OFFICIAL OPENING OF THE KENYA INTERNATIONAL CONFERENCE ON CANCER IN MOMBASA (24-26 November, 2022)

HOST SPEAKER: Dr Miriam Mutebi, Chairperson - Kenya Society of Haematology and Oncology, KESHO

Welcome Remarks

"We are excited to be here in Mombasa. Welcome to the 7thKenya International Conference on Cancer at Kenya's seaport city of Mombasa. As Kenya Society of Haematology and Oncology-KESHO, we have grown in leaps and bounds," said Dr Miriam Mutebi, Breast Surgical Oncologist from the Aga Khan Hospital.

"Looking at this year's theme, how do we innovate to improve care? We are seeing an increase in community engagement but sadly we have also witnessed deaths as a result of cancer."

"What can we do about this? How can we harness technological advancements to improve patient care?

Over the next three days, we will discuss keeping the patient at the centre of the talks."

The Conference kicked off on the 24th of November attracting key speakers from the medical world with one agenda of addressing cancer menace on the global scale.

On the Sidelines

Dr Mutebi also addressed the media by highlighting some of the key issues that need to be put at the forefront in the war against cancer. In

her submissions, she said that funding is one of the major components that need to be relooked at by governments to tackle this disease.

While addressing the conference, chairperson of the Kenya Society of Haematology and Oncology (KESHO) Dr Miriam Mutebi said that the Kenyan government for instance should set aside nearly Kshs.12 billion (0.1% of Kenya's GDP) annually to finance targeted research on cancer, to inform the local interventions in the fight against the disease.

Dr Miriam Mutebi, Chairperson Kenya Society of Haematoloy and Oncology addressing the journalists during the 7th Kenya International Cancer Conference in Mombasa

Additionally, she submitted that research is a key pillar in matters of cancer control and of extreme significance in understanding the cancer burden and how patients respond to different treatments and interventions.

She mentioned that a lot of the cancer research being conducted in the East African country was not addressing challenges faced by Kenya.

"This is because cancer research is largely funded through external collaborators who frequently dictate the terms and areas of the research, which may not always align with the local priorities," Dr Mutebi explained.

She reminded delegates at the conference that African Union member states in 2012 adopted a proposal to dedicate at least 1% of their respective GDPs for health research, adding that Kenya should move a step further by ring-fencing at least 10% of that amount for cancer research.

"As a country, we haven't really supported cancer research to fully understand the cancer patterns in Kenya and the responses to treatments by our patients over the years," Dr Mutebi said.

She observed most of the research on cancer being done in Kenya was being supported and driven by global partners in areas of their choice, which are not always informed by trends in Kenya and the cancer disease burden. She cited rising cases of cervical, esophageal and colorectal cancer without corresponding increases in research output and funding for the three.

"We are not able to determine our own research agenda, because the focus of most of the research being conducted here is frequently determined by those funding it," Dr Mutebi said.

The KESHO chairperson challenged policymakers, oncology experts, key opinion leaders and cancer advocates and other stakeholders at the

conference, to lobby for dedicated cancer research funding especially through annual budgetary allocation.

"There was also a need to support academic institutions, research institutions and other stakeholders to work collaboratively to develop patient-centric research that addresses the needs of our communities and involves them as key participants in this research. We also need research that addresses palliative and supportive care and patient reported outcomes, that addresses socio-cultural barriers to care like stigma and health economics, [research] that determines cost effectiveness and quality of care [are much needed] in our context. It is very difficult to drive one's agenda when one is relying on external funding. As we leave, our key focus should be on how to develop a dedicated research support ecosystem that develops the skills set and financing for cancer research," she said.

POLICY: FROM PAPER TO IMPLEMENTATION

PLENARY SESSIONS DAY 1

TOPIC: NATIONAL CANCER CONTROL PLANS: TRANSLATING KNOWLEDGE AND POLICIES INTO ACTION

SPEAKER: PROF. TWALIB NGOMA- RESEARCH CHAIR MUHIMBILI UNIVERSITY

Prof. Twalib Ngoma began his presentation by posing questions to *delegates "Do you think national cancer control plans are necessary? Should we invest in them?"* According to Prof. Ngoma they are necessary and there is no argument about it and in everything you have to have a plan.

Background

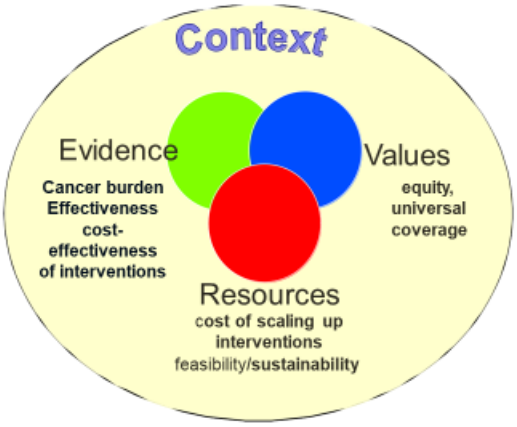
In a recent World Health Organization (WHO) publication the President Elect of AORTIC Miriam Mutebi reported that in 2013, 46% of African countries had National Cancer Control Plans (NCCPs) and in 2017 the number had increased to 71%. However, in May 2022, the Lancet Commission on Cancer Control in sub-Sahara Africa reported that the cancer control situation is deplorable and one of its key recommendations is for countries to create effective NCCPs. The commission listed six barriers found to hinder effective cancer control in Sub-Saharan Africa as follows;

- Non-existent or incomplete cancer registries
- Inadequate cancer prevention efforts
- Insufficient screening and diagnostic facilities
- Low availability of and poor access to effective cancer treatments
- Huge shortage of well trained, experienced medical personnel
- Insufficient funding – This was found in all the countries

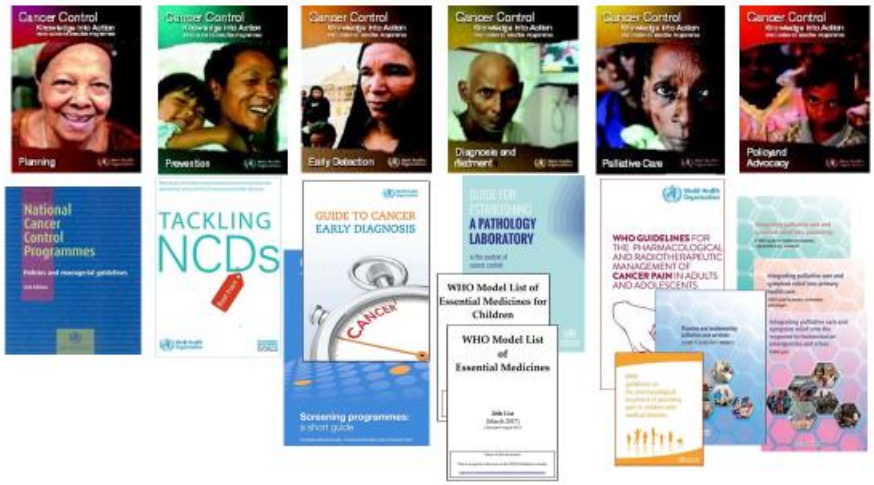
Prof. Ngoma, explained that a national cancer control plan is a public health programme established by governments with the support of all sectors including patients. The plans are supposed to help countries to identify, prioritize and implement the most cost-effective actions in a stepwise fashion. NCCPs cover the whole cancer control continuum and are designed to reduce cancer incidence and mortality and improve quality of life of cancer patients by making the best use of available resources. Implementation is expected to take between 5 to 10 years.

IMPORTANT CONSIDERATIONS

- Involvement of all stakeholders
- Evidence-based
- Equity & UHC
- Realistic and feasible
- Baseline indicators
- M&E



WHO GUIDANCE TO TRANSLATE KNOWLEDGE INTO ACTION-ADVOCACY



Conclusion

In his conclusion Prof. Ngoma opines the lens through which decision makers see cancer plans shapes how the plans are implemented. *"Decision makers need something similar to what the graphical user interface did for personal computers -Creation of a user friendly standard operating procedure. For NCCPs this standard operating procedure can be accomplished through Implementation Science Research."* He acknowledges the existence of a roadmap but says it is not enough and there is a need to improve outcomes by doing more research, seeking solutions by among others removing barriers and using simple language that can be understood.

TOPIC: CANCER POLICY-THE GOOD, THE BAD AND THE UGLY

SPEAKER: Dr Ajay Aggarwal MRCP FRCR PhD

Background

Dr Ajay Aggarwal said that banning smoking in public spaces has been fundamental and key in fighting cancer. Smoking dropped by 22 percent in 2022. He added that policy can go a long way in helping to create awareness, prevention and treatment of cancer.

The picture below shows the impact of the smoking ban in the United Kingdom where smokers decreased by nearly 2 million in a decade.

Nudge Policies

- Cancer patients have been exposed to Choice and Competition Policy. This is founded on Change/Selection theory (Don Berwick)

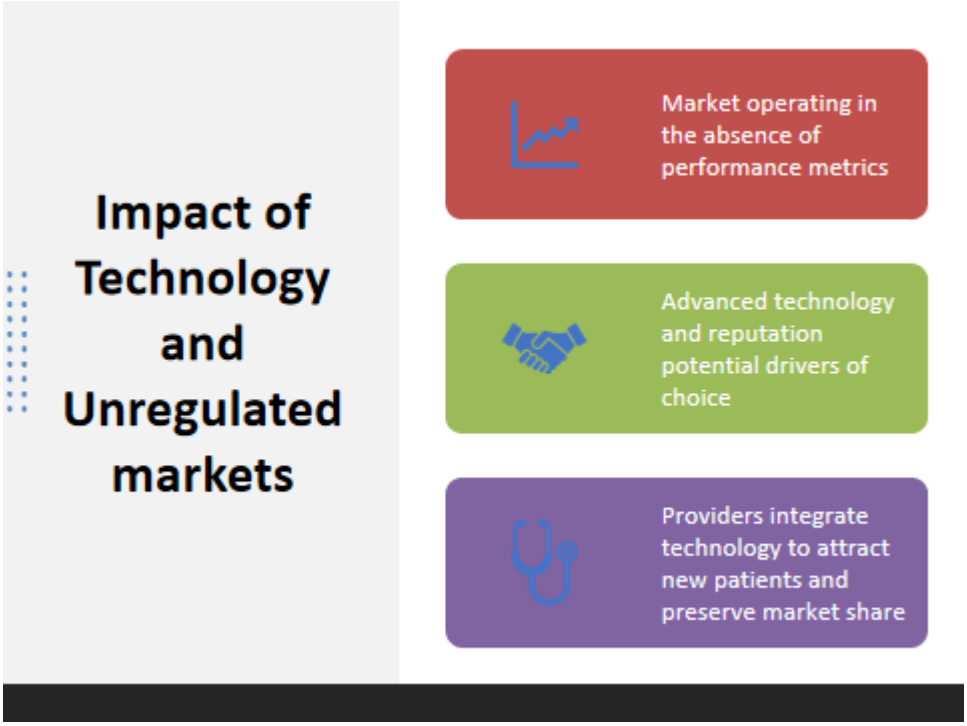
- Patients are able to select a cancer provider of their choice based on quality.

- Prices fixed but loss of market share to better quality centres should drive quality in other centres.

- Threat of losing patients drives standards across all other centres.

Impact of Technology and Unregulated markets

According to Dr Aggarwal the impact of technology and unregulated markets has resulted into mixed reactions. For instance, a market operating in the absence of performance metrics, advanced technology and reputation is a potential driver of choice. Health Providers have integrated technology to attract and preserve market share as shown below.



Conclusion

- Evidence based policy making, far from a reality.
- Poorly constructed policy – negative impacts on society.

- Investigating health system issues – need academic collaboration and good quality data.

- Alignment of key stakeholders essential to influence policy.

- Involve policymakers early in the evidence generation process.

TOPIC: DEVELOPING THE CANCER WORKFORCE WE NEED IN AFRICA

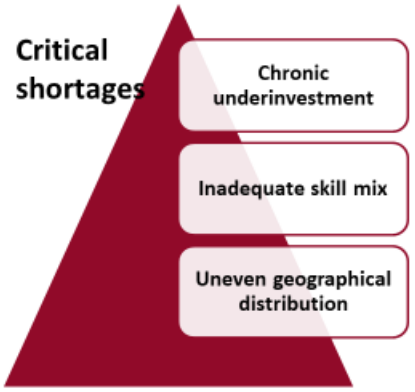
SPEAKER: NAZIK HAMMAD, FRCPC, M.D., MEHP, FACP QUEEN'S UNIVERSITY

Background

Sustainable Development Goal 3(C) seeks to substantially increase health financing and the recruitment, development, training and retention of the health workforce in developing countries, especially in least developed countries and small island developing states.

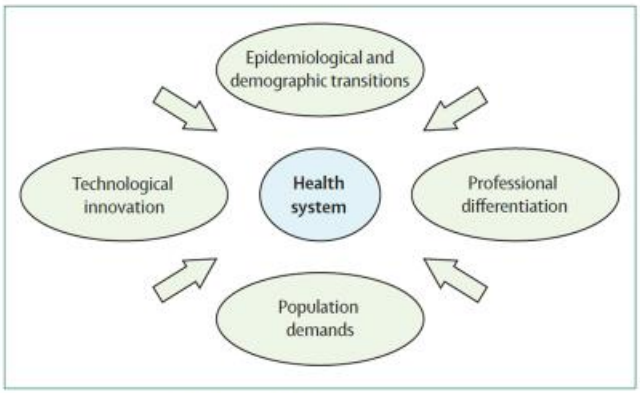
Dr. Nazik Hammad in his talk emphasized that health workers are the human faces of the health system. Acknowledging that East Africa is doing well in training, he however pointed out that chronic underinvestment from governments makes geographical distribution of human resource uneven. He added that population demands, treatment and technological innovations notwithstanding competencies need updating to foundation, critical thinking, emotional intelligence and communication proficiencies.

Salient Global Problems in Oncology Workforce and HPE



- Curricula rigidities
- professional silos
- static pedagogy
- insufficient adaptation to local contexts
- commercialism in the professions

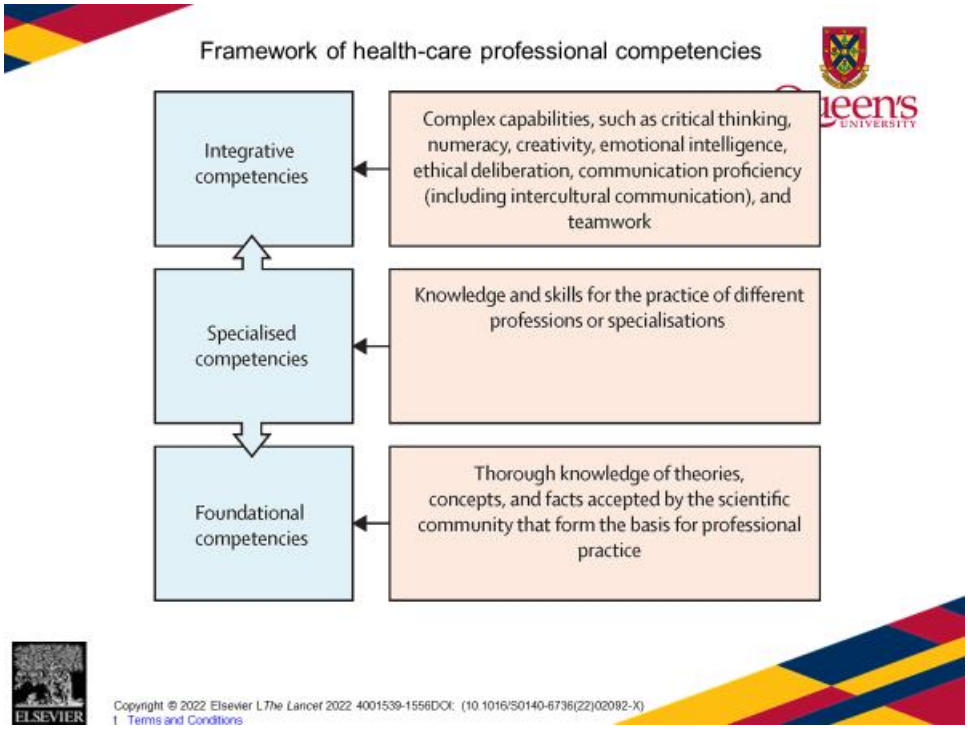
No longer emerging challenges



GOAL IS QUANTITY, QUALITY AND RELEVAENCE

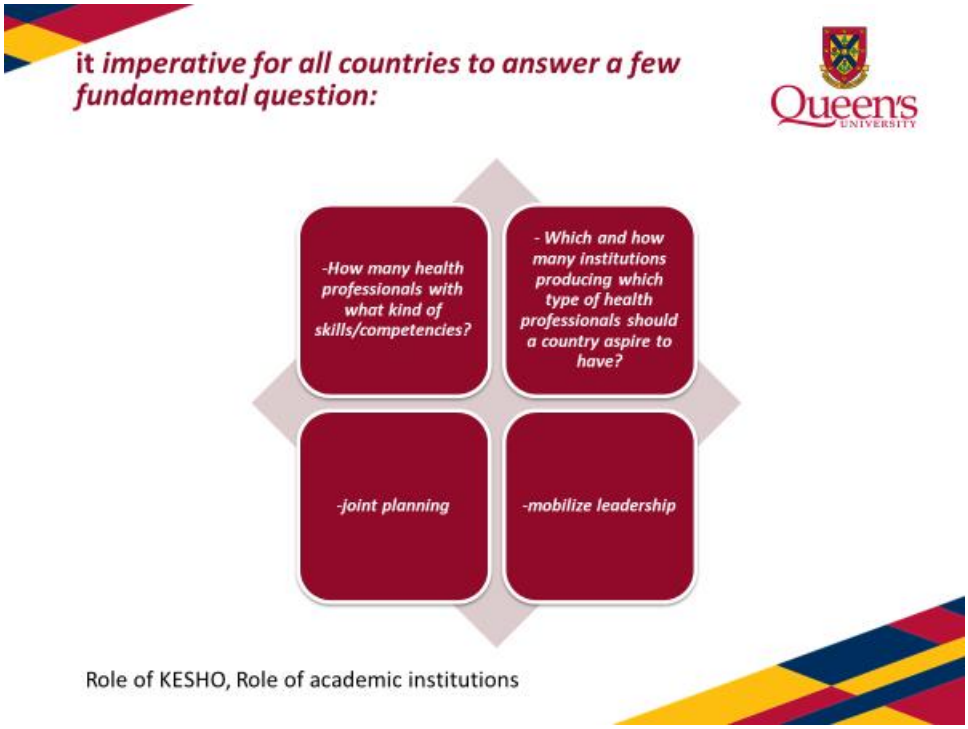
Figure 2: Emerging challenges to health systems

Frenk et al: Health professionals for a new century: transforming education to strengthen health systems in an interdependent
Lancet. 2010



Dr. Hammad reiterated that it is imperative for countries to answer fundamentals questions as they seek to develop human workforce to help deal with the cancer burden. This include assessing the number of health professionals, their skills, competencies, number of training institutions and how many more as well as exploring collaboration for planning and mobilizing necessary leadership. "*Broad engagement of leaders at*

all levels—local, national, and global—will be crucial to achieve the proposed reforms and outcomes. Leadership has to come from within the academic and professional communities, but it must be backed by political leaders in government and society." He added.



According to Dr. Hammad, by 2020 countries were expected to have put in place a series of measures to facilitate development of human capital. They include;

- Have a human resource for health unit with responsibility for development and monitoring of policies and plans.
- Have regulatory mechanisms to promote patient safety and adequate oversight of the private sector**.**
- Have established accreditation mechanisms for health training institutions.
- Making progress on health workforce registries to track health workforce stock, education, distribution, flows, demand, capacity and remuneration.
- Making progress on sharing data on human resources for health through national health workforce accounts and submit core indicators to the WHO Secretariat annually.

- Ensure all bilateral and multilateral agencies are strengthening health workforce assessment and information exchange.

He gave an example of the United Kingdom which already has in place a model of training professionals. *"Trainees must complete IMT and acquire the full MRCP(UK) Diploma in order to enter specialty training at ST4 from 2022. Some specialties (group 2 specialties) will recruit trainees who have completed two years of IMT and completed MRCP(UK) at ST3 level,"* he informed the gathering.

Recommendations

Dr. Hammad's message to Oncology Health Professionals in Africa is;

- Health institutions taking the lead and analyzing pros and cons
- Unite and make decisions
- Promote professional differentiation by "*avoiding professional silos, turf wars and professional jealousies*"

- *"Putting down the young"* versus *"ageism"*
- Solutions that do not trump quality. *"No task shifting without supportive supervision"*
- Streamline the profession and set timelines especially for training
- Continuous dialogue and open mindedness

TOPIC: KENYA'S CANCER STRATEGY: PAST, PRESENT AND FUTURE

SPEAKER: DR. MARY NYANGASI. HEAD, NATIONAL CANCER CONTROL PROGRAM MINISTRY OF HEALTH

Cancer is the third leading cause of death in Kenya after infectious and cardiovascular diseases. The leading cancers in Kenya are; breast, cervical, and oesophagus affecting women, prostate, oesophagus and colorectal affecting men, and lymphoma, leukaemia's affecting children. In her presentation Dr. Mary Nyangasi noted low awareness, late stage presentation, poor access to cancer diagnosis and treatment areas some main challenges.

Dr. Nyangasi shared current global cancer policies as follows;

UNITED NATIONS' SUSTAINABLE DEVELOPMENT GOALS

SDG 2030: Target 3.4 – 33.3 % reduction in PREMATURE mortality from NCDs

GLOBAL STRATEGY FOR ELIMINATION OF CERVICAL CANCER: THE 90:70:90 2030 ELIMINATION TARGETS

Dr Tedros Adhanom Ghebreyesus, Director-General, World Health Organization

- 90% of girls 10-14 yrs fully vaccinated
- 70% of eligible women screened with a high-performance test (HPV DNA testing)
- 90% of those found to have cervical disease receive treatment

To reduce breast cancer mortality by 2.5% per year to save 2.5 million lives by 2040 through:

1. Health promotion and early diagnosis
2. Timely breast cancer diagnosis: 60 days
3. Comprehensive breast cancer management.

WHO Global Breast Cancer Initiative

WHO Global Initiative for Childhood Cancer

"Too many children have their lives cut short by cancer and survival rates in poor countries are scandalously lower than in wealthy countries.."

Target: 60% cure rates!

Dr. Nyangasi informed the delegates that Kenya has a national cancer control strategy which is expected to assist in identifying interventions for cancer prevention and control based on; Cancer burden, Risk factor prevalence and available resources. Because Kenya has a double burden of disease, she said the framework ensures cancer control is prioritized. All stakeholders are aligned to this framework. Additionally, the Constitution of Kenya 2010 devolved the health system therefore counties are to be guided by this strategy in allocation of resources for cancer prevention and control.

NCCS 2017-2022 overview & Performance Trends

- 10 guiding principles
- 5 pillars
- 5 overarching goals
- 33 Strategic objectives
- 215 interventions

Year	Fully achieved (n,%)	Partially achieved (n,%)	Not achieved (n,%)
2018	42 (19.5)	94 (43.7)	79 (36.8)
2019	46 (21.4)	143 (66.5)	26 (12.1)
2020	52 (24.2)	144 (67.0)	19 (8.8)
2021	59 (27.5)	140 (65.1)	16 (7.4)

The national cancer strategy involves implementation of the Kenya Cancer Policy and the Kenya Palliative Care Policy 2021-2030.

Kenya Cancer Policy launched in 2019 provides an overarching framework to comprehensively address cancer control in Kenya through the systematic implementation of evidence-based interventions across the continuum of care.

Kenya Palliative Care Policy 2021-2030 provides a legal framework within which holistic and well-coordinated palliative care services are made

available and accessible to everyone. It will facilitate the scale-up of palliative care at all levels of the health system through the adoption of a primary health approach.

Dr. Nyangasi further highlighted eight key achievements as;

- Launch of Cervical Cancer Advocacy Guide 2020 for opinion leaders: 160 leaders trained
- Awareness: IEC materials, CHV training manuals
- Vaccination: National HPV vaccine launch in 2019
- Capacity building: on job training for 6,000 HCWs in facilities in 25 counties; e-learning platforms launched in November 2021 with over 3,000PHC workers trained so far
- HPV testing pilot & launch for cervical cancer screening done
- Cancer HPTs: KEML includes cancer, KEMSA procurement, 23 free anti-cancers, data tools in KHIS, National Oncology Dashboard
- National Cancer Reference Laboratory: HPV testing, cytology, histology, IHC, training & mentorship of 27 county lab staff
- Treatment: 10 county chemo centers, 3 radiotherapy, PC policy launched and disseminated to all 47 counties

Key challenges and way forward

- Awareness creation and sensitization on roles in implementing cancer policy
- Ensuring policy coherence and alignment amongst stakeholders
- Funding for policy implementation
- Lack of local data informing policy: establish PBCRs and analyze to inform policy

- County level implementation structures and ownership
- Demonstrated importance of having a centralized governance structure

Future Perspectives

- Improved awareness & sensitization
- County cancer control programs with clear targets
- Prioritization in policy & funding
- Health workforce availability and skillset
- Access to care: decentralized, community based, patient centric, self-care
- Data and digitalization, AI, remote care
- Structured collaborations between public, independent and voluntary sector HCOs

TOPIC: CLOSING THE GLOBAL CANCER DIVIDE: TOWARDS AN ECONOMICS OF HOPE

SPEAKER: FELICIA MARIE KNAUL- DIRECTOR INSTITUTE FOR ADVANCED STUDY OF THE AMERICAS AND PROFESSOR AT THE MILLER SCHOOL OF MEDICINE AT THE UNIVERSITY OF MIAMI.

