancer predisposition genes in diverse populations, we applied a cancer risk panel for the detection of cancer-causing mutations among populations of African Ancestry in the US, Brazil, Cameroon, Uganda and Nigeria. We developed ConVarCal, an easy-to-use variant calling platform, for precise detection of MPS variants at both individual and population levels. In our high risk cohort of women undergoing intensive surveillance for breast cancer (n=295), we detected 148 carriers (50.2%) with germline mutations: 90.5% mutations in BRCA1 (78) and BRCA2 (56), and 9.5% mutations in CHEK2, CDH1, PALB2, ATM, TP53, APC, and PTEN. Among African American breast cancer patients ascertained in our medical center, we detected 68 germline mutations in 65 of 289 (22.5%) patients: 80% carried pathogenic mutations in BRCA1 (29) and BRCA2 (23) with the remaining (20%) having mutations in PALB2, CHEK2, BARD1, ATM, PTEN, or TP53. In 292 unselected breast cancer cases and healthy controls from the Northeast of Brazil, pathogenic mutations were identified in 21.4% (37/173) cases and in 0.84% (1/119) controls. The major risk contributors (59.5%) in cases are BRCA1 (12) and BRCA2 (10). Three recurrent mutations of European ancestry in BRCA1 and PALB2 accounted for 12.4% of the total mutations. Among 1,136 Nigerian breast cancer cases and 997 cancer-free controls, which is the largest unbiased study to date in women of African ancestry. 116 distinct mutations were identified in 17 different genes, 14.4% of patients and 1.8% of controls carried a mutation in a breast cancer gene. In cases we found an eminently high frequency of BRCA1 (80, 7.04%) and 47 BRCA2 (47, 4.14%); these two genes contributed significantly (~75%) in this cohort compared to other susceptibility genes. In addition, our data revealed that BRCA1 mutation status was associated with age at diagnosis, positive family history, and triple-negative breast cancer (TNBC). Data on Cameroon and Uganda are pending and will be presented at the meeting. Taken together, cost-efficient MPS and robust variant calling platform that can now be deployed for large-scale breast cancer genetic studies. These data underscore the need for future studies on penetrance and population risk estimates for breast cancer susceptibility genes in understudied and underserved populations of African ancestry across the Diaspora.

POSTER

Zirimenya, Ludoviko

P380 | PAIN ASSESSMENT TRACKING TOOL: AUDITING PRACTICE IN A PALLIATIVE CARE SETTING

Merriman, Anne¹; Mwebesa, Eddie¹; Nagujja, MCO Margaret²;
Zirimenya, Ludoviko¹
¹Hospice Africa Uganda; ²International Hospital Kampala

**POSTER
SESSION
TWO**

16:30–18:00
Thursday
9 November

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Objective Pain control is key in the provision of quality palliative care. Health providers are encouraged to do it using available tools adapted to local setting. HAU uses a 5 point numerical hand scale in assessment of pain on initial and follow up visits of all its patients. It has developed a tool that was incorporated into its patients' charts to help clinicians track pain assessment on each review done. This is now being used in 28 countries trained through HAU educational programmers. The reasons for choosing the 5 scale vs the 10 scale in an African setting will be presented.

This practice has never been audited to check for its effectiveness in ensuring appropriate pain control of cancer patients attending care. This Audit was done in order to inform best practices.

Methods This was a retrospective Audit using patient care charts of Active patients, in care, that had contacted HAU clinical team within 3 months of the review period. The data was collected using a check list, collated and analysed using Microsoft excel.

Results Of all the 100 charts randomly selected, only 1 had missing information required and so was not included in the analysis. Of the 100 randomly selected patient charts, 59 were of cancer patients of average age of 53.9 years (ranging from 24 years to 80 years). 44% were female and 56% male. Cervical cancer was the commonest cancer in women at 62% and cancer of prostate commonest in the men at 30%. On initial pain assessment 8.5% of the patients presented with mild pain, 18.7% had moderate pain and 73% presented with severe pain. Information extracted from the pain tracking tool showed that on subsequent second and third review of the patients, pain was documented to have decreased to mild pain in 98% of the patients and in only 2% had it remained as severe. The average 24 hourly oral liquid morphine dose was 62.7mg the highest dose being 300mgs and lowest being 20mgs. Only 93% of the cancer patients were on oral liquid morphine.

Conclusions Simple tools that are adapted to local settings, are very efficient in patient care management as they are able to track distresses like pain and hence guide health practitioners in patient care management to ensure an improved quality of life.



CANCER IN AFRICA: MAKING STRIDES, CREATING SOLUTIONS

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