Dr. Knaul delivered her lecture virtually from the USA and began with the clarion call that "*Closing cancer divides is affordable and achievable, it is a health and equity and an economic imperative. And can be achieved through diagonal strategies for universal health coverage guided and inspired by evidence.*"

A cancer survivor and author, Dr. Knaul shared findings of a report on the cancer divide compiled by a number of stakeholders in the sector, that

shows globally for children aged 5-14 cancer is the number one cause of death in high income and number two in upper middle-income countries. It is estimated that the total economic cost of 2-4 % of the total global GDP and one million US dollars is required to treat children annually. According to Dr. Knaul it is highly probable that a person diagnosed with cancer in poor income countries will die. She noted that while cancer is a major challenge for both rich and poor it is the poor who increasingly suffer the most. She added that the opportunity to survive should not be defined by income emphasizing that the *"The pain divide is the most insidious injustice.*

Conclusion

Dr. Knaul asked delegates to ponder *"How can we work together to close the global pain divide?"*

She argued that cost of treatment is much less than what people fear and interventions are affordable if only the diagonal approach to health system strengthening is reinforced with financing, delivery and advocacy promoting the economics of hope. "*The costs of inaction are huge and therefore we have to invest in action.*

OFFICIAL OPENING CEREMONY

TOPIC: OPERATIONALIZING RADIOTHERAPY SERVICES IN LMIC. OPPORTUNITIES AND STRATEGIES

SPEAKER: DR. VERNA VANDERPUYE - MBCHB FWACS (CHIEF GUEST)

CONSULTANT ONCOLOGIST -KORLE BU TEACHING HOSPITAL-GHANA

Dr. Verna Vanderpuye emphasized the need to harness biodiversity of Africa. *"We live the same way. Our lifestyles are the same. Universal healthcare is for us and if we do not uptake as we should then there is a problem. We need to look at what is important in cancer care."* According to Dr. Vanderpuye there is need to tailor interventions according to our needs noting that it is impossible to cover all cancers. She however encouraged discussions about our hiccups, quality of workforce, research and data needed as well as engaging in local innovations.

Dr. Vanderpuye cited a number of reasons why radiation therapy is a vital component of cancer care as follows;

- It is cost effective
- It is also complex and reliant on highly specialized equipment and personnel
- High infrastructural and maintenance costs
- Reasonable to be domiciled in tertiary institutions
- Ideal module is for each country to have a comprehensive radiotherapy centre
- Outcomes study reflect necessary needs assessment for planning
- Cancer control must highlight the necessity of radiotherapy investment

- Realistic case studies must be drawn including long term maintenance menaces
- More May not always be better

OPPORTUNITIES

- Increase in formulation of CCP
- Effective South - South collaboration
- Hub and Spoke modules
- Regional centres of excellence
- Harness Covid-19 silver- lining
- Redesign use of existing equipment
- Overflow of collaborative efforts
- Increased technological advancement
- Global adoption of UHC

STRATEGIES

- Mandate radiotherapy facilities with expansion plans
- Through virtual dialogue, share values
- Realistic resource sensitive expansion
- Strengthen and expand local training centres
- Implementation research

-virtual training

-hypofractionation

-triage of patients

- Repurposing workflows
- Effective/relevant North - South engagements
- Cost and MAINTENANCE of equipment advocacy
- Innovative research to ensure cost effective applications
- Start with cancers with high return on investment

KEYNOTE SPEECH BY KENYA'S HEALTH CABINET SECRETARY HON. SUSAN NAKHUMICHA WAFULA, PRESENTED ON HER BEHALF BY:

DR. MARY NYANGASI. HEAD, NATIONAL CANCER CONTROL PROGRAM MINISTRY OF HEALTH

"Ladies and Gentlemen, I am delighted to join you this morning to give my address as a Keynote Speaker during the official opening of the 7th Kenya International Cancer Conference-KICC."

The Cabinet Secretary for Health thanked the Kenya Society of Haematology and Oncology-KESHO for organizing the conference.

She further said that the Conference was timely as it was organized at a time when the Ministry was in the process of developing a new Strategic Plan to guide the East African nation in cancer prevention and control.

"This conference provides an opportunity for us to review progress made in cancer prevention and control, share best practices, brainstorm on opportunities and strategies to improve cancer outcomes."

The CS submitted that she was hoping to incorporate information from the conference to enrich their Strategic Plan Document to guide cancer policy and planning.

"It is my hope that as stakeholders in the cancer space, you all provide your inputs to our team so that we can have a robust strategic framework to guide cancer prevention and control in Kenya over the next five years."

The global mortalities related to non-communicable diseases-NCDs are projected to increase by 17 percent in the next decade, the CS said. Nearly 85 percent of this burden is projected to be in Low- and Middle-Income Countries-LMICs. Cancer is one of the four main NCDs in addition to Cardiovascular diseases, Diabetes, Hypertension and Chronic Respiratory Diseases contributing to more than 80 percent of annual premature NCDs globally.

"The rising NCDs burden is driven by rapidly expanding urbanization, lifestyle changes occasioned by globalization and an aging population, which has led to an epidemiological transition of our disease burden from predominantly communicable diseases to a rapidly rising burden of non-communicable diseases (NCDs)."

Rising Cancer Cases

According to the Health Cabinet Secretary, the rising cancer cases particularly remain a major public concern, at national, regional and global level. Unfortunately, Low-and Middle-Income Countries (LMICs) disproportionately bear the brunt of this disease where it is estimated that 70 percent of cancer mortalities occur.

In Kenya, the rising burden is exerting strain on the already constrained health systems. Therefore, to halt and reverse the burden of cancer, the Ministry of Health was developing a National Cancer Strategy to guide prioritization of high impact interventions over a 5-year period in line with the Kenya Cancer Policy 2019-2030.

"The KICC conference theme: 'Improving Cancer Outcomes-Innovations, Opportunities and Strategies in the Care Continuum' resonates well with the need to harness appropriate technology and innovation to support the delivery of Quality Healthcare in the cancer prevention and control continuum. As per the Constitution of Kenya under Article 43(1) every Kenyan has the right to: the highest attainable standard of health, which includes the right to healthcare services including cancer care."

She further said that the ministry of health was happy to join great minds to discuss health issues and deal with diseases that are of major public health concern like cancer.

She said building the capacity of the country's healthcare workers remained a priority for the Ministry.

"We as the ministry have continued to explore and employ innovative strategies to improve the capacity of primary health care workers to detect cancers early. One such initiative is the deployment of the online learning platforms on cancer through the Ministry of Health Virtual Academy together with its mobile application as well as our M-Saratani android application to enable prompt detection and early referrals of suspected cancer cases."

She submitted that the Ministry is committed to providing policy guidance and making strategic investments for cancer prevention and control. The ministry was working alongside counties to scale up cancer screening services through capacity building so that primary health care facilities and provision of technical support to enable health care facilities to include cancer screening in their service charters and ensure these services are provided as per the cancer screening guidelines to downstage cancers.

"Through KEMSA, the Ministry will continue to support the supply of 20 critical chemotherapy medicines to the ten regional cancer centres and

three National Referral Facilities. This is meant to shield cancer patients from catastrophic expenditures and improve treatment completion rates and outcomes."

She said the government will continue to support the current radiotherapy treatment at three new regional radiotherapy centres in Nakuru, Garissa and Mombasa.

"I am happy to note that already many patients are receiving treatment indicating the dire need for this treatment on the ground. In this regard, working with key stakeholders, the Ministry is planning to establish additional comprehensive cancer centres in Nyeri, Kisii, Kisumu, Meru and Kakamega to meet the growing demand."

Conclusion

The Health CS emphasized the need for research and registration as key in cancer control planning activities in Kenya. Further, those two must be prioritized in the next strategic plan for the local cancer context to inform policy and planning.

"We are in the process of identifying priority research topics in the various cancer control domains, including description of cancer burden, cancer causes and prevention and gaps related to cancer screening and early detection, treatment, rehabilitation and early palliative care."

PRECISION MEDICINE

TOPIC: CHAMPIONING MOLECULAR TUMOR BOARD IN AFRICA: The Aga Khan Experience

SPEAKER: DR ALLAN NJAU, CONSULTANT PATHOLOGIST, AGA KHAN UNIVERSITY HOSPITAL, NAIROBI

Background

Dr. Allan Njau began his presentation by outlining the key areas of this study and essentially looked at the Concept of Molecular Tumor Board: aims and scope, rationale, format and outcome measures. He also analyzed case presentation in terms of brief illustration. Finally he delved into the way forward and expected future directions.

There were some key issues that emerged from his presentation as follows:

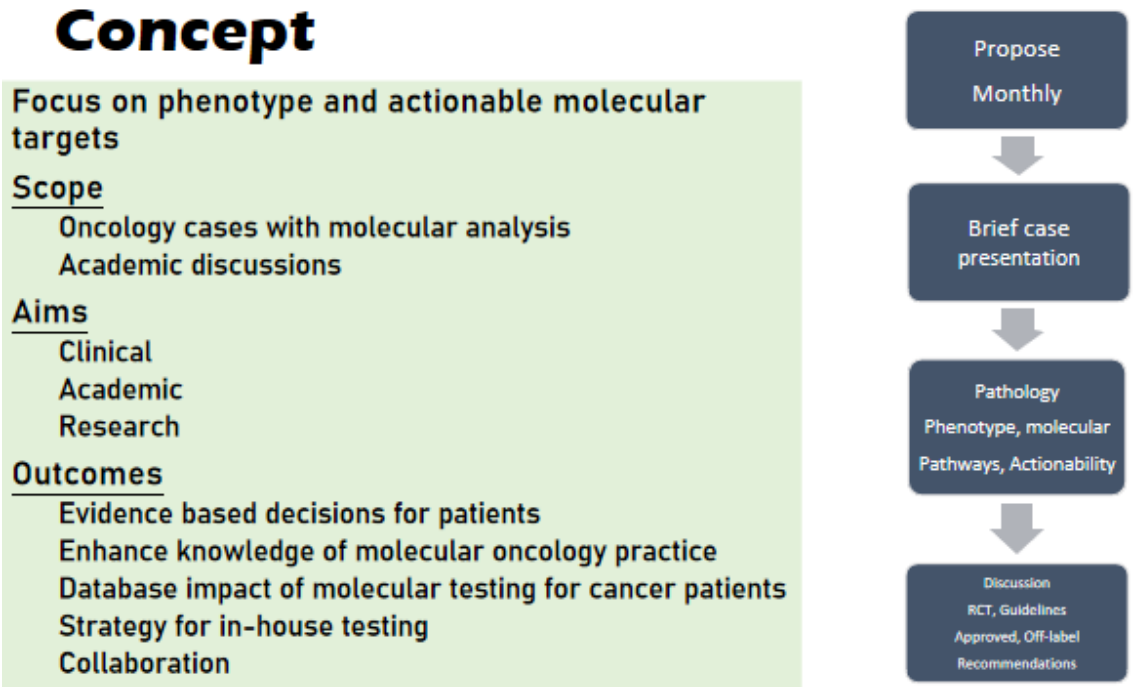
Targeted Therapy: Why are we doing Molecular Based Tests?

What are the main benefits of that targeted therapy?

What's the OBJECTIVE-To assess impact of targeted molecular testing in Kenya?

To develop capacity for testing

Dr. Njau then made concept presentation as expounded in the image below:



Targeted Therapy Decisions

Targeted therapy decisions

- Metastatic disease
- Hard-to-treat
- Carcinoma of unknown primary
- Certain biomarkers –TMB, *NTRK*, HR(D)
- Requirement to enroll in CT or academic
- Hereditary

Companion diagnostic
IHC
FISH
PCR
Gene expression
NGS

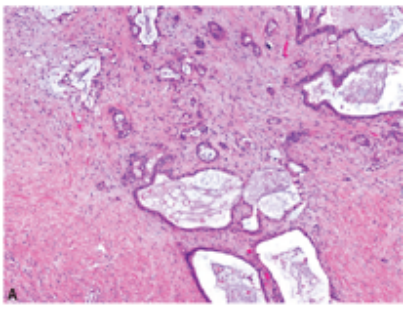
✓What test ?
✓ Phenotype considerations
✓Somatic Vs Germline
✓What sample ?
✓Size of the panel - more is not always better!

- Cost ?
- Patient's choice?
- Access?
- Potential benefit and cost to patient (*SHIVA, MOSCATO Trials*)
- Multiple single gene assays

Illustration: Preliminary Sessions

Illustration: Preliminary sessions

- General aspects of NGS and rational test ordering
- Samples for molecular testing
- NGS Reporting systems and terminology
- Variant terminology (SNV, CNV, Indel, SV)
- Somatic Vs Germline variants
- Tier classification (AMP/CAP/ASCO & ESCAT)



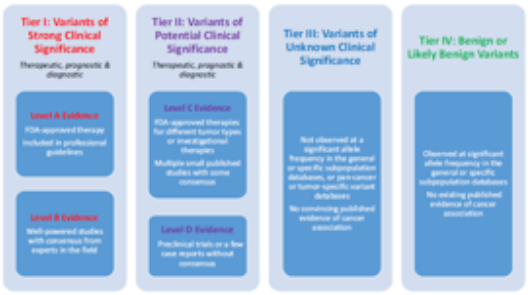


Illustration Case #1

Illustration: case #1

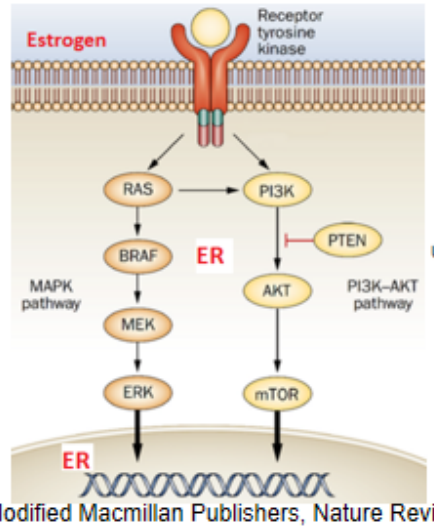
FOUNDATIONONE® CDx

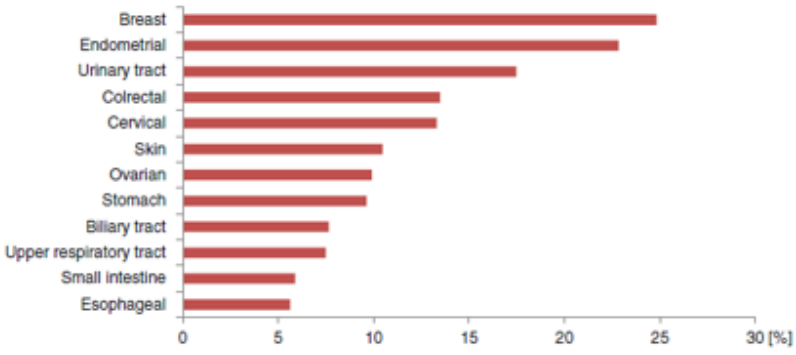
Clinical / Surgical pathology	Molecular Biomarkers
58 F	PIK3CA E545K (36.23%) (1, 2A)
Hx Breast ca 20 yrs ago	PTEN loss (2A)
Anterior abdominal wall nodule	MAPK1L1354fs*9,R273fs*27 (30.51%, 30.42%) (2A)
Metastatic ca	MSS
ER+, PR+, Her2 -	TMB 0/Mb
	Recommendation ?
	Evidence?

Alpelisib for *PIK3CA*-Mutated, Hormone Receptor–Positive Advanced Breast Cancer

F. André, E. Ciruelos, G. Rubovszky, M. Campone, S. Loibl, H.S. Rugo, H. Iwata, P. Conte, I.A. Mayer, B. Kaufman, T. Yamashita, Y.-S. Lu, K. Inoue, M. Takahashi, Z. Pápai, A.-S. Longin, D. Mills, C. Wilke, S. Hirawat, and D. Juric, for the SOLAR-1 Study Group®

PI3K/AKT/mTOR Pathway in HR Positive Breast Cancer





BOLERO-2

Modified Macmillan Publishers, Nature Reviews Endocrinology and Mayer, *Drugs* 2020 cBioPortal

Illustration: Case Summaries

Illustration: case summaries

1.	TEST	PHENOTYPE	MOLECULAR	THERAPY / DISCUSSION
2.	NGS(170) IHC	Breast	PMS2 VUS	Immunotherapy
3.	NGS (500) Gene expression	Breast TNBC PDL1	TP53, MSS TMB 5.5, (SP142) 5% , MAPK	Breast cancer young Immunotherapy
4.	NGS (170) IHC, FISH	Glioma, IDH wt 1p/19q Neg, MGMT Neg	FGFR3-TACC3	Temozolamide, Bevacizumab
5.	NGS (50) IHC	GEJ Adeno	TMB 8.8, MSS TPS 0, ARID1A mut, HER 2 -	Immunotherapy
6.	NGS (F1cDX	Cholangiocarcinoma	TMB 11/Mb, EGFR, HER2, CDK4 amp, FGFR2- Neg	Pembrolizumab
7.	NGS (500) PDL1	Gastric & Renal	HER2 amp TMB 8.7	Trastuzumab, Pembrolizumab
8.	NGS (F1cDX	Cholangiocarcinoma	TMB 11/Mb, EGFR, HER2, CDK4 amp, FGFR2- Neg	Immunotherapy
9.	NGS PDL-1	Ovary	LOH 8.6, TMB 3/Mb, TPS 0 VUS	-

Recommendations

- Open invitation to other institutions.

- Impact of molecular testing and targeted therapy study protocol – conceptualization.

- Developing local capacity for molecular testing.
- Single gene and panels.

TOPIC: PRECISION ONCOLOGY: RIGHT TREATMENT TO RIGHT PATIENT AT RIDGHT TIME

SPEAKER: VIVEK SUBBIAH, MD, ASSOCIATE PROFESSOR, DEPARTMENT OF INVESTIGATIONAL CANCER MEDICINE, EXECUTIVE DIRECTOR MADICAL ONCOLOGY6 RESEARCH, MD ANDERSON CANCER NETWORK

Background

Right now the word is engulfed in the COVID 19 era and we are seeing the advent of new variants of the virus. How do we balance and restore the balance for cancer care in the COVID era. In the midst of the pandemic, the hallmarks of cancer, new dimensions have been defined. Dr D. Hanahan has put together new, and emerging dimensions including Non-mutational epigenetic reprogramming, emerging hallmarks and enabling characteristics, unlocking phenotypic pasticity, beyond the normal hallmarks of cancer. The next decade therefore, is cut out to do this research.

How did we treat advanced metastatic cancers before the advent of the Next Generation Sequencing Era?

It was a one size fits all approach and it was a trial and error method. Astronomy has recorded remarkable growth over the years to the point that today we are able to peek into 3.5billion years into the future. How about medicine? In 2022 moved from light microscope to molecular microscope. There is need for genomic testing for cancer patients. If we are to win the war against cancer, we must gather every bit of intelligence about it.

Every two to three months, a new precision medicine is approved and there are amazing responses based on early studies using precision therapies ad patients are matched to targeted therapies.

Tumor Agnostic Treatment

- A tumor-agnostic treatment is a drug treatment that is used to treat any kind of cancer, regardless of where in the body it started or the type of tissue from which it developed
- This type of treatment an be used when the tumor has a very specific molecular alteration that is targeted by a drug likely to work

- Most cancer treatments are developed to treat a cancer that has developed in a specific organ or tissue e.g breast cancer or lung cancer
- A tumor-agnostic treatment treats any kind of cancer as long as the cancer has the specific molecular alteration targeted by the drug

What is needed for a tumor-agnostic therapy?

There are three specific characteristics:

- **Biological**
    - Established, histology-independent mechanism of action
    - Absence of histology-specific mechanisms of resistance
    - Clinical activity across histologies
    - Efficacy in adults and paediatric patients
    - Clinical safety
- **Statistical**
    - Radndomization migh5t be difficult or not feasible
    - Effective design to enable evaluation of subpopulation heterogeneity
    - Consider evaluation of single-indication phase II data prior to pooling
    - Responses are surrogate of clinical end points
- **Regulatory**
    - Validated biomarker
    - Substantial clinical activity leading to belief of superiority versus standard treatment

- Post-approval efficacy and safety monitoring

The new era of tissue-agnostic approvals have been driven by genomics; a marriage of Genomics and Immunotherapy. The FDA on May 23rd 2017 approved pembrolizumab for all solid tumors based on a genomic biomarker. It was a tissue-agnostic approval based on retrospective/ real world data

The NTRK fusion story: Picking Needles in Haystacks

- Larotrectinib for NTRK fusion adult and paediatric tumors
- FDA approval November 26, 2018
- Entrectinib for NTRK fusion adult and paediatric solid tumors
- FDA approval August 16, 2019
- Pembrolizumab for TMB>10 mutations/mb
- Adult and paediatric solid tumors
- FDA approval June 16, 2020
- Dostarlimab (anti PD1) for adult dMMR solid tumors
- FDA approved August 17 2021

The most recent approval was Selpercatinib in patients with RET solid cancers after studies showed that Selpercatinib is responsive regardless of tumor histology and regardless of line of therapy.

The current paradigm is one size fits all; the future paradigm should be customized therapy as cancers are snowflakes at the molecular level.

One of the silver linings of the COVID 19 pandemic is the way we thinki about designing precision therapies and immunotherapy. Clinical trials were designed to be clinical-trial-centric whereas COVID as a disruptor enabled us to develop patient-centric clinical trials.

Globalizing Precision Medicine

Most of the precision studies are across the Atlantic. Only recently were some studies added in Asia. However, countries such as India, regions like South America and Africa have not been part of precision medicine initiatives and this must change. We need to globalize precision medicine. Think globally and act locally.

Role of Social Media and Oncology

How will social media contribute to the globalization of medicine?

There are 4.7 million active social media users globally. Te average time spent of social media every day is 2.5hours. 10 years from now, almost 80-90% of the world's population is going to have a social media profile. Journals are being published on social media, there is greater visibility, engagement, innovative learning from across the globe.

However, we need to balance the gains versus the risks of social media such as the breach of copyright.

There are Precision Medicine Twitter Groups such as:

- KRAS = KRAS Kickers
- ROS1 = ROS1DERS
- RET = RET Renegades & RET positives
- ALK = ALK positives
- NTRK =NTRK'ers
- EGFR = EGFR Resisters
- BRAFR =BRAF Bombers

These groups are helping patients o be engaged and to seek clinical trials.

In Summary:

- Revolution in Panomics is here and growing
- Molecularly driven trials independent of histology
- Patients will drive clinical trials and drug development
- Social Media, Search and self- driven molecular testing
- Future clinical research
    - Next 1-2 years may determine fundamental pivots for how medicines are developed, giving each stakeholder an opportunity not only to adapt, but to shape the future clinical trial paradigm

TOPIC: TECHNOLOGY FOR TRAINING IN RADIOTHERAPY AND THE VIRTUALIZATIN OF THE ACCESS TO CARE CAPE TOWN PROGRAM

SPEAKER: JEANNETTE PARKES, MD, HEAD OF RADIATION ONCOLOGY AND RADIATION, GROOTE SCHUUR HOSPITAL AND THE UNIVERSITY OF CAPETOWN, SOUTH AFRICA

Background

Access To Care Cape Town was created in 2014. It was a collaboration between Varian and two Cape Town based universities: The University of Cape Town and the Cape Peninsula University of Technology.

The training was facilitated by the Groote Schur Hospital, State sector Academic Hospital in Cape Town, South Africa. The aim of the course was to create short course training programs focusing on the practical skills required for already qualified radiotherapy professionals to move from simple to more advanced techniques of radiotherapy. The reason for the course was that radiotherapy is a highly technological, fast changing medical field and Africa has traditionally lagged behind High Income

Countries in terms of implementation of technologies within radiotherapy. In 1998 when HICs were moving to 3D radiotherapy, Africa still only had 155 radiotherapy units in which 60% were covert and 2D palliation was the predominantly practiced technique.

In the 2020 when HICs are using advanced techniques radiotherapy including protons therapy, Africa has just moved to about 397 radiotherapy units of which 16% CO and only 119 of 5those machines are less than 5 years old. Training requirements in LMICs are going to be very different from what's done in HICs

Challenges faced by the A2C project included:

- Financial and clinical governance
- Infrastructure and space sharing
- Millennial training methods (blending and overlapping approach between medical physics radiation oncology and the ITTs
- Facilitate interactive hands on training
- Doing practical lessons without pressuring the department's infrastructure

In person teaching model: 3DCRT Course (2015-2020) entailed:

- Pre course E- Learning
    - LaraNara – 12 modules and tests
- Didactic Lectures
    - In classroom PowerPoint based
- Alternative Platform Teaching
    - VERT demo and fault finding
    - Strategic design/ whiteboard exercise
- Treatment Planning
    - Eclipse Laboratory
    - Teacher led sessions
    - Team assessment sessions
- Practical Demos

    - Live demos in department
    - Physics tutorials
- Mentorship
    - Email based

Phase II began in 2020 and when COVID 19 hit, the trainers had to adopt a Remote Teaching Model which included

Pre recorded training material

Zoom

- PowerPoint Voice Over
- OBS pre-recorded lectures
- Pre recorded practical videos
- Live stream Zoom
- Classroom assistant support (duplicated screen, Zoom breakout rooms)

Principles of modern Education:

The trainers thought to frame their new education program in terms of the Principles of Modern Education based on the article: Innovative Medical Education in the Digital Era which entails:

- **Interactivity-** all activities should promote interaction with students to increase curiosity and boost engagement
- **Bi-directionality-** participants should be allowed to apply their knowledge to challenging problems, with key focus on collaboration and continuous feedback between educators and students as well as peer to peer
- **Blendedness-** teaching should 8include a mix of new technologies and traditional methods to keep participants engaged
- **Transnationality-** teaching should encourage understanding of cultural diversity through international cooperation

- **Up-to-datedness-** the availability of previously recorded material should not encourage material recycling from year to year. All material should be checked and refreshed continuously to ensure relevance and current practice planning strategies

A2C Alignment with the Principles of Modern Medical Education:

Principle	**A2C Programme Response**
Interactivity	Interaction with participants is encouraged through training, utilizing Zoom polling, verbal as well as chat function discussions, quiz sessions and team presentations. In addition to Zoo Polling, Wooclap(www.wooclap.com) is used to interact with students. Individual zoom backgrounds reflecting the culture of each country encourage discussions between participants and faculties, making the online training feel more personal. Direct monitoring during contouring and planning sessions encourage discussion between teams and classroom assistants. As each assistant is only monitoring two teams, teams get individualized attention throughout the course.
Bidirectionality	Teams are given the opportunity to apply new planning or contouring skills in team assessment sessions. Every team is given the opportunity to present their case to assessors and/ or to other attending teams, allowing for review of the new skills. Teams

	present their clinical protocols and departmental design projects to faculty and other teams, offering the opportunity for discussion and feedback
Blendedness	**Synchronous Learning** is done through live streaming on the **Zoom Platform**, while **Asynchronous Learning** is supported through the LaraNara ad VULA platforms. The variation in training material as well as the unique perspective offered through the simulation software further supports bended learning
Transnationality	The expansion of the programme to include academic collaborators from the UAE and Italy allows for a variation in teaching styles as well as clinical experience. The programme has expanded to include teams from Africa, the UAE and Pakistan.
Up-to-datedness	The VULA site as well as all **training material is reviewed on an annual basis to ensure it remains relevant.**

Where are we today?

- A2C programme is currently at 71 training days per year (17d)
- 2D to 3D introduction to advanced techniques (6d/6dx2/yr)
- Top to Toe practical planning (8xweekend)
- Top to Toe SRT planning (intro +4xweekend)
- Paediatric RT for LMIC (5d)

TOPIC: LESSONS & OPPORTUNITIES FOR TELEMEDICINE IN AFRICA: INTERNATIONAL CANCER INSTITUTES'S PILOT PROGRAM

SPEAKER: FREDRICK CHITE ASIRWA, MD

Background

Cancer burden in Sub-Saharan Africa is rapidly growing. There is a huge gap in capacity for cancer screening, diagnostics, therapeutics, palliative, survivorship care and research to mitigate the ravaging effects of cancer in the continent.

Method

ICI established various digital platforms for training, clinical care service provision, quality assurance and control and research in cancer, geared towards improving cancer- related outcomes. These included:

- Multidisciplinary Virtual TumorBoards
- Teleclinics and Tele-mentoring support for clinicians
- Digital pathology using Upath software for collaborative centres
- 8-10 week virtual Preceptorships in breast cancer, cervical cancer, prostate cancer, cancer registry
- Electronic ICI medical records

Results

From 2019 – 2022:

- More than 3000 multi – disciplinary health care professionals have been trained through the preceptor-ship programs across SSA (40% physicians/ clinicians, 32% nursing, 21% non medical HCPs)
- 12 counties participate in the telemedicine program
- Over 300 VTBs have been held with core discussions (<75%) about diagnostics, choice of therapeutics/ treatment ordering and supportive care

- 80% of the participants report improvement in quality care in their centres
- 96% would recommend digital platform in cancer care to improve capacity, access and quality of care in SSA

Conclusion

There is a huge untapped potential for digital innovations and telemedicine in cancer care and control in SSA.

More support for these platforms is urgently needed for scale up

DAY ONE BREAK OUT SESSIONS- A1 (BREAST CANCER)

Roche Sponsored Session

TOPIC: TREATMENT OPTIONS IN MTNBC AND ROLE OF IMMUNOTHERAPY

SPEAKER: PROF. NICHOLAS ABINYA-ONCOLOGIST

Background

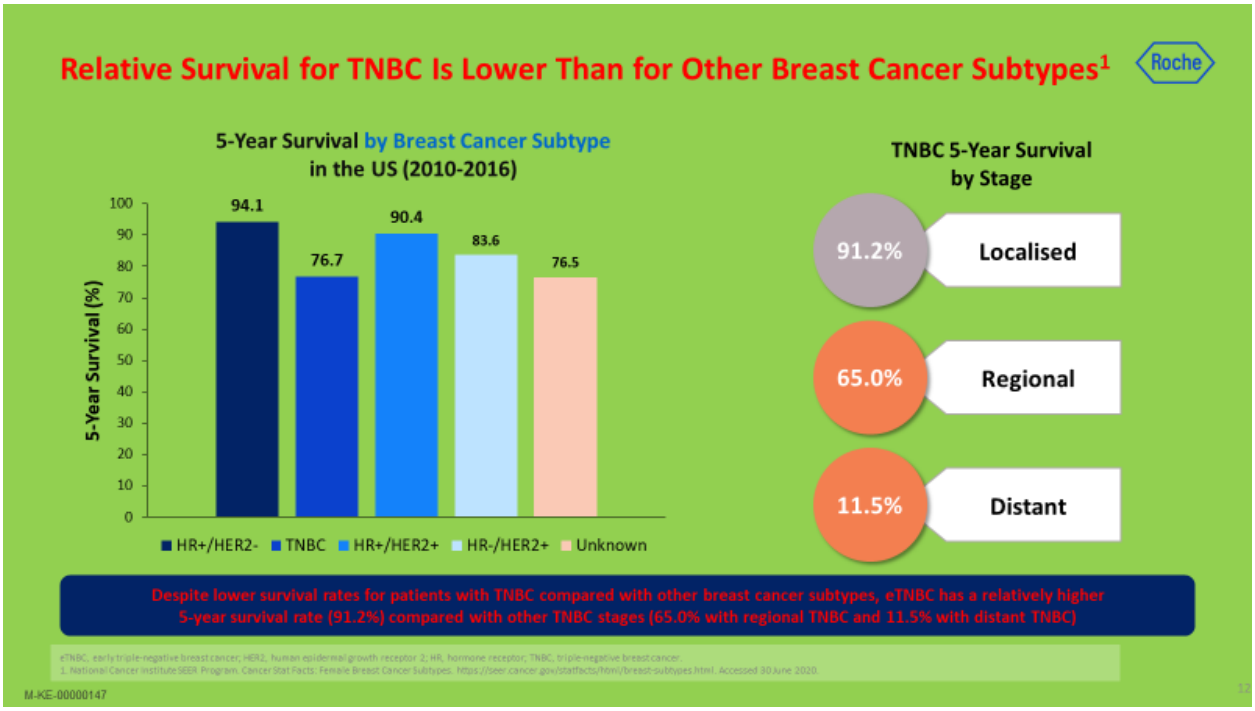
Triple negative breast cancer TNBC is a collection of breast cancers lacking expression of ER, PR or Her2 amplification. They represent about 15% of cancers, frequently affect young women. In the US, they are more frequent among women of African and Hispanic descent. Generally, patients with TNBC have higher risk of both local and distant relapse. Metastasis is more likely to occur in the brain and lungs, rather than bone as compared to other subtypes.

Prof. Nicholas Abinya shared contents of a study on *Treatment options in metastatic triple negative breast cancer and role of immunotherapy* which found that the bigger majority of metastases from TNBC occur within the first 3 years following diagnosis.

Findings

- The study found out the bigger majority of metastases from TNBC occur within the first 3 years following diagnosis.
- Patients who have not relapsed during this time have similar survival rates as do patients with ER+ breast cancer.
- There is a well established association between deleterious BRCA1 mutations and the risk of developing TNBC.

- Despite the rather aggressive clinical behavior of TNBC, apparently 30% of patients benefit from chemotherapy, a major component of systemic treatment.
- Relative Survival for TNBC is lower than for other breast cancer subtypes
- Patients with TNBC have poorer survival rates than other breast cancer subtypes

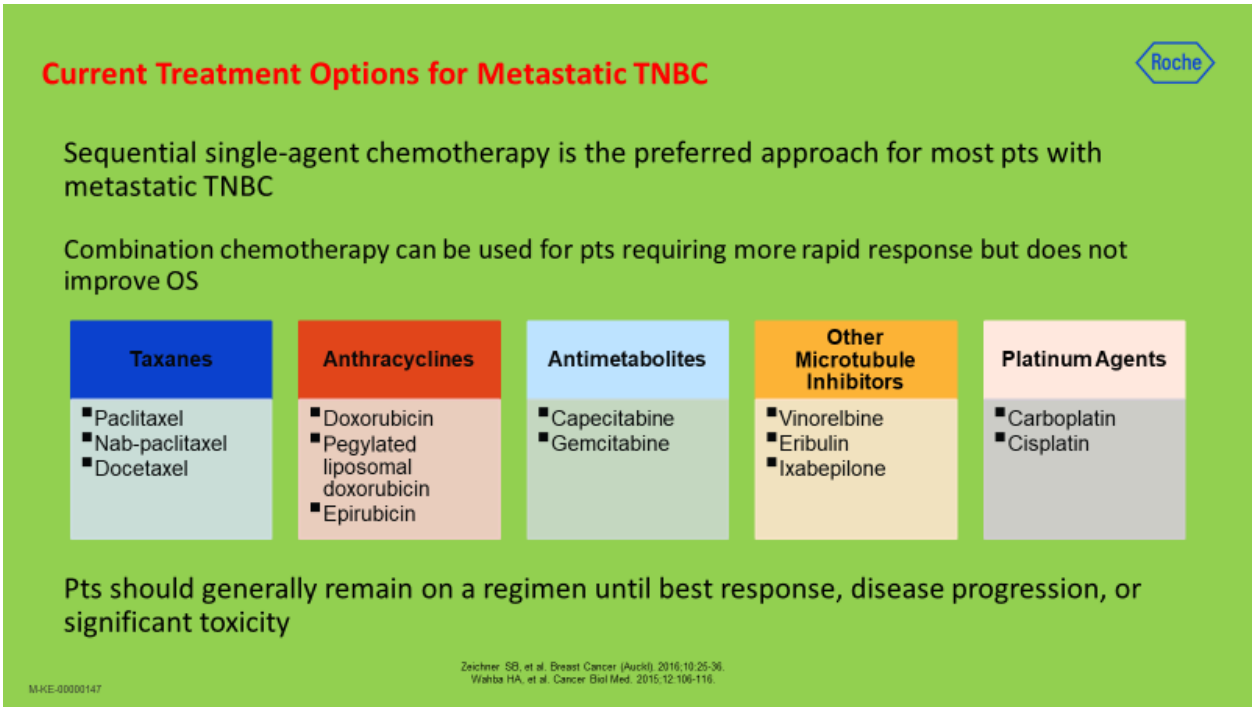


TNBC trends

- The bigger majority of metastases from TNBC occur within the first 3 years following diagnosis.
- Patients who have not relapsed during this time have similar survival rates as do patients with ER+ breast cancer.1
- There is well established association between deleterious BRCA1 mutations and the risk of developing TNBC.

Current Treatment Options for Metastatic TNBC

- Sequential single-agent chemotherapy is the preferred approach for most pts with metastatic TNBC
- Combination chemotherapy can be used for pts requiring more rapid response but does not improve OS
- Patients should generally remain on a regimen until best response, disease progression, or significant toxicity



Recommendations

- TNG MBC has had poor prognosis over the years, with chemotherapy as the mainstay of management.
- For BRCA mutated cases addition of PARP inhibitors has additional benefit.
- ICIs have only modest single agent activity in mTNBC, but some responses are durable.
- Chemo/ICI combos have significant PFS and OS benefits.

- Addition of CIT is a newer strategy that holds promise in improving overall outcome in mTNBC

TOPIC: AGE ASSESSMENT OF BREAST CANCER AND BREAST CANCER ANOMALIES.

SPEAKER: DR. HILDA MUBISI CLINICAL ONCOLOGIST

Background

Female breast cancer is the most commonly diagnosed cancer, with an estimated 2.3 million new cases (11.7%), and the leading cause of cancer death in women worldwide. In Kenya, it is ranked as 1st in incidence (16.1%) and 2nd in mortality (11.5%). In Kenya, women with average risk of developing breast cancer are encouraged to start screening at 25 years similar to those women in the high-risk population (KENYA NATIONAL CANCER SCREENING GUIDELINES)

Dr. Hilda Mubisi shared insights form an assessment she conducted of an AMPATH breast cancer screening programme in the former Rift Valley and Western provinces in Kenya between 2017 and June 2022. *"Our screening programme did not have any cutline. We invited anyone who wanted to come. Imaging was done for any patient found to have a breast mass. Some were found to have abnormal tissues but not all were cancerous. "*

Data Sources and Methods

- Screening Data was collected from facilities in the Rift valley and western region affiliated to Ampath.
- Screening was done basically through CBE as the primary tool. Those found with breast masses underwent imaging/biopsy/histology
- Patients data was collected from MTRH and Kakamega county General Hospital cancer centres.
- Tabulation and graphic visualization of the data was then drawn.

Findings

In total, 5267 patients aged 25 years were screened. 407 patients returned abnormal results. Seven patients undergoing treatment in MOTRH and Kakamega general Hospital

Screening data from the greater western region

	Abnormal		Abnormal Total	Normal		Normal Total	Grand Total
Row Labels	F	M		F	M		
25<	403	4	407	4787	73	4860	5267
25-34	361	9	370	11543	99	11642	12012
35-44	343	13	356	10367	100	10467	10823
45-54	279	4	283	6749	93	6842	7125
55-64	204	10	214	3229	92	3321	3535
65-74	92	9	101	1060	89	1149	1250
75-84	45	7	52	226	30	256	308
84>	12	2	14	50	4	54	68
Grand Total	1739	58	1797	38011	580	38591	40388

Breast Cancer Clinic Data-MTRH& Kakamega

Year	25<	25-34	35-44	45-54	55-64	65-74	75-84	85>	Total	Female	Male
2017	1	18	40	30	39	11	1		140	135	5
2018	2	26	81	91	70	49	24	5	348	288	60
2019	3	32	72	68	78	39	20	2	314	250	63
2020	0	36	67	60	60	31	16	1	271	227	44
2021	0	30	69	39	35	33	13	2	221	175	46
2022 (Jan-Jun)	1	14	30	27	25	22	15	1	135	101	33
Grand Total	7	156	359	315	307	185	89	11	1429	1176	251

Conclusion

- In Kenya there are breast cancer patients below 25 years
- In Kenya self-breast and clinical exams are still valid tools in early detection of breast cancer. A good number of patients' present with breast masses that could easily be palpated.
- Screening guidelines silent on prevalence of breast cancer among women below 25 years.
- Consider early screening of women below 25 years.
- More data from other regions in Kenya needed

TOPIC: THE IMPACT OF PRESENTATION DELAY AMONG YOUNG EGYPTIAN BREAST CANCER PATIENTS

SPEAKER: ABEID OMAR, MD CLINICAL ONCOLOGIST

Background

Breast cancer prevalence among young women is much higher in Sub Saharan Africa compared to the rest of the world. The standard age for Breast Cancer screening mammogram is from 40 years. Young women tend to have dense breasts, making it difficult for mammogram screening. Thus, women tend to have presentation delay. Presentation delay is defined as more than 90 days from the time the patient noticed the breast changes until when she presented to HCW

The impact of presentation delay

- Young patients are associated with having aggressive breast cancer

- Moreover, they present with large tumours and at a more advanced stages compared to post menopausal women, due to presentation delay
- Presentation delay has been associated with poorer survival
- However, little is known on the impact of presentation delay among the young Egyptian women

AIM and Methodology

- To determine the incidence of presentation delay
- The impact of presentation delay on clinicopathological characteristics
- To determine the treatment patterns in young BC
- The impact of presentation delay on recurrence rates and DFS

Methodology

Inclusion criteria

- Women diagnosed between 2008 and 2017
- Age: 18 – 40 years
- Location - Two centers in Alexandria, Egypt

Exclusion criteria

- Patients diagnosed earlier but developed recurrence in the study period
- Patients missing most crucial data
- Presentation delay defined as greater 90 days from breast changes to presenting to hospital

Findings

Incidence of Presentation delay

- 60% (405 out of 669) patients presented late
- The median time to presentation was 8 months (0.5- 48)
- The family history of breast ca did not have an impact on presentation delay (24% vs 20.9%; p = 0.14)

Recurrence rates

- The median follow-up was 4 years
- Early: 81 events (29.6%)
- Delayed: 137 events (35.3%)
- Percentage: 0.08

Conclusion

- Majority of the patients had presentation delay
- Presentation delay was associated with large tumour size and stage

- Patient presented late underwent more MRM
- Presentation delay was associated with higher recurrences and poorer DFS
- There is an unmet need we put strategies to curb this

TOPIC: METASTATIC BREAST CANCER IN KENYA: SURVIVAL, PROGNOSIS AND MANAGEMENT AT A TERTIARY REFERRAL CENTRE MBC IN KENYA

SPEAKER: DR MWONGELI MATHEKA

Background

Breast cancer incidences are lower in Africa but mortality is higher. The higher mortality rate is advanced disease at diagnosis and inadequate treatment. Up to 77% of patients in Africa are diagnosed with breast cancer at stage three and stage four disease. There is little data on survival outcomes of breast cancer patients in Africa and even less of those with metastatic breast cancer. Studies have reported widely variable 5-year survival rates of metastatic breast cancer of between 8% to 39%. These studies have been limited by high rate of loss of follow up and inadequate treatment of metastatic disease. Dr Mwongeli Matheka shared results of a study conducted at Aga Khan University Hospital in Nairobi on survival outcomes and prognostic factors affecting survival in patients with metastatic breast cancer.

Method

It was a retrospective study at the facility which has a dedicated breast service where patients have access to multi-disciplinary care.

Patients diagnosed and treated for metastatic breast cancer at the hospital between January 2009-December 2017 with complete records were included in the study.

Survival data collected was progression free survival: this is the time between first diagnosis of breast cancer and diagnosis of distant metastasis in patients presenting with non-metastatic disease.

Survival: time between diagnosis of first metastasis and death.

Overall survival: time between first diagnosis of breast cancer and death

Findings

131 patients included in the study

Median age of diagnosis of breast cancer was 47 years

55 which is 42% of patients were post-menopausal

76 which is 58% were pre-menopausal

2.3% of the patients got surgery, 63.4% chemotherapy, 42.7% chemotherapy, 57.3% hormonal therapy and 6.1% Herceptin

3-year survival rate 31.3%, 5-year survival rate 10.7%

Median survival was 22 months and median follow up period 35 months

Conclusion and recommendation

Survival rates for patients diagnosed with MBC was lower compared to studies from western countries but higher than studies from Sub-Saharan Africa.

Survival rates were similar to those of African American women.

Luminal A, molecular subtype was found to be a positive prognostic factor and metastases to the liver or brain were found to be negative prognostic factors.

Older age, hybrid tumours, size of tumour, adjuvant chemo and site and number of metastasis are some of the factors affecting survival.

It is important to know the survival outcomes of patients with metastatic breast cancer in our setting and the clinical and pathological factors affecting prognosis.

TOPIC: CLINICAL MANAGEMENT OF LYMPHEDEMIA IN WESTERN KENYA.

SPEAKER: ROSEMARY LUSIKE NURSE ONCOLOGY DEPARTMENT AT KAKAMEGA REFERRAL HOSPITAL

Background

Secondary lymphedema is one of the most distressing complication of breast cancer treatment. It is characterized by lymphatic drainage impairment that increases stasis of fluid in the skin and subcutaneous tissues. Lymphedema symptoms vary depending on the severity but include swelling, heaviness, tightness, and numbness among others. When severe, these symptoms significantly impact the person's ability to perform tasks and without treatment the condition progresses with risk of serious complications such as necrosis and infection. Globally it's estimated that 28% to 38% of breast cancer survivors develop lymphedema, the five-year incidence ranges from 43% to 94% that affects one in five breast cancer patients.

Lymphedema is on the increase in law income countries like those of the sub–Saharan Africa. Early and accurate diagnosis is crucial for Proper management of lymphedema.

Lymphedemia is a complication of Breast cancer. It is on the increase in sub-Saharan Africa, with failure to provide care according to standards.

Healthcare providers' knowledge ranges from low to moderate. Training on management should be made available and accessible for better understanding. Follow up of breast cancer patients to prevent them from getting Lymphedemia.

Objectives

Access healthcare providers' competence in management of lymphedema in Bungoma, Kakamega, Siaya, Bomet and Kisumu Counties.

Material and method

- Data was collected using self-Administered questionnaires, observation checklists and focused group discussion which all parameters to assess knowledge and skills and strategies had used in lymphedema management.
- 192 health care providers were randomly selected to participate in the study. They included nurses, medical officers, and clinical officers among others who had worked in their centres more than six months and were willing to participate in the study. Excluded were those who declined to sign the consent.

Findings

- The results showed significant difference in performance between males and females with the means of 62.7 and 58.4 respectively.
- Bivariate analysis showed professional qualification as the most significant with doctors and clinical officers performing better than nurses (OR: 17.7CI; 8.2-27.2, P =0.001, OR; 16.6; CI 5.1-8.2 P value=0.001).
- Age over 50 years were 6.3 times more likely to attain the pass mark (OR: CI; 1.2-30.0: P value =0.026) Cronbach's alpha showed the correlation between those who agreed had knowledge of lymphedema and those who did not agree as 0.9011 which

means they had an overall agreement that they were knowledgeable. About 70% of the respondents demonstrated good practical skills in history taking but critical information about patient education and follow up interventions were not practised.

- Findings from focused group discussion showed a deficit in knowledge by failure to clearly define lymphedema which must include definition causes risk factors and signs and symptoms.

Conclusion and Recommendation

Lusike said her study which involved a knowledge test, skills assessment and focused group discussion revealed that *"Healthcare provider's knowledge ranged from low to average and although most respondents demonstrated good practice skills they failed in patient education and follow up interventions that were very important."*

The study recommends training opportunities on lymphedema management should be made available and accessible for healthcare providers to better understand lymphedema management and provide better quality patient care

TOPIC: SURGICAL MANAGEMENT OF RECTAL CANCER

SPEAKER: DR. TERRY ZWIEP-WESTERN UNIVERSITY CANADA

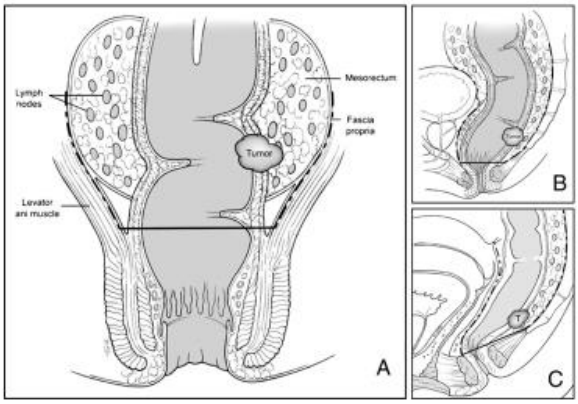
Background

Dr. Terry Zwiep in her study sought to establish;

- Principles of the TME dissection
- Surgical management of early rectal cancers
- Surgical management in the era of total neoadjuvant therapy

- Lateral pelvic lymph node management
- Principles of pelvic exenteration

TME Dissection



J Gastrointest Surg (2014) 18:1358–1372
DOI 10.1007/s11605-014-2528-y

Western

Good surgery and sticking to dissection

She looked at early rectal cancers and risk factors as well as presented findings of a NEO trial in which phase 1 involved 75-500 patients.

NEO Trial

- Phase II trial
- T1-3N0 patients with low to mid rectal cancers included
- 3 months of FOLFOX or XELOX followed by TAMIS/TEMS
- 33/58 patients had downstaging to ypT0/1N0 on final pathology
- 7/10 patients who proceeded to TME had a complete pathological response
- 1 and 2 year locoregional relapse-free survival was 98% and 90%

Western

Early Rectal Cancers

- Risk factors for lymph node metastases in T1 cancers
  - LVI
  - Tumour budding
  - Depth of invasion
  - Size of invasive component
  - Grade (differentiation)
- High risk T1 or T2 – TME preferred, chemoradiation may be considered if patient not amenable to TME

Western

Dr. Zwiep also discussed a study on lateral lymph node dissection published in the *European Journal of Surgical Oncology.*

Lateral lymph node dissection

European Journal of Surgical Oncology 48 (2022) 1475–1482

Contents lists available at ScienceDirect

European Journal of Surgical Oncology

journal homepage: www.ejso.com

Review Article

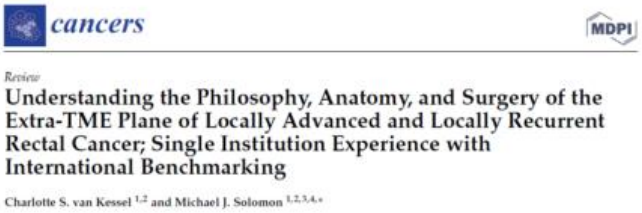
Systematic review and meta-analysis of long-term oncological outcomes of lateral lymph node dissection for metastatic nodes after neoadjuvant chemoradiotherapy in rectal cancer

Hidde M. Kroon [a, b, *], Lotje A. Hoogervorst [a], Nicole Hanna-Rivero [a], Luke Traeger [a, b], Nagendra N. Dudi-Venkata [a, b], Sergei Bedrikovetski [a, b], Miranda Kusters [c], George J. Chang [d], Michelle L. Thomas [a, b], Tarik Sammour [a, b]

Western

T4b rectal cancers

- Discuss at multidisciplinary rounds
- Use of neoadjuvant therapy for downstaging
- Team approach to pelvic exenterations
  - Gynecology
  - Plastic surgery
  - Urology
  - Orthopedic surgery
  - Vascular surgery



cancers

MDPI

Review

Understanding the Philosophy, Anatomy, and Surgery of the Extra-TME Plane of Locally Advanced and Locally Recurrent Rectal Cancer; Single Institution Experience with International Benchmarking

Charlotte S. van Kessel [1,2] and Michael J. Solomon [1,2,3,4,*]

Western

TOPIC: EXPERIENCE WITH CANCERS OF UPPER GASTROINTESTINAL TRACT FROM A SINGLE ONCOLOGY SERVICE IN NAIROBI.

SPEAKER: PROF. NICHOLAS ABINYA – ONCOLOGIST.

Background

- Cancers of the oesophagus and stomach are individually among top five cancers in both men and women in Kenya.
- Treatment:

  Surgery

  Chemotherapy

  Chemo/radiotherapy

  Radiotherapy

  Immunotherapy.

Methods

- Setting: Single oncology service at the Nairobi Hospital.

Patients with cancers of the oesophagus,GEJ or stomach stages II-IV, ECOG PS ≤ 1 had neoadjuvant chemotherapy.

- Those who were CT negative after 4-6 courses underwent surgical resection between 2016-2022.
- Because of small numbers, cases were not categorized according to anatomic site for survival analysis.
- All cases without distant metastases were categorized as early, the rest metastatic.

In this study, Prof. Abinya and his colleague Maurice Muhinga

Sampled patients with the following characteristics;

- 61 patients were included:
- 28 males and 33 females.
- Median age for males was 57, range 25-83 years.
- Median age for females was 60, range 25-87 years.
- Site specific cancers were 28 for oesophagus, 26 for stomach and 7 for GEJ.

"*Unfortunately, only a small percentage managed to come for treatment, only 26 of the patients received any form of treatment. Some of course were patients who were terminal. Of those only 13 completed planned chemotherapy. Of those only 9 had non-metastatic disease, three had metastatic disease and one was not clearly distinct. The rest were seen only once and never returned due to a number of reasons; inability to pay for treatment, fear of treatment complications and some decided to seek better treatment elsewhere.*"

Conclusion

- Defaulter rates were high.
- Various reasons apply including:

  - inability to finance the treatment

- fear of treatment complications

- lack of trust in services provided.

Patients treated with full chemotherapy followed by radical surgery are likely to achieve better overall survival.

Subgroup Treated

Subgroup Description

- Only 26 (42.6%) of the patients received any form of treatment.
- Of those, only 13 completed planned chemotherapy.
- Of these 9 had nonmetastatic disease, 3 had metastatic disease, 1 was not clearly staged.
- The rest were seen only once and never returned for various reasons including inability to pay for treatment, fear of treatment complications and seeking better treatment elsewhere.
- Stages were not site stratified for those who were treated because of small numbers.

Frontline Chemotherapy

Protocol	Numbers
FLOT	4
Carbo/CDDP + Docetatel	6
CAPOX	1
mFOLFOX6	1
Capecitabine/CDDP	1
Total	13

TOPIC: RESECTION OF SOLID LARGE HCC

KARAN GANDHI - HPB Surgeon, Aga Khan University Hospital, Nairobi

Background

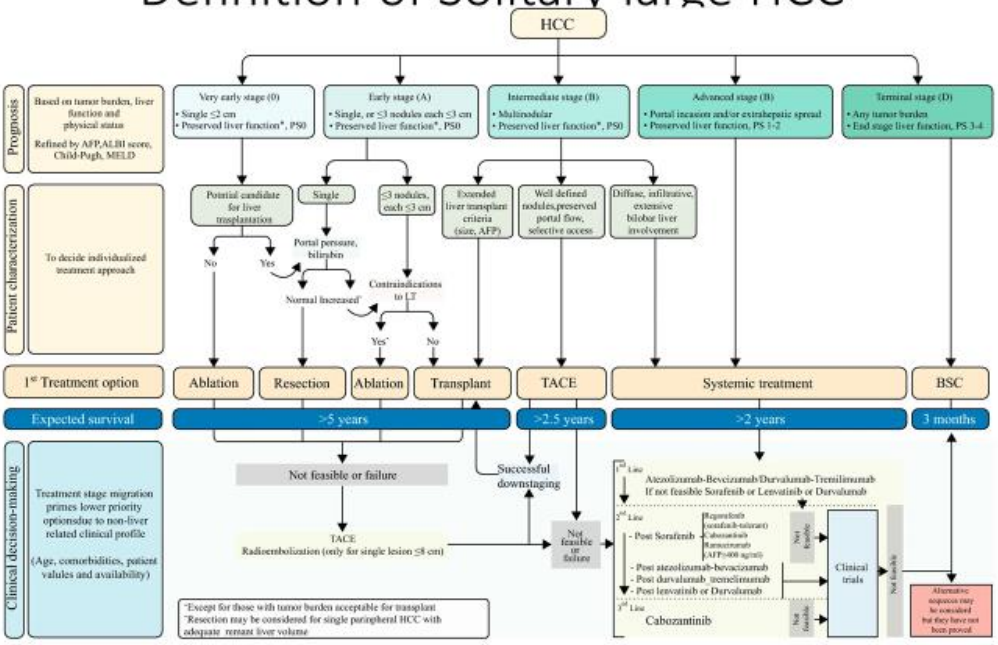
Hepatocellullar Carcinoma (HCC) is the fifth most common cancer globally accounting for 90% of all primary liver cancers. It is the fourth most common cause of cancer-related deaths. HCC has a 5-year overall survival (OS) of 10–15% mostly due to late diagnosis. 5-year OS reaches 50–70% when diagnosed early (BCLC 0, A, B).

Dr. Karan Gandhi in his submissions to delegates observed that in sub-Saharan Africa "*Many cases emerging and younger patients have more*

advanced disease at presentation. If patients present early and they are not treated survival is 13 months."

Dr. Gandhi defined solitary large HCC and proceeded to give a comparative survival analysis of prognosis of treated and untreated HCC.

Definition of Solitary large HCC



Prognosis of untreated vs treated HCC

Median survival as per BCLC stage

- Stages 0/A 13.4 months
- Stages B 9.5 months
- Stages C 3.4 months
- Stages D 1.6 months

- Liver resection* >70% 5 year survival
- Local ablation* >70% 5 year survival
- Transplantation* >75% 5 year survival
- TACE 20 mo improved survival
- Sorafenib 2.9 mo improved survival
- Treated within the Barcelona criteria

Guglielmi A, et al. World J Gastroenterol.2014;20:7525-7533
Yao FY. American Journal of Transplantation 2008;8:1982–1989
Tiong L, et al. British Journal of Surgery 2011;98:1210–1224
Llovet JM, Bruix J. Hepatology 2003;37:429–42
Llovet JM, et al. N Engl J Med 2008;359:378-90

During his session, Dr.Gandhi also shared two studies on resection of large Hepartocellular Carcinoma.

Solitary Large Hepatocellular Carcinoma

A Specific Subtype of Hepatocellular Carcinoma With Good Outcome After Hepatic Resection

Lian-Yue Yang, PhD, MD, Feng Fang, MD, Di-Peng Ou, MD, Wei Wu, MD, Zhi-Jun Zeng, MD, and Fan Wu, MD

- January 1992- December 2002, single centre
- 481 patients with HCC who received hepatic resection
- SLHCC (group A, n 260) SHCC (group B, n 135) and NHCC (group C, n 86)
- Clinical and pathologic characteristics of SLHCC and SHCC similar, except tumor necrosis and size
- SLHCC- significantly longer operative time, higher intraoperative blood loss/ transfusion, and higher postoperative morbidity than SHCC
- 2 groups similar in duration of hospital stay and overall morbidity
- OS and DFS in group A and group B similar and significantly better than group C.
- Multivariate analysis- intraoperative blood transfusion and vein invasion independently significant for OS of patients with HCC.

Annals of Surgery • Volume 249, Number 1, January 2009

PAPER

Critical Appraisal of the Clinical and Pathologic Predictors of Survival After Resection of Large Hepatocellular Carcinoma

Timothy M. Pawlik, MD, MPH; Ronnie T. Poon, MD; Eddie K. Abdalla, MD; Daria Zorzi, MD; Iwao Ikai, MD; Steven A. Curley, MD; David M. Nagorney, MD; Jacques Belghiti, MD; Irene Oi-Lin Ng, MD; Yoshio Yamaoka, MD; Gregory Y. Lauwers, MD; Jean-Nicolas Vauthey, MD; for the International Cooperative Study Group on Hepatocellular Carcinoma

- Retrospective study, 300 patients, tumour ≥10cm
- 5% perioperative mortality rate
- Median follow-up 32 months, median survival was 20.3 months, and 5-year actuarial survival rate was 27%
- Four clinical factors were significant predictors of poor survival:
- AFP ≥1000 ng/mL, multiple tumor nodules, presence of major vascular invasion and presence of severe fibrosis

Arch Surg. 2005;140:450-458

Findings

Current indications for Liver Resection in HCC were as follows;

- Cirrhotic vs non-cirrhotic- Probably the most important consideration
- Underlying liver disease and aetiology also key
- Hep. B, ETOH, NASH/NAFLD, Fibrosis/ Inflammation. AFP level
- Resection- treatment of choice in non-cirrhotic livers
- Larger, more complex resections, acceptable post-op morbidity rates
- 5 Year OS approaches 50% (Dependent on comorbidities and PS)
- Cirrhotic liver- Initially Child-Pugh A (compensated) without PHT
- OS similar to LT (74% vs 69%)

Conclusion

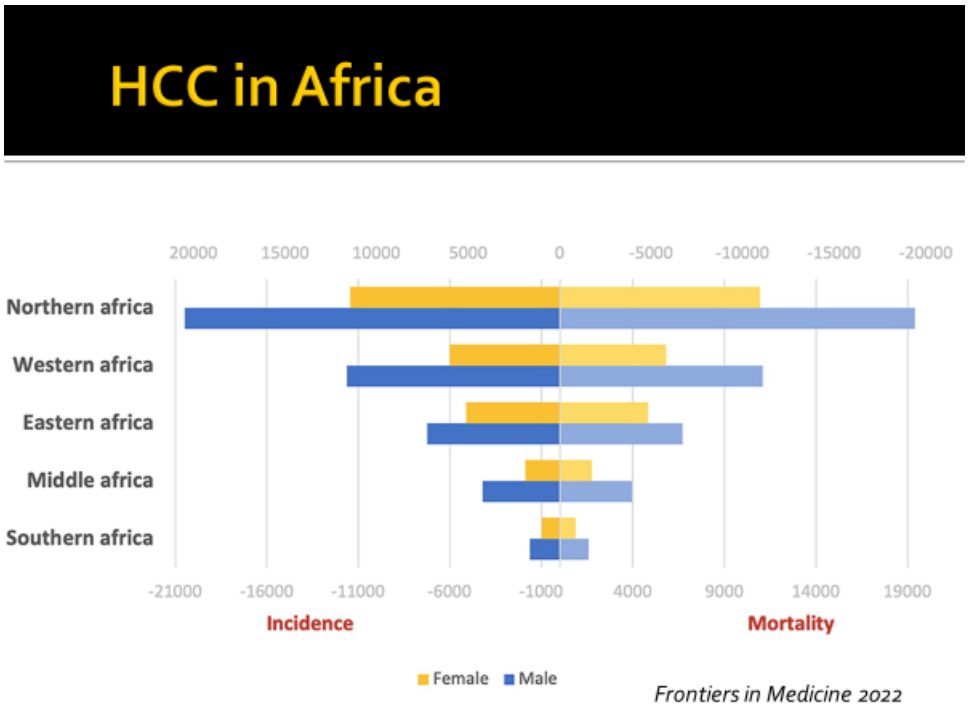
- No one size fits all
- MDT discussion vital
- Appropriate stage- perhaps new BCLC
- Consideration of multiple factors- Age, PS, Cirrhosis/ underlying liver disease and aetiology, Tumour size, AFP
- Multimodality treatment
- Stick to the principles of liver resection
- Metro-ticket model can be translated to resection

TOPIC: HCC IN SUB-SAHARAN AFRICA: MANAGEMENT OF HCC IN LOW RESOURCE SETTING OPPORTUNITIES AND STRATEGIES

SPEAKER: SULAIMAN NANJI, MD PHD

Background

Dr. Sulaiman Nanji a surgeon -scientist and his colleague Dr. H. McGuire Chair in Surgery at Queen's University conducted the study. Dr. Nanji averred that Hepatocellullar Carcinoma (HCC) is disproportionately represented in the African continent. Asia has the highest rates worldwide followed by Africa and together they represent 80% of the global burden. In Africa, HCC is the 4th most common cancer and 2nd leading cause of cancer deaths in men and 4th leading cause of deaths in women.



Findings

HBV most common etiology

- 20% of population in SSA are infected with HBV
- 80% acquired before the 1st decade of life
- Chronic asymptomatic infection resulting in HCC +/- cirrhosis
- HCC presents in late 30s and early 40s
- Vaccination can prevent HCC!

Other viral etiologies

- HCV less common in SSA, highest in North Africa
- HCV often associated with advanced cirrhosis
- No vaccine against HCV
- Together HBV/HCV account for > 80% of HCC
- HIV co-infection

Other etiologies

- Alcohol
- NAFDL
- Aflatoxin

Recommendations

Primary prevention strategies

1. Aflatoxin elimination

- Training for rural farmers
- Regulation to reduce aflatoxin contaminated crops

2. Lifestyle modification

3. Vaccination against HBV

- WHO global health sector strategy for viral hepatitis
- Widespread Hep B vaccine in EPI programs
- Birth dose vaccination is a critical gap

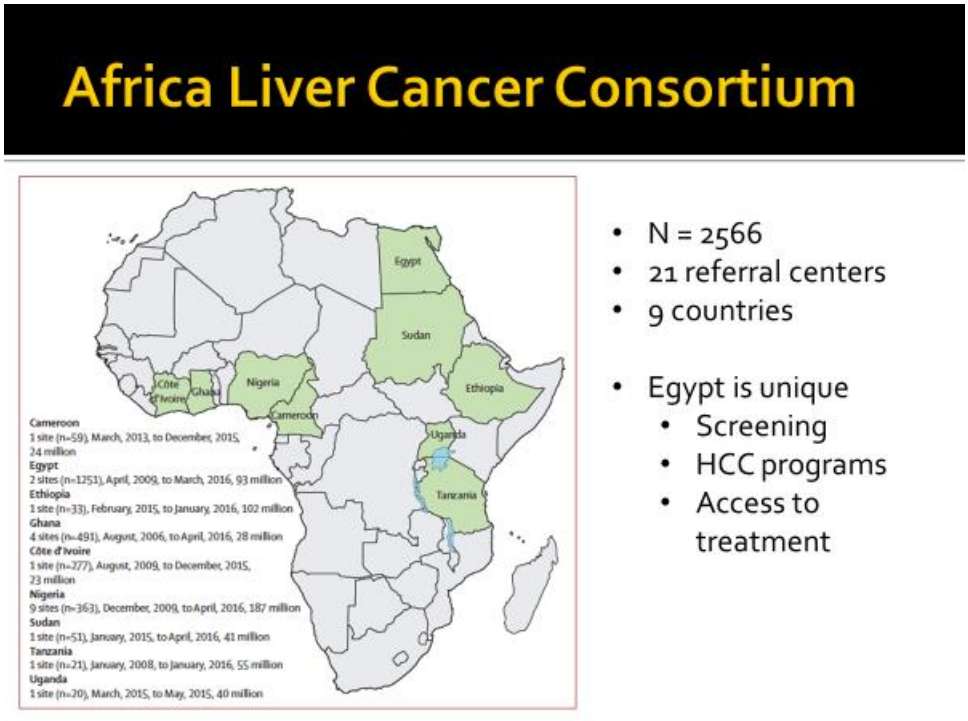
Secondary prevention

Screening programs

- Identify high-risk populations
- Screen and treat programs
- Antiviral treatment for HBV/HCV
- Adoption of national HCC surveillance programs
- Abdominal ultrasound +/- AFP

"Accessibility to ultrasound needs to be a priority in terms of the national cancer control plans if we want to be able to identify the patient population and provide required treatment. Egypt has implemented widespread screening and developed programmes that have capacity to treat people with Hypertocellular Carcicoma."

Dr. Nanji also referred to a study published in the *African Network for Gastrointestinal and Liver Diseases* on characteristics, outcome and management of patients with Hypertocellular Carcicoma in Africa: A multi-country observational study from the Africa Liver Cancer Consortium.



Characteristics, management, and outcomes of patients with hepatocellular carcinoma in Africa: a multicountry observational study from the Africa Liver Cancer Consortium

Ju Dong Yang, Essa A Mohamed, Ashraf O Abdel Aziz, Hend I Shousha, Mohamed B Hashem, Mohamed M Nabeel, Ahmed H Abdelmaksoud, Tamer M Elbaz, Mary Y Afihene, Babatunde M Duduyemi, Joshua P Ayawin, Adam Gyedu, Marie-Jeanne Lohouès-Kouacou, Antonin W Ndjitoyap Ndam, Ehab F Moustafa, Sahar M Hassany, Abdelmajeed M Moussa, Rose A Ugiagbe, Casimir E Omuemu, Richard Anthony, Dennis Palmer, Albert F Nyanga, Abraham O Malu, Solomon Obekpa, Abdelmounem E Abdo, Awatif I Siddig, Hatim M Y Mudawi, Uchenna Okonkwo, Mbang Kooffreh-Ada, Yaw A Awuku, Yvonne A Nartey, Elizabeth T Abbew, Nana A Awuku, Jesse A Otegbayo, Kolawole O Akande, Hailemichael M Desalegn, Abidemi E Omonisi, Akande O Ajayi, Edith N Okeke, Mary J Duguru, Pantong M Davwar, Michael C Okorie, Shettima Mustapha, Jose D Debes, Ponsiano Ocama, Olufunmilayo A Lesi, Emuobor Odeghe, Ruth Bello, Charles Onyekwere, Francis Ekere, Rufina Igetei, Mitchell A Mah`moud, Benyam Addissie, Hawa M Ali, Gregory J Gores, Mark D Topazian, Lewis R Roberts, and the Africa Network for Gastrointestinal and Liver Diseases

Dr. Nanji also shared findings of a pilot study published on the *International Journal of Infectious Diseases* on screening for Hypertocellular Carcicoma among adults with HIV/HBV co infection in Zambia. The researchers found out 2% of patients co-infected with HIV/HBV had significant liver lesions.

Recommendations

- Improve birth dose vaccinations
- Integrate screen and treat interventions within existing HIV/TB/malaria programs
- Decentralize US and integrate into front-line facilities
- Develop surgical and IVR capacity for treatment of early, curative HCC
- Asia has the highest rates of HCC followed by Africa. In Africa it is the number one among men. When you are diagnosed there is very little chance of cure. There's dismal survival. The biggest driver is the Hepatitis B virus. Aflatoxin elimination a consideration, training and educating farmers about storage, lifestyle modification to avoid diabetes and alcohol consumption.

EXPERT SESSION

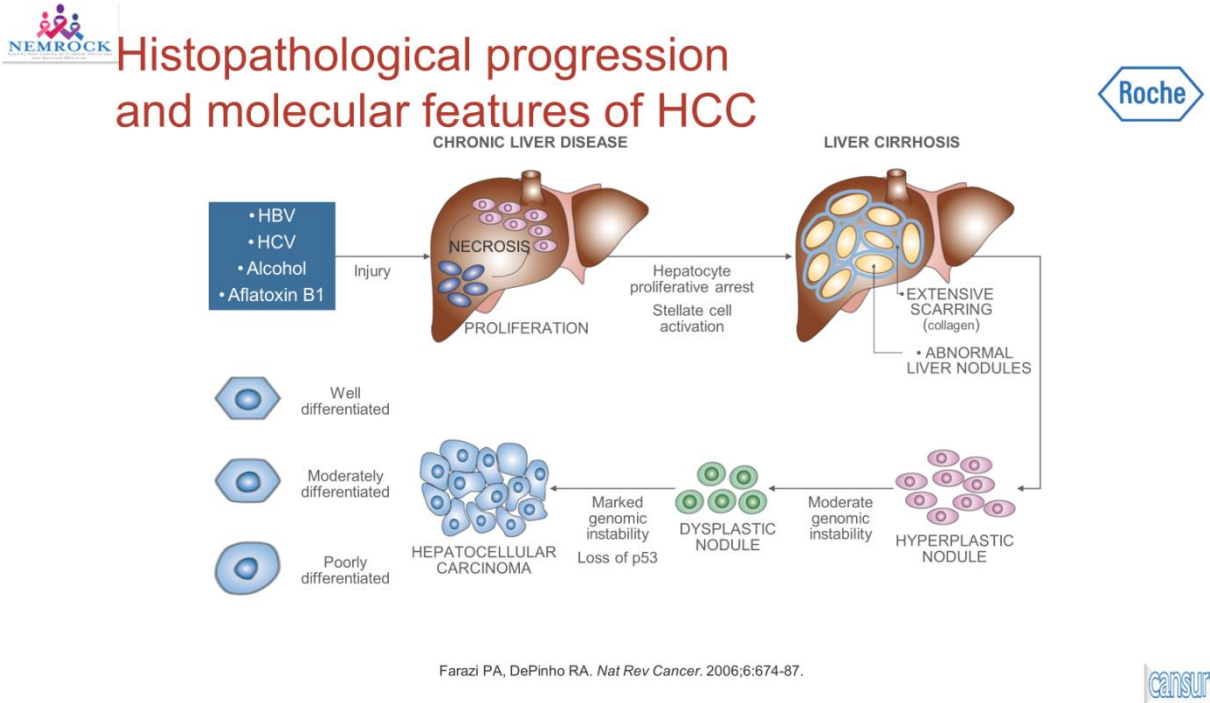
ROCHE SPONSORED SESSION

TOPIC: CURRENT STRATEGIES AND RECENT ADVANCES IN MANAGEMENT OF ADVANCED HCC

SPEAKER: MOKHTAR MOHSEN MD- CAIRO UNIVERSITY

Background

Hepatocellullar Carcinoma (HCC) risk factors include hepatic injury such as cirrhosis, often due to HBV or HCV infection. According to Dr. Mohsen 90% of HCCs are associated with a known underlying risk factor. 80% of HCC cases develop in cirrhotic livers. Chronic viral infection including HBV, HCV also contributes to HCC. He cited other factors as; aflatoxin exposure, Heavy alcohol consumption, diabetes, being overweight, and tobacco smoking.



Farazi PA, DePinho RA. *Nat Rev Cancer*. 2006;6:674-87.

Importance of tumor staging in HCC

TREATMENT DECISIONS	TRIAL DESIGN
•Prognosis of solid tumors is generally related to tumor stage at presentation[1] •In HCC patients, prediction of prognosis is more complex[1] –Underlying liver function also affects prognosis •Tumor stage guides clinical treatment decisions[1] •Staging is very important so that the right therapy is chosen[2] •Currently, there is no worldwide consensus on the use of any one staging system in HCC[1]	•Staging is essential for comparing different therapeutic trial groups and studies[1] •Most major trials of HCC therapy have chosen the BCLC staging system[1]

BCLC, Barcelona Clinic Liver Cancer.
1. Bruix J, Sherman M; American Association for the Study of Liver Diseases. Management of hepatocellular carcinoma: an update. *Hepatology*. 2011;53(3):1020-2. 2. Wildi S, *et al. Br J Surg*. 2004;91:400-8.

Dr. Mohsen elaborated that HCC staging is fragmented to determine prognosis and guide treatment. *"Staging systems have been developed as well as guidelines. The one that really stands out is the one that takes into consideration the patient's actors, tumor factors and liver conditions and that is the Barcelona staging system."*

HCC staging: Fragmented

Multiple staging systems have been developed

Staging is used to determine prognosis and guide treatment[1]

Staging HCC is difficult because:[1]
Most patients with HCC have underlying liver disease
Key prognostic indicators are not clearly defined
Prognostic indicators vary during the course of the disease

Guidelines recommend that HCC staging systems should consider[2]
Tumor stage
Liver function
Health status

1. Llovet JM. J *Gastroenterol*. 2005;40:225-35. 2. Marrero JA, et al. *Hepatology*. 2005;41:707-16.

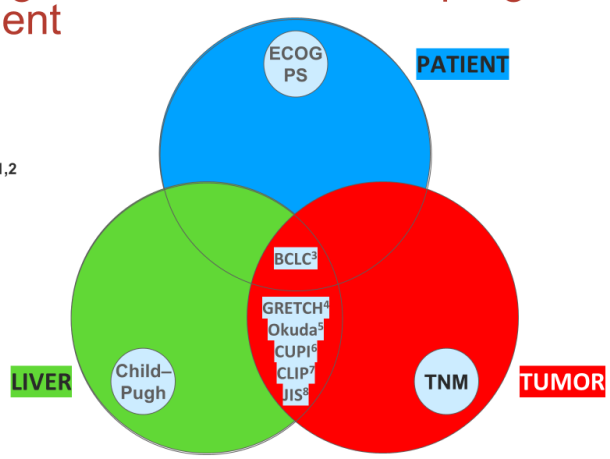
HCC staging: Fragmented to determine prognosis and guide treatment

Factors affecting staging systems[1,2]

Tumor stage

Liver function

Health status



There are many systems, but one of the most commonly used is the **BCLC staging system**

CLIP, Cancer Liver Italian Program; CUPI, Chinese University Prognostic Index; ECOG PS, Eastern Cooperative Oncology Group performance status; GRETCH, Groupe d'Etude et de Traitement du Carcinome Hépatocellulaire; JIS, Japan Integrated Staging; TNM, tumor-node-metastasis.

1. Marrero JA, Pelletier S. *Clin Liver Dis.* 2006;10:339-51. 2. Bruix J, *et al. J Hepatol.* 2001;35:421-30. 3. Llovet JM, *et al. Semin Liver Dis.* 1999;19:329-38. 4. Chevret S, *et al. J Hepatol.* 1999;31:133-41. 5. Schafer DF, Sorrell MF. *Lancet.* 1999;353:1253-7. 6. Leung TW, *et al. Cancer.* 2002;94:1760-9. 7. CLIP. *Hepatology.* 1998;28:751-5. 8. Liver Cancer Study Group of Japan. General Rules for the Clinical and Pathological Study of Primary Liver Cancer. 4th ed. Tokyo: Kanehara; 2000.

Curative Treatments

Resection	Ablation	Transplant
▪Noncirrhotics –Choice of therapy ▪Cirrhotics –Reserved for CTP A –Avoid R hepatectomy ▪Best for solitary HCC ▪< 30% eligible	▪Effective when < 3 cm ▪Multiple modalities –Thermal –Chemical –Stereotactic radiation ▪Minimally invasive	▪Cures both ▪MELD exception –Milan criteria –Downsizing ▪Demand > supply
▪Survival –5 yrs: 70%	▪Survival –5 yrs: 40% to 50%	▪Survival –5 yrs: > 70%
▪Recurrence –5 yrs: 70%	▪Recurrence –5 yrs: 70%	▪Recurrence –5 yrs: 15%

Belghiti J, et al. HPB (Oxford). 2005;7:42-49. Bruix J, et al. Hepatology. 2011;53:1020-1022. Feng Q, et al. J Cancer Res Clin Oncol. 2015;141:1-9. Sapisochin G, et al. at Rev Gastroenterol Hepatol. 2017;14:203-217. Thuluvath PJ, et al. Liver Transpl. 2009;15:754-762.

Findings

Key treatment guidelines utilize BCLC staging

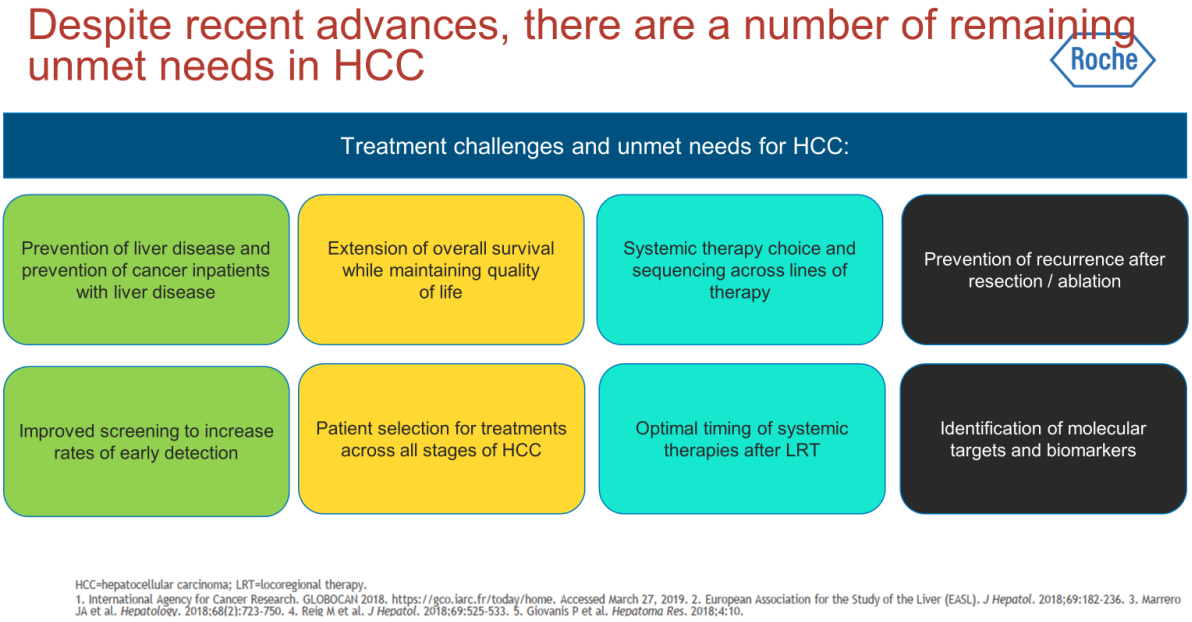
Improved outcomes in Multidisciplinary Approach to the patient with HCC

Development of liver cirrhosis, diagnostic criteria

Evolving systemic treatment strategy for advanced HCC

Conclusion

In his conclusion Dr. Mohsen highlighted unmet needs in treating Hepatocellullar Carcinoma.



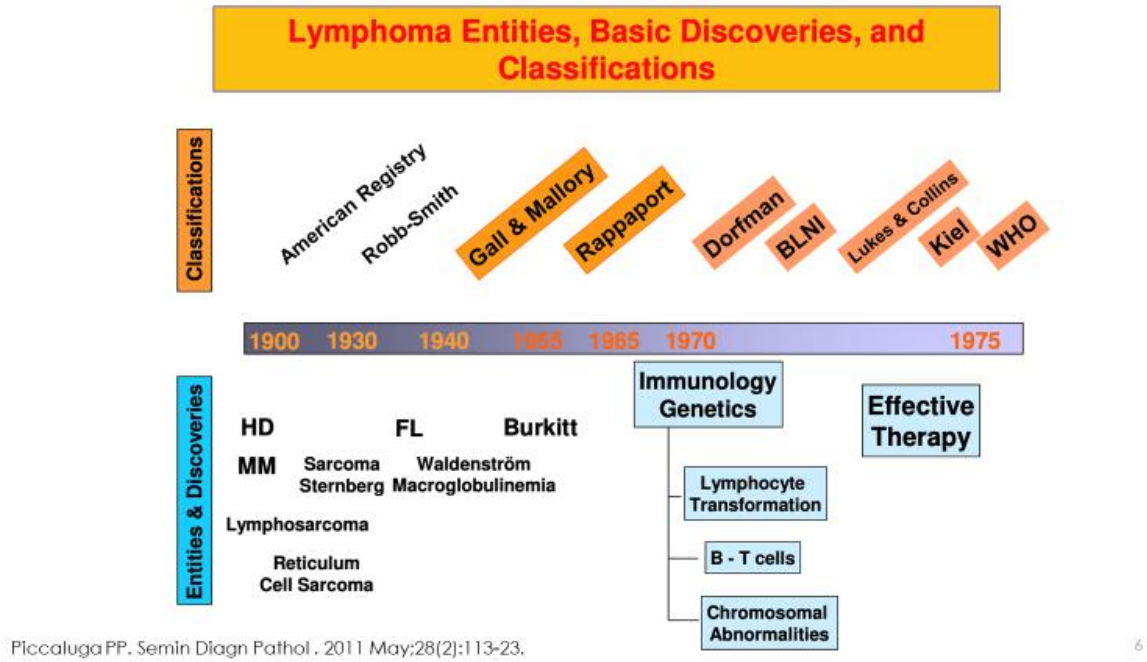
TOPIC: THE NEW CLASSIFICATION(S) OF B-CELL LYMPHOID TUMORS

SPEAKER: PROF. PIER PAOLO PICCALUGA, BIOBANK OF RESEARCH, IRCCS S. ORSOLA MALPIGHI HOSPITAL, BOLOGNA UNIVERSITY SCHOOL OF MEDICINE – DIMES

Background

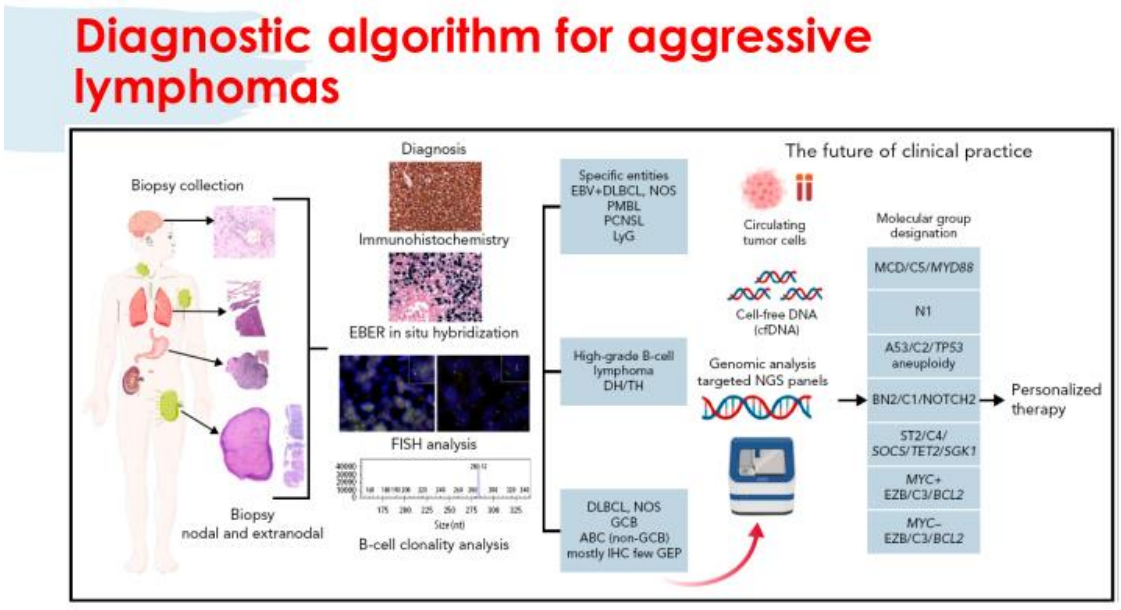
Classification is the language of Medicine. Diseases must be defined and described before they can be diagnosed and treated. Disease entities should be clearly defined and clinically distinctive. Consensus on terminology and definitions is essential for both clinical practice and research. In his presentation Dr Pier Paolo Piccaluga gave a history of

lymphoma classification dating back to 1975 and elaborated on lymphoma entities, discoveries and classifications.

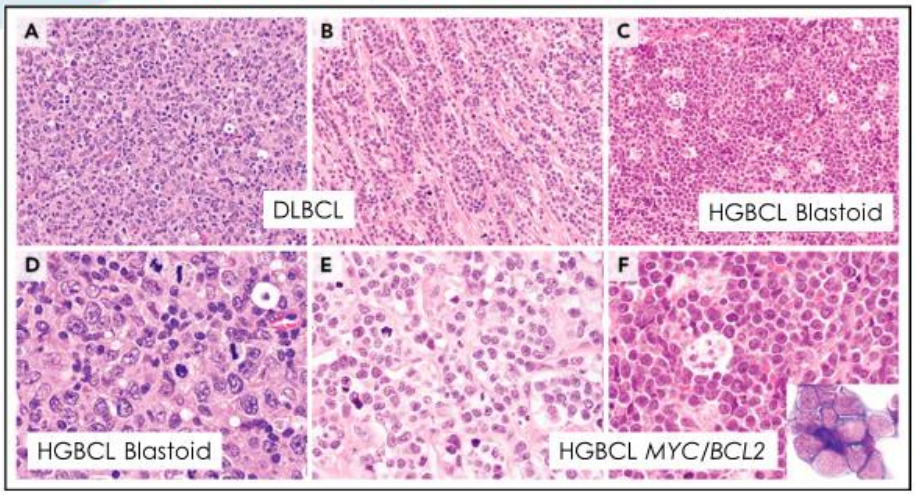


Dr Picalugga also discussed new International Consensus Classification proposals and what he termed as the 2022 revolution that involves WHO and ICC

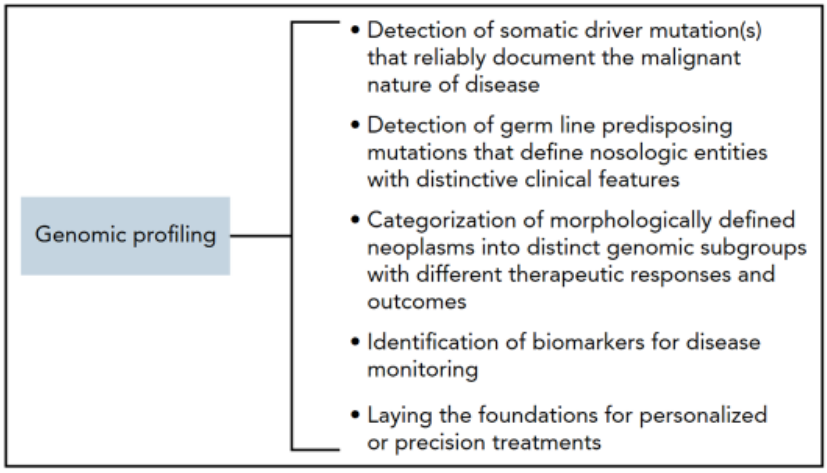
Entity/category	Change
Chronic lymphocytic leukemia	Need to evaluate IGHV mutational status and TP53/17p alterations at the time of treatment. Reversible Richter-like proliferations in patients in which a BTK inhibitor has been interrupted must be distinguished from diffuse large B-cell lymphoma transformation.
Lymphoplasmacytic lymphoma (Waldenström macroglobulinemia)	Diagnosis may be made with lymphoplasmacytic aggregates in trephine biopsies <10% of cellularity with evidence of clonal B cells and plasma cells. Molecular studies for *MYD88*^{L265P} and *CXCR4* mutations are strongly encouraged in the workup of suspected lymphoplasmacytic lymphoma.
MGUS	Two types of IgM MGUS are recognized: a plasma cell type and an NOS type. Monoclonal gammopathy of renal significance and monoclonal gammopathy of clinical significance are recognized but they do not represent separate disease entities.
Primary cold agglutinin disease	Recognized as a new distinct entity. *MYD88*^{L265P} mutation is absent.
Multiple myeloma	The term "multiple myeloma" is preferred over "plasma cell myeloma." Multiple myeloma should be subclassified into 1 of 4 mutually exclusive cytogenetic groups ("multiple myeloma with recurrent cytogenetic abnormalities") or designated as NOS.
Solitary plasmacytoma of bone and extraosseous plasmacytoma	Minimal bone marrow involvement by clonal plasma cells is of major prognostic importance, particularly with solitary plasmacytomas of bone.
Primary cutaneous marginal zone lymphoproliferative disorder	Now recognized as a distinct entity to be segregated from other mucosa-associated lymphoid tissue lymphomas and designated as a lymphoproliferative disorder. Two subtypes are distinguished largely based on expression of either class-switched Ig or IgM.
Follicular lymphoma	Cytological grades are maintained. In follicular lymphoma grade 3, *BCL2* rearrangement and CD10 positivity both favor grade 3A over grade 3B. Patients with follicular lymphoma grade 3B with IRF4/MUM1 expression should be evaluated for *IRF4* alteration, especially younger patients. Routine molecular testing is currently not required, but it can be useful in selected patients for differential diagnosis and specific therapeutic options (eg, EZH2 inhibitors).
BCL2-R negative, CD23-positive follicle center lymphoma	Recognized as a specific form of follicle center lymphoma, frequently but not always with a diffuse pattern, pelvic/inguinal location, and common *STAT6* mutations.
Primary cutaneous follicle center lymphoma	Molecular and cytogenetic studies further support its segregation from other follicular lymphomas and may help predict subsequent extracutaneous dissemination.
Testicular follicular lymphoma	Recognized as a distinct form of follicular lymphoma in young boys.
Large B-cell lymphoma with *IRF4* rearrangement	Upgraded to a definite entity. Occasionally identified in adults, and it has features similar to those in children. Definition does not include aggressive B-cell lymphomas with *IRF4* rearrangements that may be associated with *BCL2*-R or *MYC*-R.
Mantle cell lymphoma	Definition is expanded to include genetic variants with *CCND2* and *CCND3* rearrangements with IG genes in otherwise typical mantle cell lymphoma. Aggressive B-cell lymphomas with secondary *CCND1* rearrangements should not be diagnosed as mantle cell lymphoma.



Is morphology still relevant? The example of highly proliferative B-NHL



The potential impact of genomic profiling on the classification and clinical management of hematologic neoplasms.



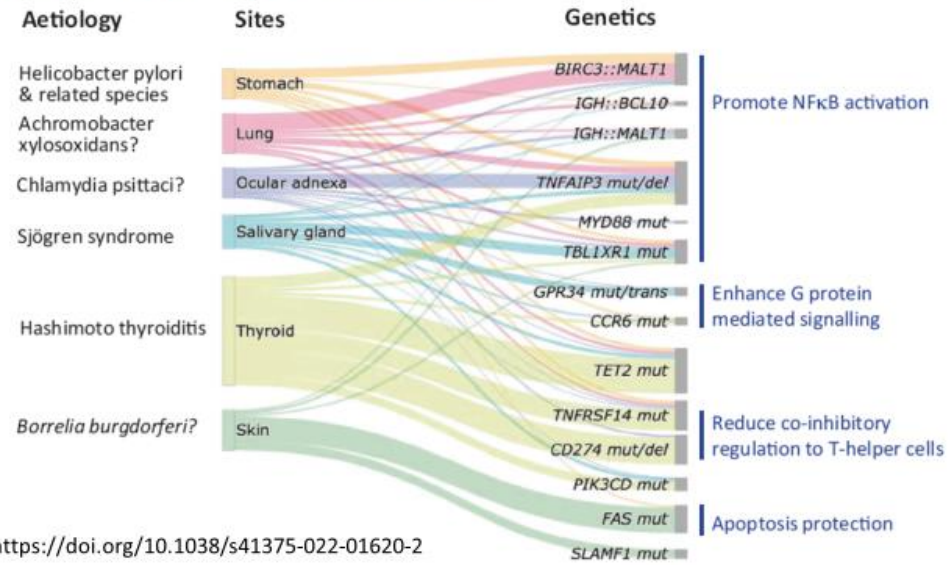
Cazzola M, Sehn L. Blood (2022) 140 (11): 1193–1199.

Table 1. WHO Classification of Haematolymphoid Tumours, 5th edition: B-cell lymphoid proliferations and lymphomas.

Mature B-cell neoplasms	
Pre-neoplastic and neoplastic small lymphocytic proliferations	
Monoclonal B-cell lymphocytosis	(Same)
Chronic lymphocytic leukaemia/small lymphocytic lymphoma	(Same)
(Entity deleted)	B-cell prolymphocytic leukaemia
Splenic B-cell lymphomas and leukaemias	
Hairy cell leukaemia	(Same)
Splenic marginal zone lymphoma	(Same)
Splenic diffuse red pulp small B-cell lymphoma	(Same)
Splenic B-cell lymphoma/leukaemia with prominent nucleoli	*Not previously included* (encompassing hairy cell leukaemia variant and some cases of B-cell prolymphocytic leukaemia)
Lymphoplasmacytic lymphoma	
Lymphoplasmacytic lymphoma	(Same)
Marginal zone lymphoma	
Extranodal marginal zone lymphoma of mucosa-associated lymphoid tissue	(Same)
Primary cutaneous marginal zone lymphoma	*Not previously included* (originally included under "extranodal marginal zone lymphoma of mucosa-associated lymphoid tissue")
Nodal marginal zone lymphoma	(Same)
Paediatric marginal zone lymphoma	(Same)

Leukemia; https://doi.org/10.1038/s41375-022-01620-2

Aetiology and recurrent genetic abnormalities in extranodal marginal zone lymphoma (EMZL) of various sites

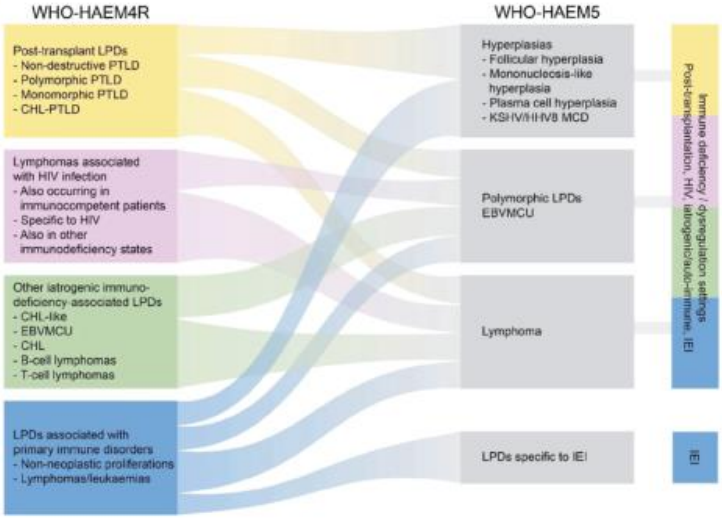


Leukemia; https://doi.org/10.1038/s41375-022-01620-2

Leukemia; https://doi.org/10.1038/s41375-022-01620-2

Follicular lymphoma	
In situ follicular B-cell neoplasm	In situ follicular neoplasia
Follicular lymphoma	(Same)
Paediatric-type follicular lymphoma	(Same)
Duodenal-type follicular lymphoma	(Same)
Cutaneous follicle centre lymphoma	
Primary cutaneous follicle centre lymphoma	(Same)
Mantle cell lymphoma	
In situ mantle cell neoplasm	In situ mantle cell neoplasia
Mantle cell lymphoma	(Same)
Leukaemic non-nodal mantle cell lymphoma	(Same)
Transformations of indolent B-cell lymphomas	
Transformations of indolent B-cell lymphomas	*Not previously included*
Burkitt lymphoma	
Burkitt lymphoma	(Same)
KSHV/HHV8-associated B-cell lymphoid proliferations and lymphomas	
Primary effusion lymphoma	(Same)
KSHV/HHV8-positive diffuse large B-cell lymphoma	HHV8-positive diffuse large B-cell lymphoma, NOS
KSHV/HHV8-positive germinotropic lymphoproliferative disorder	HHV8-positive germinotropic lymphoproliferative disorder
Lymphoid proliferations and lymphomas associated with immune deficiency and dysregulation	
Hyperplasias arising in immune deficiency/dysregulation	*Not previously included*, encompassing non-destructive post-transplant lymphoproliferative disorders, among others
Polymorphic lymphoproliferative disorders arising in immune deficiency/dysregulation	*Not previously included*, encompassing polymorphic posttransplant lymphoproliferative disorders, other iatrogenic immunodeficiency-associated lymphoproliferative disorders, among others
EBV-positive mucocutaneous ulcer	(Same)
Lymphomas arising in immune deficiency / dysregulation	*Not previously included*, encompassing monomorphic posttransplant lymphoproliferative disorders, classic Hodgkin lymphoma posttransplant lymphoproliferative disorders, lymphomas associated with HIV infection, among others
Inborn error of immunity-associated lymphoid proliferations and lymphomas	Lymphoproliferative diseases associated with primary immune disorders

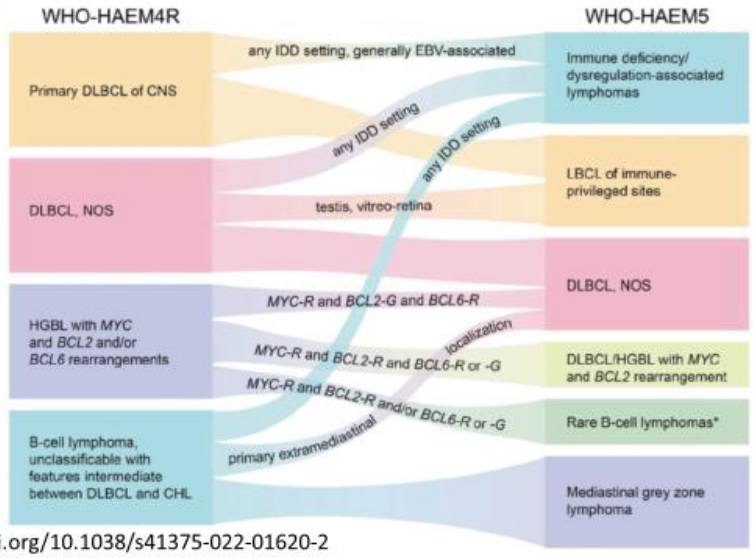
immunodeficiency-associated lymphoid proliferations and lymphomas



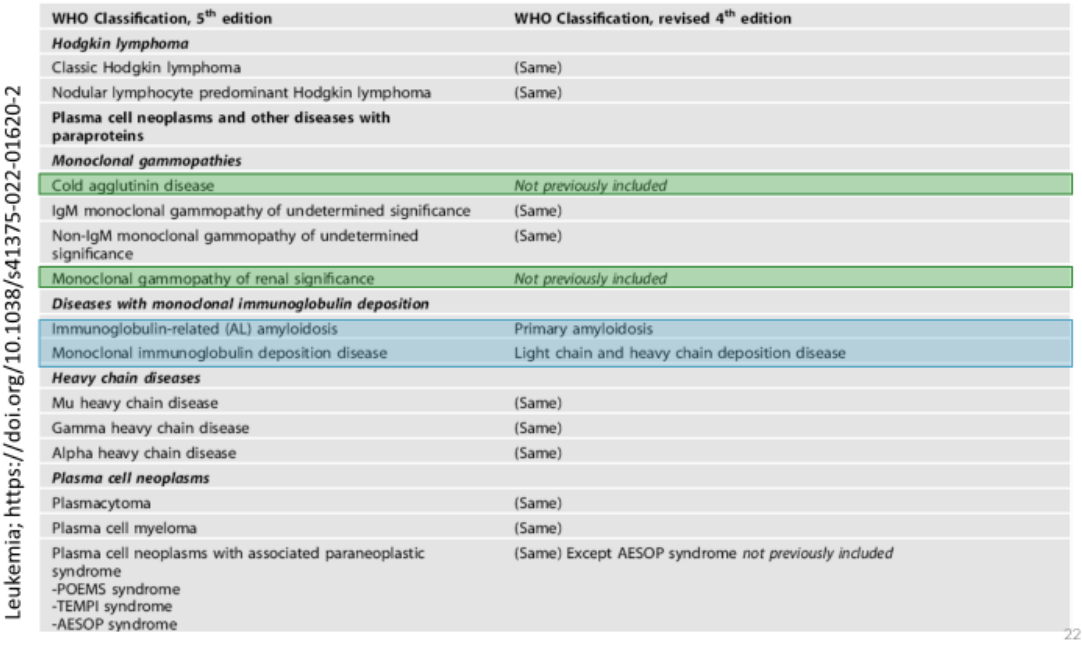
Distinctive features of primary large B-cell lymphomas of immune privileged sites

Subtypes	Primary large B-cell lymphoma of the CNS
	Primary large B-cell lymphoma of the vitreoretina
	Primary large B-cell lymphoma of the testis
Clinical	Usually in adults over age of 60 years
	Lymphoma tends to "home" to other immune privileged sites: vitreoretina tumour may occur concurrently with or follow CNS tumour; testicular tumour tends to relapse in CNS or contralateral testis
	Aggressive tumours with generally poor prognosis
Morphology	Large B-cell lymphoma
Immunophenotype	Activated B-cell immunophenotype: Usually CD10-, MUM1+, BCL6+
	EBV negative
Mutational profile	Concomitant *MYD88* and *CD79B* mutations
	Immune evasion: genetic inactivation of MHC class I and II and *B2M* (β_2-microglobulin) with subsequent loss of protein expression
	Showing DLBCL genomic signature C5/MCD/MYD88

Summary of the relationship between large B-cell lymphoma (LBCL) entities as named and defined in the revised 4th edition of the WHO classification (WHO-HAEM4R) and in the present 5th edition (WHO-HAEM5).



Leukemia; https://doi.org/10.1038/s41375-022-01620-2



WHO Classification, 5th edition	WHO Classification, revised 4th edition
Hodgkin lymphoma	
Classic Hodgkin lymphoma	(Same)
Nodular lymphocyte predominant Hodgkin lymphoma	(Same)
Plasma cell neoplasms and other diseases with paraproteins	
Monoclonal gammopathies	
Cold agglutinin disease	*Not previously included*
IgM monoclonal gammopathy of undetermined significance	(Same)
Non-IgM monoclonal gammopathy of undetermined significance	(Same)
Monoclonal gammopathy of renal significance	*Not previously included*
Diseases with monoclonal immunoglobulin deposition	
Immunoglobulin-related (AL) amyloidosis	Primary amyloidosis
Monoclonal immunoglobulin deposition disease	Light chain and heavy chain deposition disease
Heavy chain diseases	
Mu heavy chain disease	(Same)
Gamma heavy chain disease	(Same)
Alpha heavy chain disease	(Same)
Plasma cell neoplasms	
Plasmacytoma	(Same)
Plasma cell myeloma	(Same)
Plasma cell neoplasms with associated paraneoplastic syndrome -POEMS syndrome -TEMPI syndrome -AESOP syndrome	(Same) Except AESOP syndrome *not previously included*

Conclusion

Future classification of hematologic neoplasms;

- Detailed description of the current classification
- Web-based computational methods that help physicians implement the classification in clinical settings
- Web-based personalized prognostic models
- Biomarker-driven predictive tools to guide personalized precision treatment
- Platform for interaction with the scientific community

DAY ONE BREAK OUT SESSIONS- A2

POLICY & ADVOCACY 1

MSD SPONSORED SESSION

TOPIC: IMPLEMENTING CANCER PREVENTION STRATEGIES IN KENYA

SPEAKER-DR MARY NYANGASI, HEAD, NATIONAL CANCER CONTROL PROGRAM

Background

Dr. Nyangasi made her submissions regarding Implementation of Cancer Prevention Strategies in Kenya. She outlined some of the milestones in cancer prevention Globally, Regionally and Nationally. Dr. Nyangasi also shared activities related to HPV and HPV-related cancer prevention and control, achievements and opportunities.

"Chronic infection is a significant health problem in Kenya; classified as a high prevalence zone for HBV. HCC is 11th most common cancer, 80% due to HBV.Morbidity and mortality rates are high – reasons include, low disease awareness, the virulent nature of the disease, patients presenting late for care among others,"

HCV prevalence in Kenya was found to be low in pre-screened, volunteer blood donors. But, high HCV infection prevalence among a cohort of drug users is (22.2%) reported. At least two major genotypes among Kenyan drug users (genotypes 1 and 4).

Globally Approx. 60% of new cancer cases and 70% of all cancer deaths occur in low- and middle-income countries (LMICs).
" Global cancer incidence is expected to double by 2035, with higher increase expected in LMICs."

Recommendations

. Health systems in most LMICs are unprepared to handle cancer
. Prevention is the most cost-effective strategy for cancer prevention and control: adoption of risk reduction strategies, vaccination and screening
. In high income countries, effective vaccination and screening programs have been effective in reducing burden of cervical, breast, lung and liver cancers.

- Education of parents for uptake of universal immunization
- Improved surveillance on infectious diseases that are linked to cancer
- Develop targeted screening programs for HBV
- Integration of interventions into other programs - national immunization efforts

Future Directions

Dr Nyangasi talked about the emergence of generic vaccines; single-dose vaccination provides some protection against HPV infection. She said the developed world offers many lessons relating to the burden of cancer and cancer control strategies.

Additionally, cancer prevention is an important and effective strategy for attacking the growing burden of diseases in the developing world.

Conclusions

To tackle cancer, scaling up vaccination including in communities & schools should be top on the list in addition to availing more vaccines. That availability of trained HR affected scheduling of interventions and improving awareness levels on vaccination.
Breaking stigma about cancer and vaccines as cancer vaccines should be taken into consideration.
The government, both national and county, should continue to make incremental investments in the vaccination, screening and treatment and

offer vaccines to boys too: evidence shows it reduces HPV infection, prevents other cancers in males too.

TOPIC: EVALUATING EFFECTS OF CANCER-RELATED STIGMA IN KENYA

SPEAKER: BENDA KITHAKA, DIRECTOR, KILELE HEALTH ASSOCIATION

Background

Ms Kithaka presented a pilot study about Evaluating Effects of Stigma on Quality of Life of Cancer Survivors in Kenya. The Primary Objective of the study was knowledge, attitudes and perceptions on cancer Stigma, and its effects of Quality of Life amongst cancer survivors.

Significance of Study:

- Utilize findings from pilot study to improve the KILELE Health Model.
- Development of Survivors / Caregivers as positive community role models.
- Identify and mitigate barriers to accessing survivorship services in attainment of optimal QoL.Inform creation of a robust evidence-based cancer survivors' navigation.

Methodology

According to MsKithaka, data was recorded at the point of collection with Key Informant Interviews (KIIs) as well as Face to face interviews: Zoom, Mobile phone used to mitigate Covid-19 travel limitations
Tool Pre-Testing: Five [5] survivors, input and feedback was incorporated prior to main study.
Demographics (Age, Marital Status, Education, Social Economic Status, Occupation, Employment)
Cancer Survivorship Journey (Type of cancer survived, Years, post treatment & survivorship care, Survivorship Journey).
Cancer Stigma Scale (CASS): global tool was adapted and used to ensure

future comparability of data. With open ended questions for qualitative & quantitative-data.
There were Study Limitations in that tool's validation was limited, budgets, limited scope of reach.

Findings

Regarding the question on how long an interviewee had survived cancer? 81 percent said they had survived cancer 10 years and below.

100 percent of those interviewed said cancer had interfered with their social life while 98 said their finances were interfered with. Another 95 percent said their family life was interfered with a great deal while those whose work/employment was interfered with were 71 percent.

The study also sought to establish the feelings of the cancer survivors after receiving the cancer diagnosis. Some said they saw death, others were devastated and lost, others felt depressed and lonely
in addition to those who were shocked in disbelief.

Reaction to cancer diagnosis report showed that patients felt like dying, while others went into depression. Another group was in denial, others could not figure out how they will survive. Another set of interviewees said they felt tortured during chemotherapy
and also, their finances were depleted as their health deteriorated.

"Just being told [that] my results read I had cancer was devastating. I saw death because I knew I would not get the finance[s] to get treatment. My mom had been diagnosed the previous year, we had a Harambee conducted on her behalf, so I wasn't standing a chance,"
one of the interviewees said.

The Researcher also sought to find out some of the challenges that they faced during their cancer journey. Here are some of their responses.

"Loss of independence. My greatest challenge has been I had to stop working, and I started being a beggar. I didn't have friends to borrow from."

"I went through a lot of pain and tears. I even felt that God had forsaken me. I got to a place where I thought of ending my life but …"

"I had trouble finding food. My neighbours distanced themselves from me. The worst part was that they thought I would infect them with cancer."

Study Lessons, Gaps and Opportunities

- Perceptions of fatality in cancer may be changed or reduced through:
  Showcasing survivors thriving
- Raising awareness of success in cancer treatments
- Equipping survivors to be change agents – de-stigmatize, inform, educate, encourage prevention

Recommendations

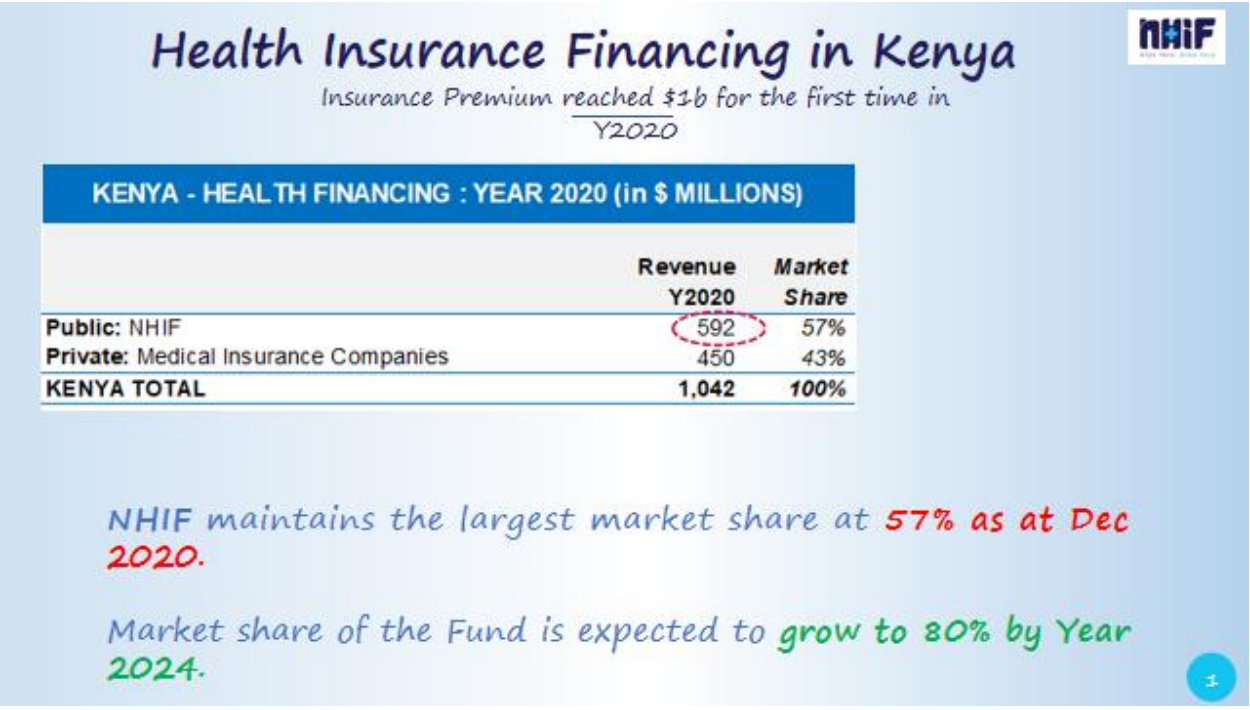
This Pilot Study shows a need to understand the role of stigma in cancer care [Disease Specific, Region, Gender].
There has been little systematic research in this area. Would the study results be different in 'normal' society as compared to survivor's community?
Programmatic – propose tracking of impact on KILELE Participants vs. differences in the general cancer community.

TOPIC-PROVIDING SUFFICIENT FINANCIAL RISK PROTECTION IN CANCER: The value-based model for NHIF

SPEAKER-DR. SAMSON KUHORA, NATIONAL HOSPITAL INSURANCE FUND

Background

National Hospital Insurance Fund (NHIF) seeks to provide Affordable Health Care for nearly 51 million Kenyans by 2022. The fund's strategic goals towards Universal Health Care coverage objectives. This according to Kuhora is by increasing and sustaining revenues, enhancing value-based financing and strategic procurement of healthcare benefits. Create a suitable legal and regulatory framework. Strengthen governance and management systems in addition to enhancing strategic alliances, collaborations, and linkages as well as leverage on technology to enhance service delivery.



The NHIF Cancer-Fact File

The cancers are coded using the ICD10 codes (C00 – D49). The specific benefits related to cancer management is the oncology benefit (chemotherapy, radiotherapy, brachytherapy, Radionuclide therapy, PSMA-PET/PET-CT/SPET Scans)

The Fund supported 47,211 unique patients for cancer care in 2021/22, with breast cancer having the highest prevalence (14%). Investment cases project significant ROI (productivity benefit) in preventable and curable diagnoses like paediatric cancers.

Financial protection toward UHC is often tied to growth in resources allocated to health and overall growth of country income:

- Expansion of prepayment and risk pooling over time to cover entire populations, in some cases on a group-by-group basis
  Provision of a more comprehensive benefit package of health interventions and covered conditions
  Expansion of risk pooling and pro-poor financial risk protection through the elimination of out-of-pocket expenses at the point of service delivery for the poor and for those interventions considered of high value where use should not be deterred.

Conclusions

Cancer management in any population will have a significant impact on financing dynamics.

Investment cases project significant ROI in curable diagnoses like paediatric cancers Specialists, governments and policy makers play a central role in outcomes achievement and cost management for cancer management.

POLICY AND ADVOCACY 2

TOPIC-NATIONAL CANCER REGISTRY: CURRENT STATUS OF HOSPITAL-BASED CANCER REGISTRIES

SPEAKER-Dr. MARTIN MWANGI, HEAD, DIRECTORATE OF CANCER PREVENTION AND CONTROL

Background

National Cancer Institute of Kenya-Established under section 4 of the Act, a body corporate with perpetual succession and a common seal governed by a Board of Trustees Mandate on
Policy advisory, awareness and cancer prevention, access to care, oversight and Coordination
Cancer Registry, Surveillance and cancer research,
Regulation/standardization of care and Capacity building.

Status of cancer registries in Kenya

- ✓ Population-based cancer registries
- ✓ Nairobi cancer registry (NCR) 2001
- ✓ Eldoret cancer registry (ECR) 1999
- ✓ Additional – Kisumu, Meru and Mombasa
- ✓ Hospital-based cancer registries (HBCR).

  Across counties

- ✓ Private, Faith based and Public facilities
- ✓ Use of NACARE and CANREG 5
- ✓ Special cancer registries

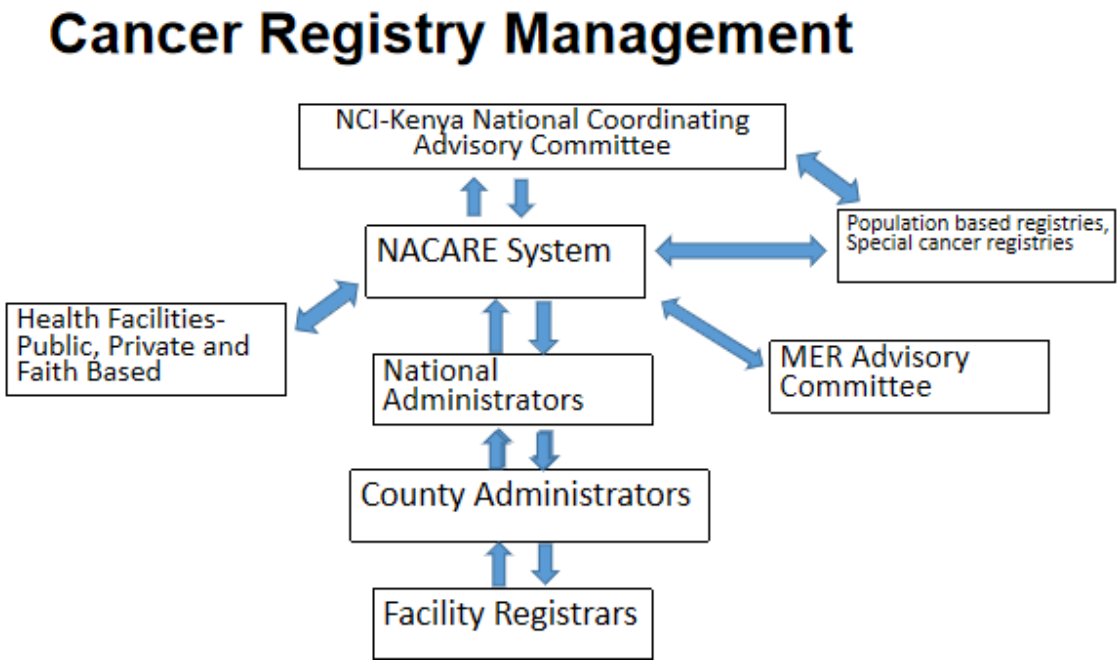
✓ CML and breast cancer (BRECC)

✓ Childhood cancer registries

✓ Established pathology-based registries

Research

- Health-care planning - financing
- Health care monitoring – screening, patient care, survival
- Knowledge translation – Policies
- Data repositories



Recommendations

.Roll out of Cancer Registration & Notification Trainings

.Support establishment of new cancer registries in 29 additional counties

.Support in equipping the county registries

.Support counties with retrospective data abstraction

.Conferences/Information sharing

.Overlying current data with screening data

TOPIC: NCI- KENYA DESIGNATION AND KEY INSPECTION FINDINGS

SPEAKER: SUNDLEY OMWENGA

Background

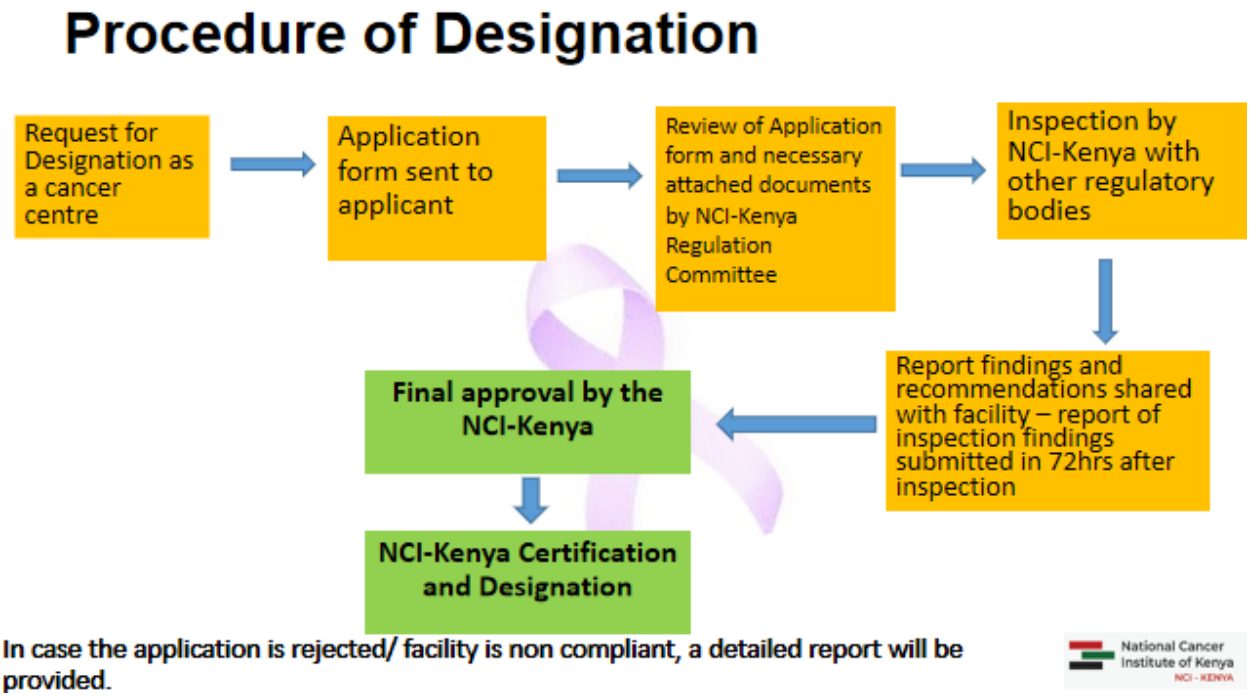
National Cancer Institute of Kenya was established under section 4 of the Act with mandate as a corporate body with perpetual succession and a common seal and shall, in its corporate name, tasked with Policy Advisory, Oversight, Coordination of cancer services quality and standards in addition to cancer Prevention and Awareness.

The purpose of this body according to Omwenga, is as follows:

Promote public awareness about the causes, consequences, means of prevention and control of cancer;
Extend to every person with cancer full protection of his human rights and civil liberties by—
guaranteeing the right to privacy of the individual;
outlawing discrimination in all its forms and subtleties
ensuring the provision of basic health care and social services;
Promote utmost safety and universal precautions in practices and procedures that relate to the treatment of cancer;

Positively address and seek to eradicate conditions that cause and aggravate the spread of cancer;
Promote access to quality and affordable diagnostic and treatment services for persons with cancer
Ensure sustainable capacity for the prevention and control of cancer.

Meanwhile the National Cancer Institute of Kenya in collaboration with the Ministry of health has developed guidelines that must be adhered to while establishing cancer centres countrywide. The following figure shows the procedure involved in designation.



The institution has so far received 101 applications from 24 counties, it is inspecting 78 cancer centres in 18 counties nationally. Out of these figures, 75% are private applicants, 17 percent are public organizations while 8 percent are faith-based organizations.

Proposed Competency Areas

.Application of the concepts and principles of Oncology
.Cancer diagnosis, staging and goals of therapy
.Communicating with patients and their families with sensitivity and

respect

Cancer treatment options

.Chemotherapy processes and routes of administration

Safe Handling of hazardous drugs

.Assessing and managing common chemotherapy side effects

.Assessing and managing common oncology emergencies

.Factors affecting stability and compatibility of anti-cancer drugs

.Monitoring therapy and dose toxicities

Findings

The following photos were annexed to show some of the recommendations that were made as far as standard cancer centres are concerned.

TOPIC: FEMALE REPRESENTATION IN ONCOLOGY LEADERSHIP IN AFRICA: ANALYSIS OF TRENDS AT THREE AFRICAN ONCOLOGY CONFERENCES

SPEAKER: HAIMANOT KASAHUN

Background

Board membership in oncology organizations and invitation to speak at major oncology conferences is an established indicator of gender disparities in oncology leadership.

Recent studies note a slight upward trend in female board membership and female speakers at oncology conferences in European and American contexts

Little is known about these trends in Africa.

AORTIC, KESHO (Kenyan Society for Hematology and Oncology) and ARCON (Association of Radiation and Clinical Oncologists of Nigeria) conferences offer opportunities for leaders in oncology to share their work and further their career.

This study presents an analysis of female council membership and speaker participation at AORTIC, KESHO, and ARCON conferences from 2015-2022.

Methods

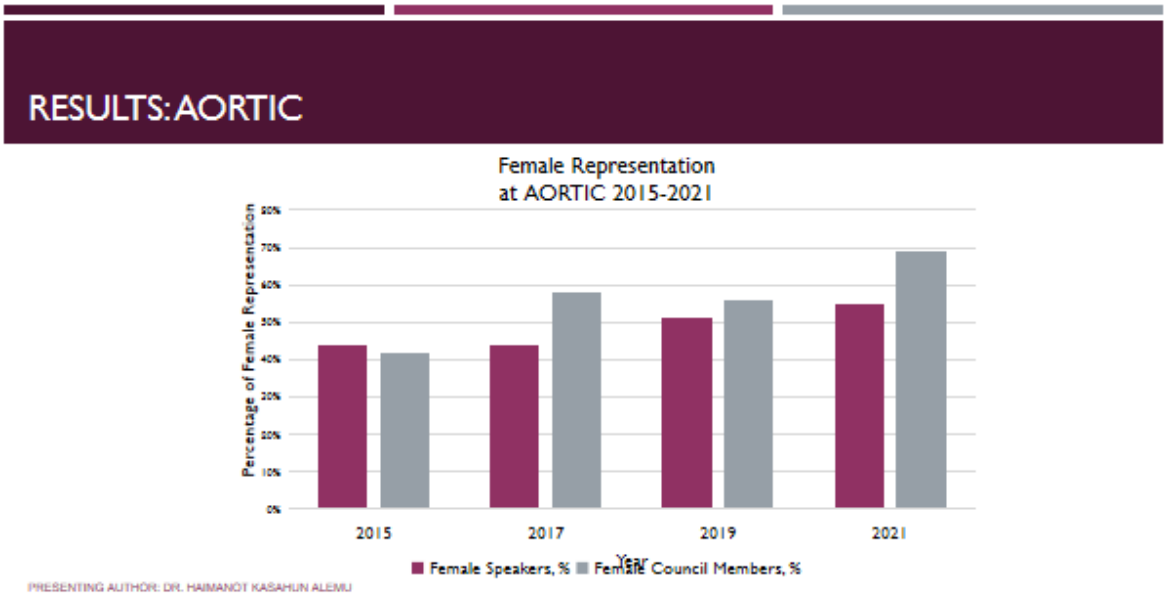
AORTIC conference programmes and AORTIC elections for council membership in 2015, 2017, 2019 and 2021 were analyzed for gender representation.

For each AORTIC session, data was collected on speaker name, gender, and affiliated country.

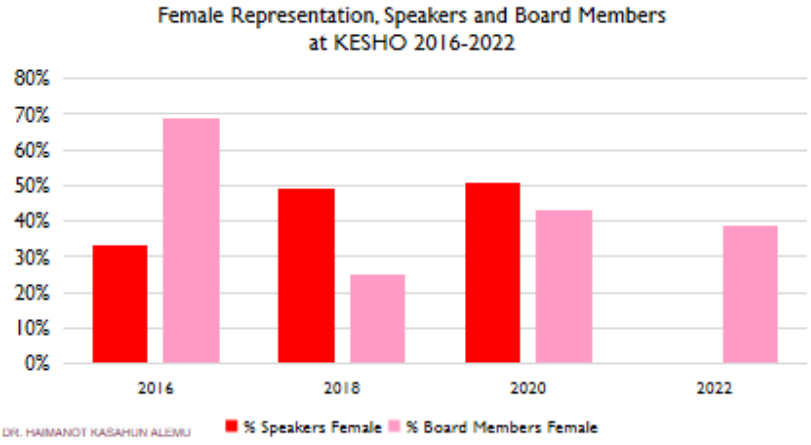
Personal data and country affiliation was determined through online biographies of speakers and/or by visual confirmation of professional photographs.

Data from KESHO and ARCON conferences were submitted directly through members of the respective organizations.

A simple descriptive analysis of the data and trends is presented here:

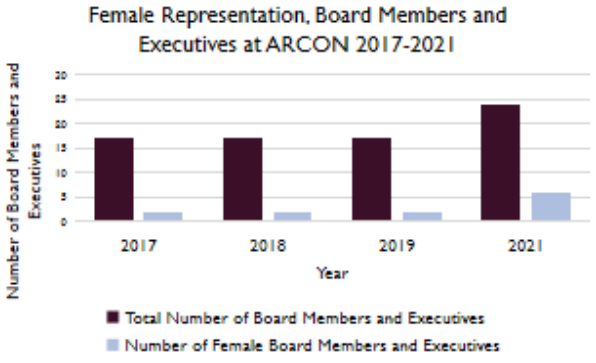


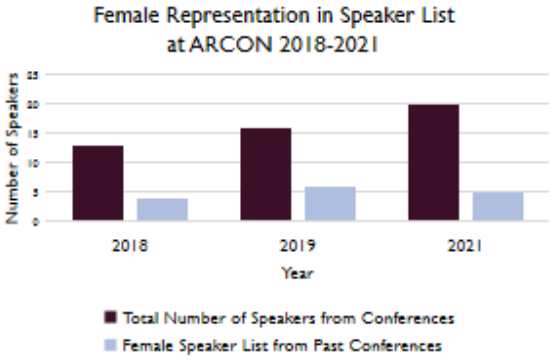
RESULTS: KESHO

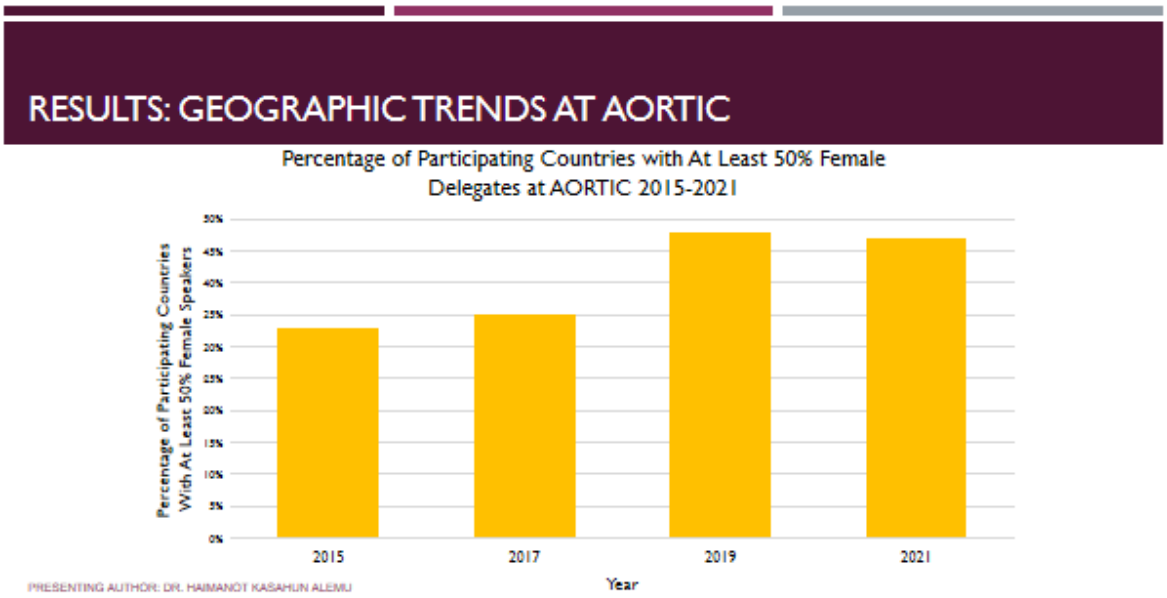


*No data for speakers available in 2022

RESULTS: ARCON

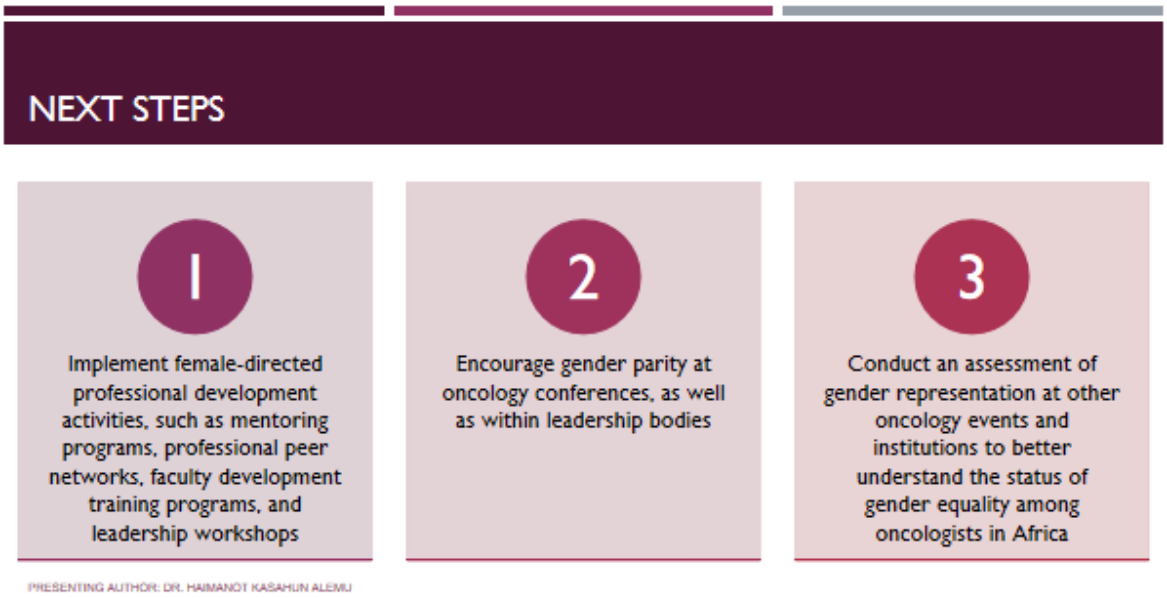






Key Findings

- Since 2015, the proportion of female speakers and council members at AORTIC has increased.
- KESHO has seen a rise in female speakers, but female board membership has not increased.
- ARCON has seen a rise in female board members and executives, but has not seen a rise in female speaker participation.
- The number of participating countries at AORTIC with at least 50% of delegates being female has steadily increased since 2015.



Conclusions

African oncology conferences have shown a variable increase in female participation over the past 6 years.

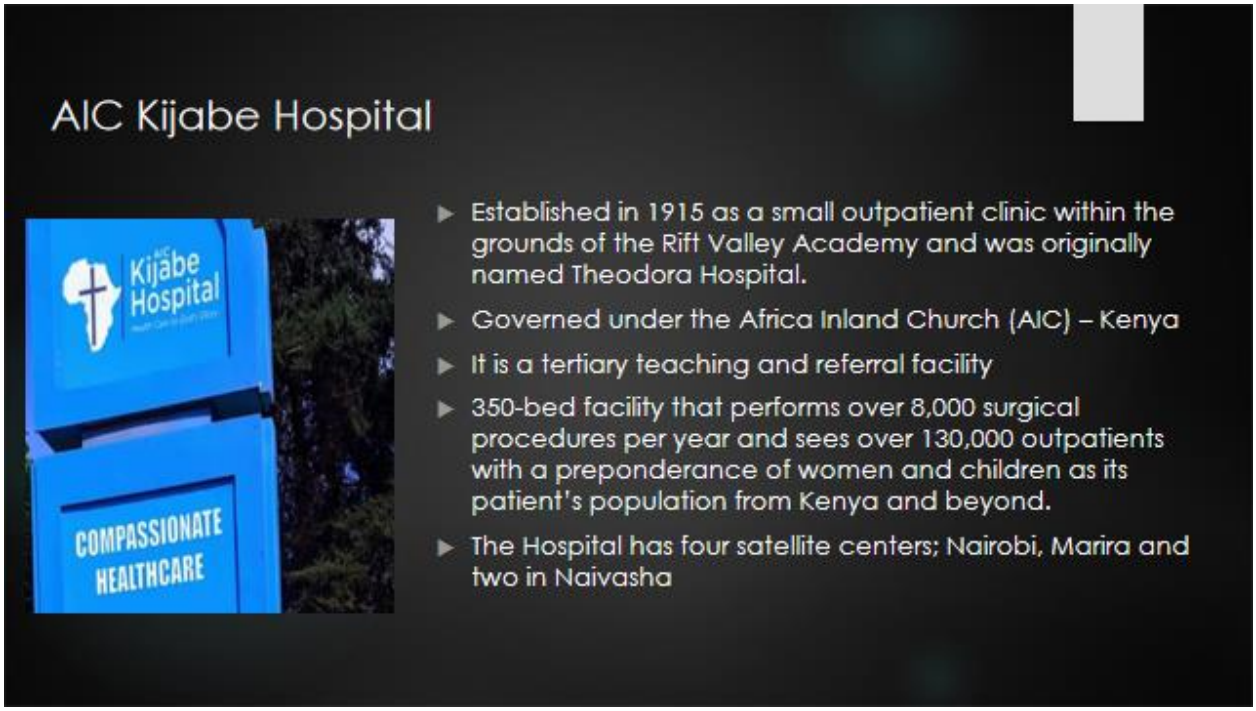
However, trends are not as strong and consistent as one would hope.

There is a need for greater female empowerment and female-directed scholarship activities, such as faculty development programs, mentorship networks, and professional development communities.

TOPIC: NATIONAL CANCER INSTITUTE GLOBAL ONCOLOGY MENTORED RESEARCH PROGRAM: Vanderbilt University-AIC Kijabe Hospital Collaborative Breast Cancer Outcomes Project

SPEAKERS-Prof J. MACLEOD, DR H. MUSAU, DR B. AKINYI

Background



Kijabe-Vanderbilt Cooperation

VUMC's Department of Surgery has partnered with Kijabe Hospital for purposes of providing clinical care, surgical education and research education since 2011.
Kijabe-Vanderbilt Research Methodology Course for Healthcare Providers- Dr Jana MacLeod and Dr Rondi Kauffmann.
The existing partnership between VUMC Department of Surgery and AIC Kijabe Hospital is perfectly poised to build a longitudinal, bi-directional global breast cancer research program between the VICC SPORE and clinician-researchers in Kenya.

Objectives of the Study

.To elucidate the socio-demographics, clinical characteristics, tumor characteristics, treatment and survival outcome for patients diagnosed with breast cancer in Kijabe, Kenya between 2010-2021.

.To prospectively follow patients diagnosed with breast cancer at

Kijabe Hospital through their continuum of breast cancer to identify the factors and system dynamics associated with treatment default or completion.

.To assess the feasibility of the use of sentinel node biopsy to stage the axilla in early-stage breast cancer in Kenya.

Anticipated Outcomes

The study will:

- Add to the existing knowledge about breast cancer care in Kenya, reveal strategies for future interventions to address these barriers, and inform policy of the Ministry of Health regarding programs to improve access to care at multiple levels.
- Introduce a new approach to stage the axilla which, if shown to be feasible in an LMIC setting, would potentially spare many patients with early-stage breast cancer the morbidity of a complete auxiliary lymphadenectomy.

PALLIATIVE & SUPPORTIVE CARE SURVIVIRSHIP 1

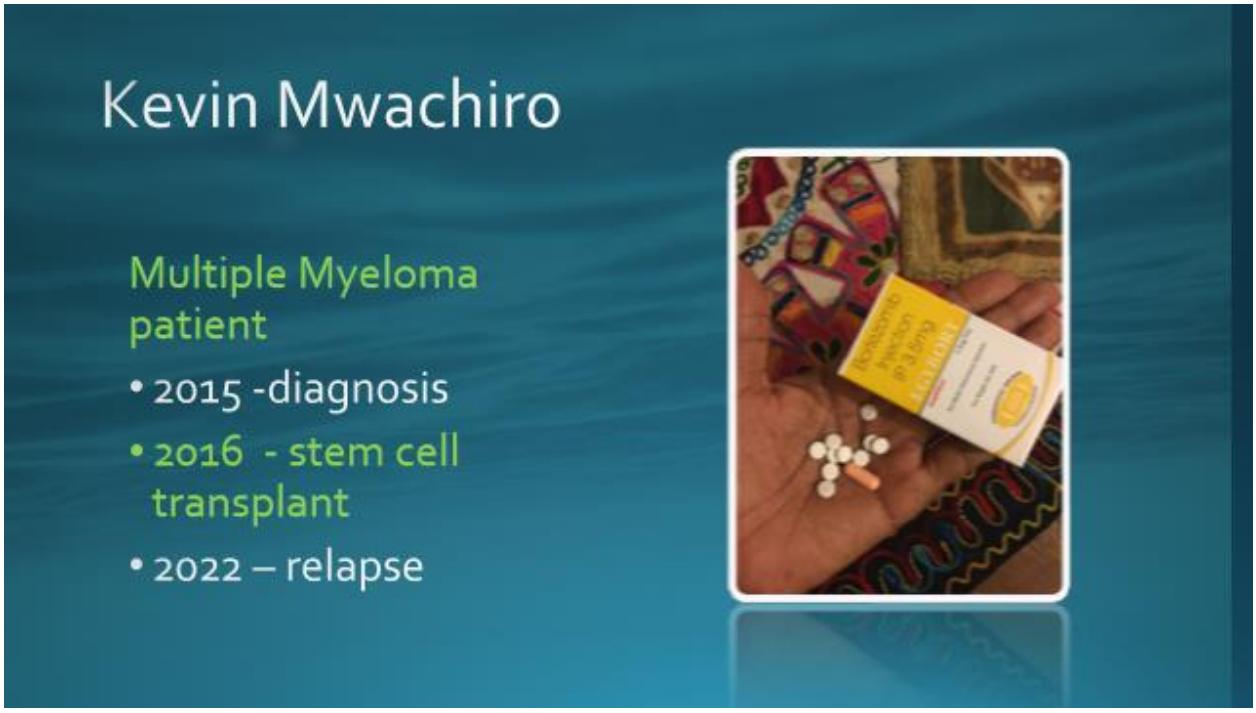
TOPIC: MULTIPLE MYELOMA PATIENT: 2015 DIAGNOSIS

SPEAKER: KEVIN MWACHIRO

Background

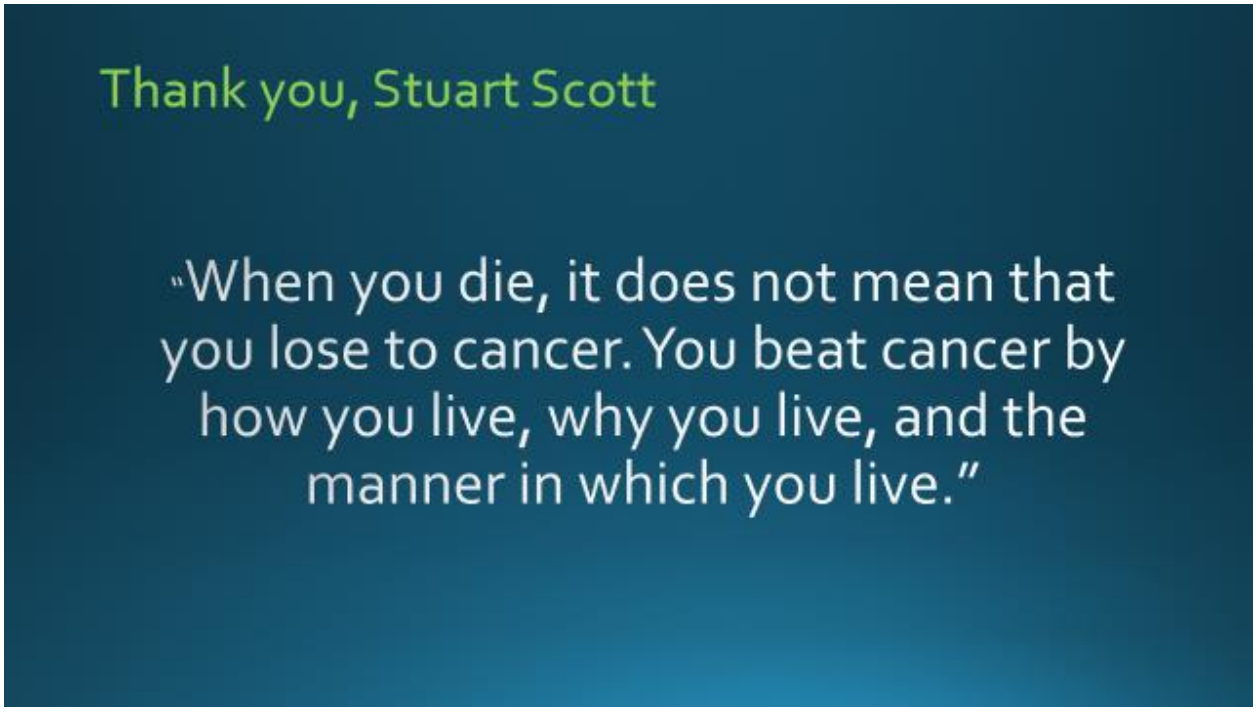
Kevin Mwachiro was diagnosed with Multiple Myeloma cancer in 2015.

In 2016, he underwent stem cell transplant.



Mwachiro does not see himself as a victim. He says with a smile" I did not choose cancer, but cancer chose me."

His favourite quote and one that he says has inspired him beyond anything else is from Stuart Scott.

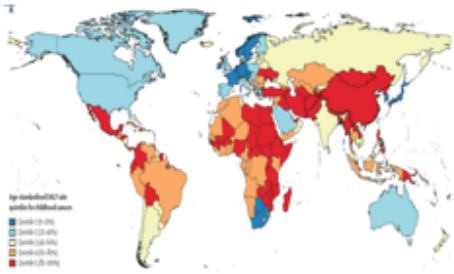


TOPIC: 'YOU CANNOT ESCAPE AND ABANDON THE CHILD, CAREGIVER PERSPECTIVES ON BARRIERS TO EFFECTIVE CHILDHOOD CANCER CARE IN KENYA: A QUALITATIVE STUDY

SPEAKER: VALERIAN MWENDA, MD, Msc, NATIONAL CANCER CONTROL PROGRAM, MoH KENYA

Background: childhood cancer (CC)

- Approximately 80% occur in LMIC[1]
- Cost-effective in all economic settings[2,3]
- Overall, better outcomes[4]
- Survival disparities: 20-30% in LMIC vs. 80-90% in HIC[5]
- Kenya is currently implementing decentralization of cancer care: regional centers
- Despite investments in cancer control in Kenya in the last 5 years, CC is characterized by late referrals and poor outcomes



https://www.thelancet.com/journals/lanonc/article/PIIS1470-2045(19)30339-0/fulltext

Objective

- Identify individual, health system and policy barriers to effective childhood cancer control in Kenya

Key findings

Theme1-Valerian Mwenda posits that understanding of the disease among the caregivers of children with cancer is varied: from modest understanding to individual and societal misconceptions.

Theme 2-Extended hospital stays are a major cause of distress for caregivers of children with cancer at KNH. This, sometimes has unexpected consequences, including disintegration of the family and other social structure for the children with cancer and their caregivers.

Theme 3- Reasons why children with cancer have extended hospital stays is:

financing challenges and the limited scope of the existing insurance

covers

Fragmented care.

Barriers and opportunities

Table 1: Barriers and opportunities to childhood cancer control in Kenya

Level	Key barrier	Opportunity
community	Low awareness	Community strategy
Health system	Low index of suspicion at primary care	Integration, capacity-building at primary care
Policy	Financing, Varying treatment protocols	UHC, decentralization of cancer care, harmonization of protocols

Recommendations

.Utilize existing (new) comprehensive cancer centers; strengthen specialized workforce

. No UHC without covering CC: Better outcomes, good return on investment

. Free childhood cancer treatment.

. Harmonization is key for LMICs: enables forecasting, regional procurement at competitive prices

Implement the current protocols.

. Research on efficacious regimens locally.

. NHIF: restructuring of the CC package; access programs, integration with existing programs and financing mechanisms.

. Clear monitoring and evaluation of implementation, strengthen governance structure at county level; development of CC action plans at county level.

TOPIC: BREAST CANCER: ONCE I OVERCAME BREAST CANCER, I WASN'T AFRAID OF ANYTHING ANYMORE

SPEAKER: SAJIDA ZAHIR

The following pictorial presentation by Sajida shows the genesis of her journey with breast cancer in 2016.

- **Lump for 2 days**
- **Ultra sound and biopsy**
- **Diagnosed on the 4th of July 2016.**
- **Family and I were left shocked, hurt and scared.**

My cancer Journey

Stop 1:Mastectomy:

- Very difficult decision
- 6th of July 2016 when I underwent a mastectomy.
- Beginning of long journey

Sajida says however that she went through a difficult terrain starting with the fact that cancer treatment was very expensive. But in the midst of that, the National Health Insurance Fund came in handy, friends and family support were all she needed.

"Socially and emotionally difficult, Support from doctors and nurses, life not the same as your appearance changes as well as losing of body part

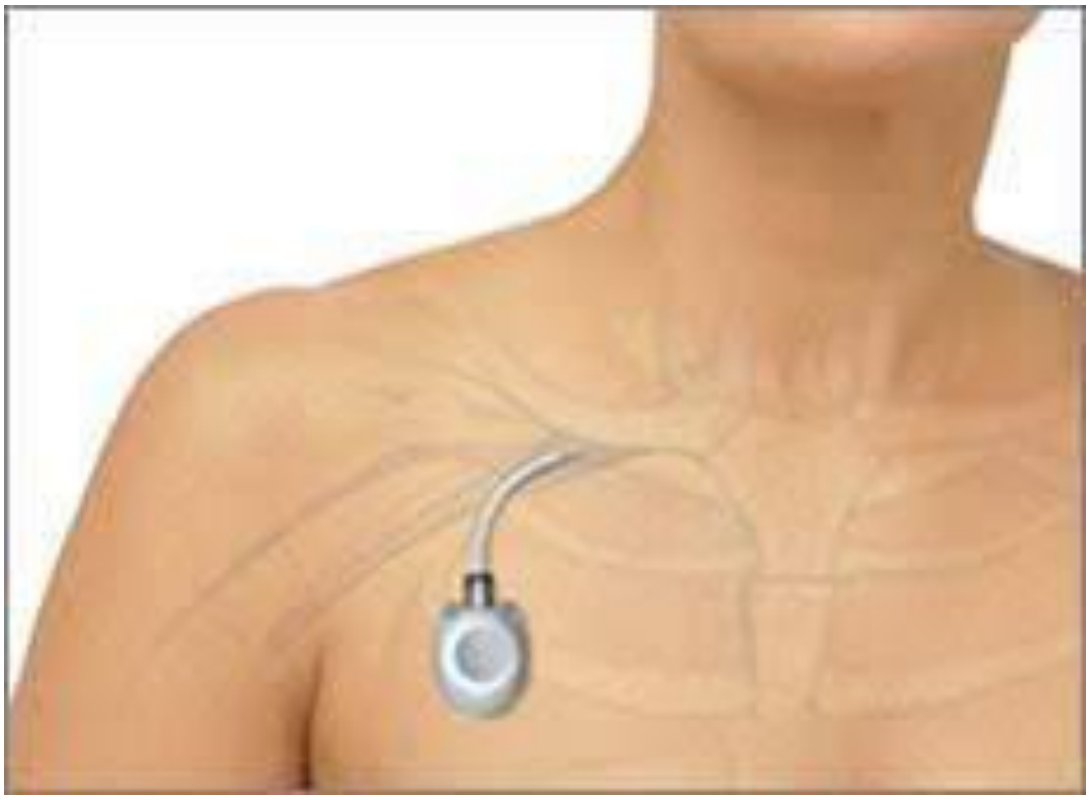
with long term treatment," she says.

TOPIC: PROFILE OF A SINGLE CENTRE ON USE OF CHEMOTHERAPY PORTS

SPEAKER: DR MITCHELLE OBAT

Background

Obat said that "infusional chemotherapy is standard of care to treat many malignancies. In an effort to optimize patient care we undertook a single institution study looking at the use of chemotherapy ports.Our aim was to better understand the risk and benefits of giving chemo through a port."



The above photo from Obat's presentation shows a picture of a man with receiving Chemotherapy through a port.

METHODOLOGY

-According to Obat, a retrospective review of 15 patients was undertaken from September 2021- July 2022.

- All 15 patients had chemo ports placed in the operating room by their

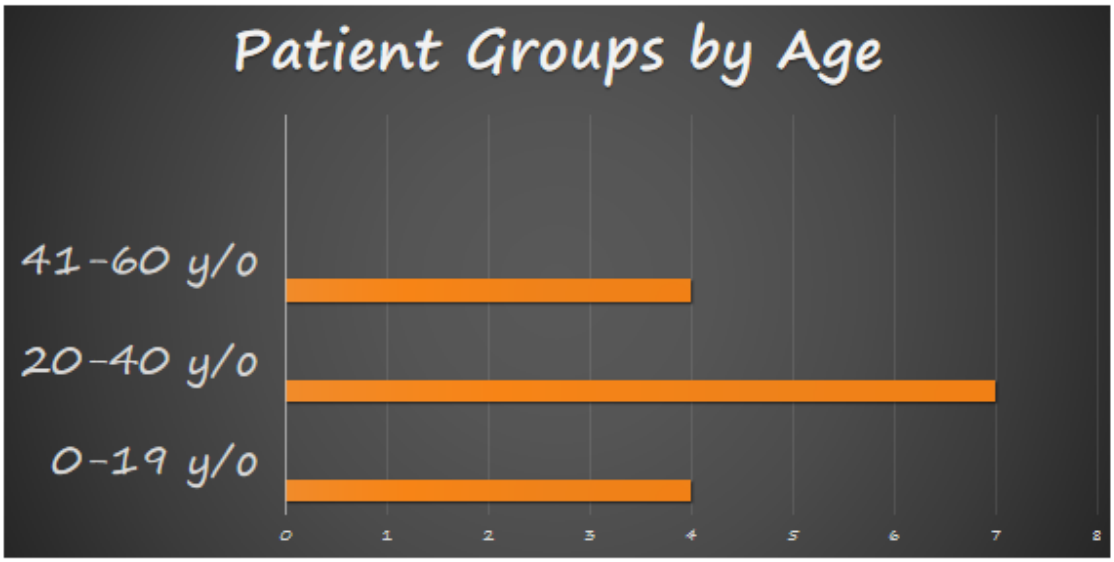
surgery team.

- Consent was obtained before the procedure.

-Chemo ports were placed in the left or right chest. No arm/inguinal ports were included in this retrospective review.

-Post-Op X-rays were obtained to verify port placement.

-Port care included sterile dressings and regular heparin flushes with every use.



Findings

"The early days were a steep learning curve but once the team became comfortable with the port access process, the following positive findings were recorded," Obat said.

Patients reported increased satisfaction with care including:

. Decreased number of sticks overall.

. Eliminated vein finding difficult in a hard stick population.

. Increased comfort of sticks as topical lidocaine was used prior to access.

. Reduced number of repeat access events as port needles stayed in place eliminating the need to start a new IV each day of treatment.

.Omitted hospital admission for the FLOT/FOLFOX patient group adding convenience and cost savings.

.No extravasations events/ reduced risk from harm of vesicants.

There were some negative findings too:

.One patient had a pneumothorax noted on his post op CXR.

.One incident of catheter fracture.

.User training costs and time for port care and use (it was considered to be well worth the investment after review)

Conclusion

Chemo ports offer many benefits and should be considered for cancer patients receiving systemic therapy. There has been an overwhelmingly positive experience including but not limited to:

. Faster infusion chair times due to improved access times.

. Decreased patient sticks – leading to increased nursing and patient satisfaction.

.Decreased extravasations events

"We did not observe any chemo port infections during our retrospective review. We continue to diligently maintain proper access protocols to keep our infection rate low given the risk of port infection. While not observed in this retrospective review, port occlusion is a known risk. We have had good success with our Heparin protocol. Staff and patient education vital in chemo port care and use," Obat concluded.

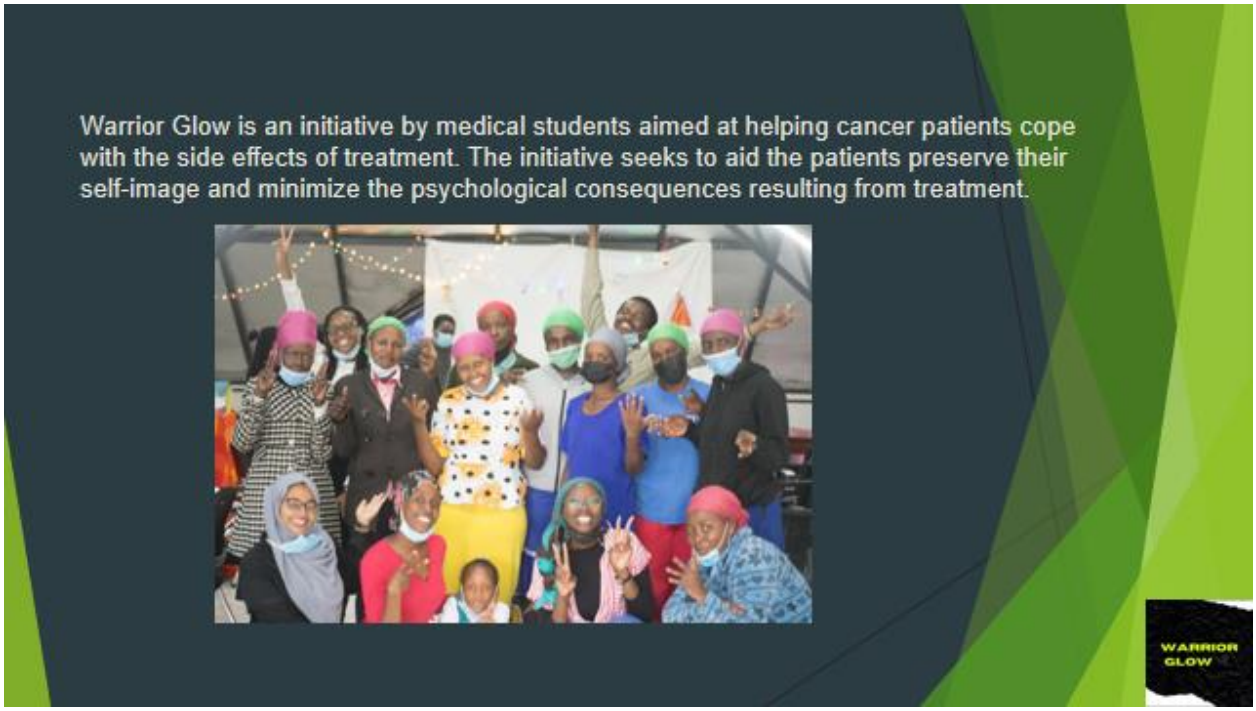
PALLIATIVE & SUPPORTIVE CARE/ SURVIVORSHIP 2

TOPIC: WARRIOR GLOW-A SUPPORTIVE CARE INITIATIVE FOR CANCER PATIENTS BY MEDICAL STUDENTS

SPEAKER WANGARI KINYANJUI, MBChB, UoN

Background

Warrior Glow is an initiative by medical students aimed at helping cancer patients cope with the side effects of treatment. The initiative seeks to aid patients to preserve their self-image and minimize the psychological consequences resulting from treatment.



According to Warrior Glow-Healing is multi-dimensional, in that involves wholeness physically, emotionally and mentally.

"Most treatments focus on the physical aspect which is important, but we cannot ignore the side effects of treatments such as chemotherapy and surgery."

"At Warrior Glow patients are taught coping strategies that are relatively easy to apply, relevant and whose utility provides patients with a sense of control. The side effects addressed so far are alopecia, keratinization and mastectomy."

Coping interventions include scarves for alopecia, breast prosthetics for mastectomy and nutrition education.

Methodology

The Team

- Approximately 175 members,
- who are mostly undergraduate medical students from UoN.
- Working closely with the CTC social service Department.
- There are 6 departments.
- Estimated 15 student volunteers per session

The Impact

- 6 sessions for the past year: 5 in KNH, 1 at Nairobi Hospice.
- About 20-30 patients per session, hence a total of 150 patients.
- Kshs. 77,326 was raised through donations by student, friends, family and well-wishers.

The Next Steps

- To conduct research studies on the impact of coping strategies for cancer treatment related side effects at KNH.
- Partnering with likeminded individuals, organizations, companies to expand the initiative for more impact.
- Provide Warrior Glow Care packages containing essential foodstuffs to our patients.

Conclusion

- Cancer and its treatment results in a complicated pattern of change in quality of life (QOL)
- Poor QOL can adversely influence patient's willingness to continue with and successfully
- complete treatment. Side effects of treatment also result in negative experiences that influence health seeking behavior
- KNH as a referral hospital receives patients from all over the country and beyond. As a teaching hospital, it has a vast number of medical students who have a definite role and responsibility towards patients
- Multidimensional approach recommends the use of both pharmacological and non-pharmacological modalities
- Supportive care is included in the Kenya National Cancer Treatment Protocols 2019. Warrior Glow provides a platform for the students to be part of the management of cancer patients. It also promotes awareness of cancer which helps in destigmatizing the illness

TOPIC: ETHICAL ISSUES FACED BY HEALTH CARE WORKERS (HCW) PROVIDING PALLIATIVE CARE (PC)

SPEAKER: SPEAKER: JOHN WERU, MBCHB, MPC, F-LDI, MAAHPM

Background

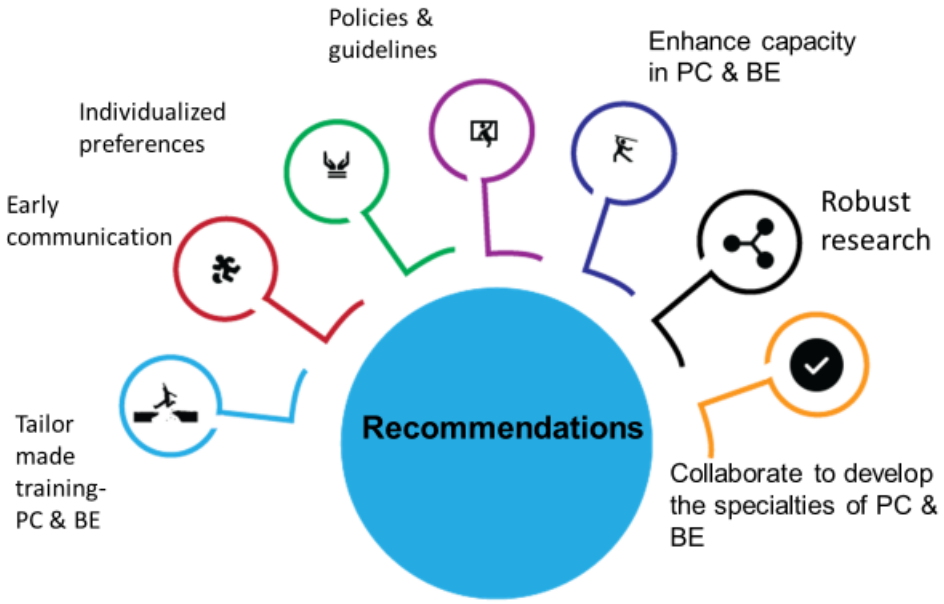
- Palliative Care has grown, medicine technologized, death medicalized,
- Palliative Care teams face dilemmas- appropriate care, who decides,
- Palliative Care and bioethics- “inseparable twins”

Discussions

- Growing interest in palliative care in Kenya across the various disciplines. PM a specialty.
- Derek in 2014/ Brooke et al 2018 -26/37 countries recognize PC as a specialty.
- Paucity of qualified PC HCP.
- Majority participants- nurses, female- gender influences all aspects of care, end-of-life preferences.
- Female more empathic/ compassionate.
- Cultural beliefs, values, family dynamics, & interrelationships influence care.
- Education vs practice settings.
- Failure to initiate ANH - difficult decision for family members and HCP.
- Feeding has social and cultural meaning.
- Utility and applicability of ADs -context and every patient's given situation.

Recommendations

The following figure adopted from Dr.John Weru's submissions shows the final recommendations.



TOPIC: PSYCHOLOGICAL DISTRESS IN CANCER PATIENTS AT THE KENYATTA NATIONAL HOSPITAL

SPEAKER: DR. ONG'ONDI MATILDA

Background

Dr. Ongondi began her presentation by defining distress. She submitted that: "a multi-factorial, unpleasant experience of a psychological (cognitive, behavioural, or emotional), social, spiritual, and/or physical nature that may interfere with the ability to cope effectively with cancer, its physical symptoms, and treatment."
She added that it extends from a continuum of common normal feelings of vulnerability, sadness and fears to problems that can become disabling, such as depression, anxiety, panic, social isolation, and existential and spiritual crisis.

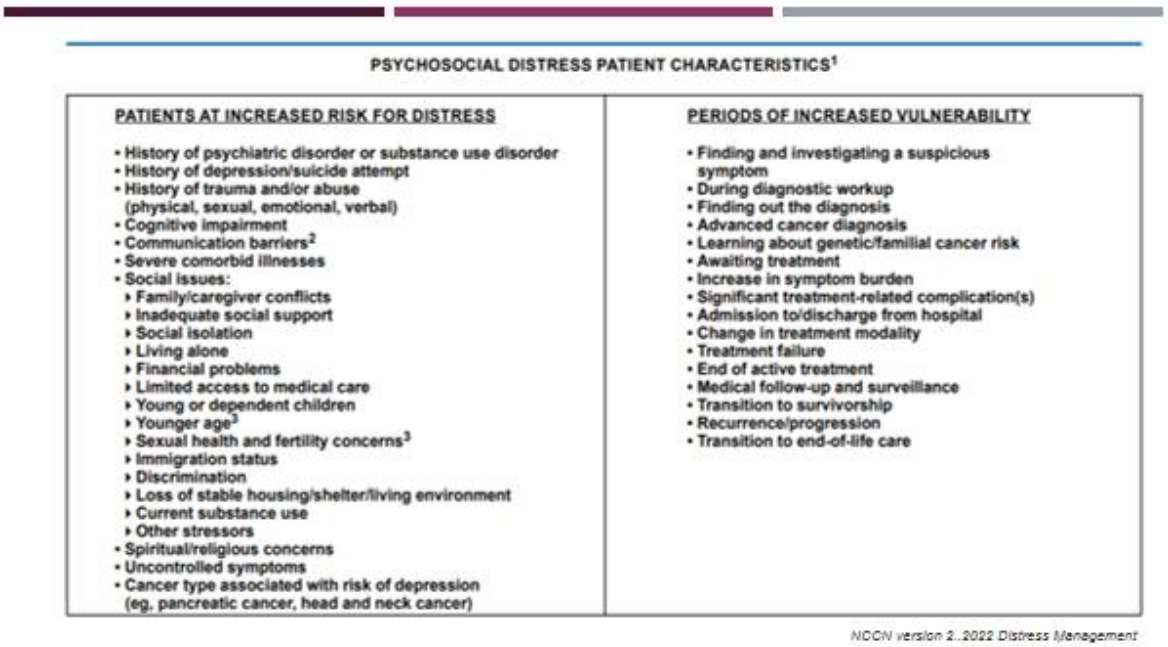
In her presentation citing Adler NE, Page AEK. Institute of Medicine (IOM) 2008, Cancer Care for the Whole patient: Meeting Psychosocial Health Needs. 2008, she posits that in 2007 the Institute of Medicine (IOM)

report on holistic approach to patients with cancer, recommended screening of distress and development of treatment plans as part of quality cancer care.
Various screening tools have been validated to objectively measure the levels of distress-NCCN Distress-Thermometer, Edmonton Symptom Assessment Scale (ESAS).

There is however little evidence of its use in sub-Saharan Africa, where the cancer burden continues to increase. Her study sought to evaluate the levels of psychological distress in patients with cancer
the impact of COVID-19 on psychological distress.

'Successful psychological distress management is pegged on healthcare providers being able to identify and assess distress in addition to Referral systems to qualified mental health professionals," Dr. Ongondi said.

The following figure shows Psychological Distress Characteristics in Patients.



CONCLUSION

One third of patients had high level of distress with majority having various problems on NCCN problem list highlighting the need to integrate screening and management of distress as a standard of cancer care.

TOPIC: IMPLEMENTATION OF PROJECT ECHO ON THE INTRODUCTION TO PALLIATIVE CARE FOR HUMANITARIAN HEALTH CARE WORKERS IN EAST AFRICA

SPEAKER: ERIN DAS, RN, DR MEGAN DOHERTY, MACKULINE ATIENO, RN

Background

Limited palliative care (PC) training is a significant barrier to improving access to PC for patients living with life-limiting illnesses in humanitarian settings. Project ECHO (Extension of Community Healthcare Outcomes) is a distance education program that connects experts to local healthcare workers (HCWs).

Objectives

- To develop a Project ECHO program focusing on the Introduction to PC for Humanitarian Settings targeting HCWs in the East Africa region.
- To implement 11 weekly sessions via distance learning using Zoom from May - July 2022.
- To improve access to PC training and education for HCWs living and working in remote locations such as refugee camps and humanitarian emergencies in East Africa.

Methods

A mixed methods approach was utilized with surveys at baseline, and will be followed by surveys and qualitative interviews upon program completion. Interviews will be recorded and transcribed, and emergent themes were identified.

Interventions

A needs-based curriculum was developed with each session including a didactic lecture from a specialist followed by case presentation and discussion with an emphasis on clinical practice change.

The team created a YouTube channel in which videos could be viewed after the live sessions for participants to follow up on content as well as Google Drives so that participants could access resources easily.

A WhatsApp group was formed to increase communication between the course coordinators, faculty participants and to share challenging patient cases throughout the 11 weeks for further advice and support.

Findings

- 281 HCWs registered for the first course May 17 – July 26th, 2022 80
- 100 participants signed into a virtual session for 1.5 hours each week for a total of 11 weeks.
- 17 faculties in total with expert PC consultants, physicians, nurses and social workers.
- Analysis from pre and post course surveys at ongoing, preliminary findings from tests showed improvement in knowledge.

Conclusion

Project ECHO is an effective tool to support PC education and training, which can support increased access to PC in humanitarian settings in East Africa.

TOPIC: APHON EDUCATION WITHIN THE GLOBAL SETTING

SPEAKER: JANIE AVILA

Background

The Mission and Vision of APHON, Avila says is "To support and advance nurses in optimizing outcomes for children, adolescents, young adults, and their families throughout the continuum of care for their blood disorders and cancers."

She added that Paediatric haematology and oncology nurses are setting, advocating for, and achieving the highest standards of care for children, adolescents, young adults, and their families.
Essentially, APHON is a national organization in the USA. It is the professional organization for paediatric haematology/oncology nurses and other paediatric haematology/oncology healthcare professionals.

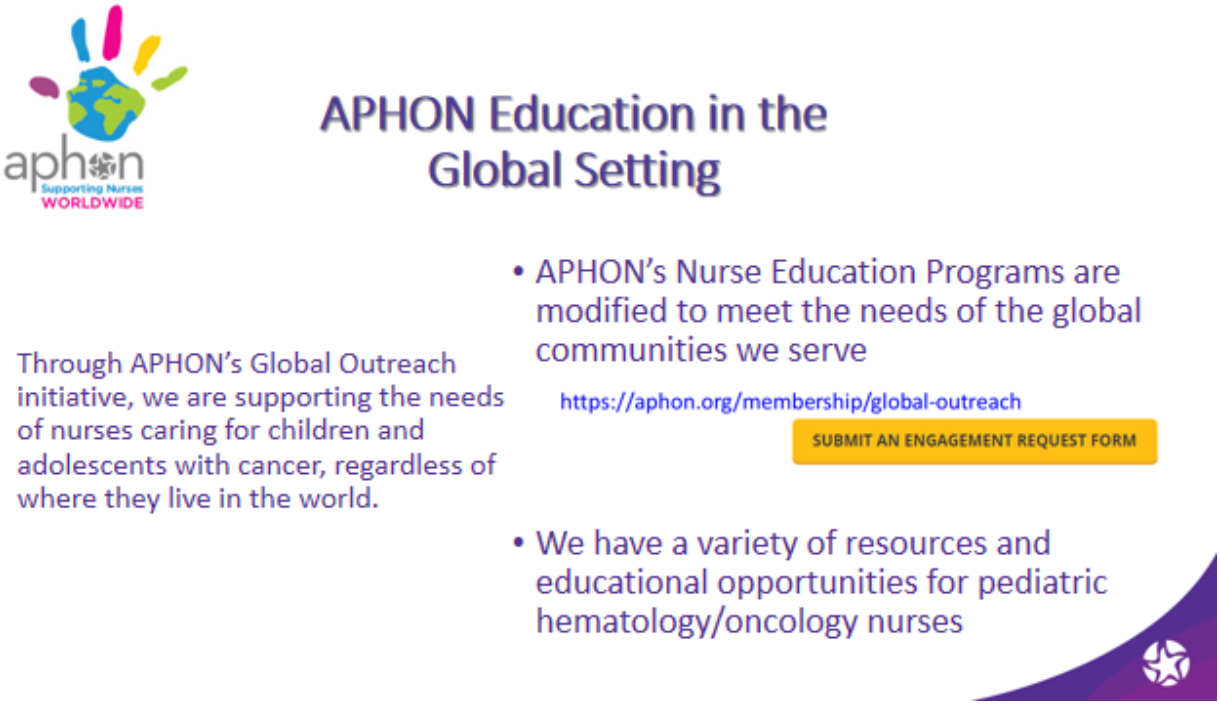
APHON members are dedicated to promoting optimal nursing care for children, adolescents, and young adults with cancer and blood disorders, and their families.

APHON provides leadership and expertise to paediatric haematology/oncology nurses by defining and promoting the highest

standards of practice and care to the paediatric, adolescent, and young adult communities.

Why Do We Want Help?

Nurses in limited-resource countries often lack access to essential paediatric oncology education and resources.
We believe that by equipping paediatric oncology nurses with the knowledge and a professional network, we will help improve childhood cancer outcomes influenced by nursing care.



This APHON Global initiative, stewarded by the Global Outreach Committee increases access to paediatric oncology nursing education and resources through providing:

-APHON Chemotherapy/Biotherapy Provider courses internationally.
-Two scholarships for nurses from low- or middle-income countries to attend the APHON Annual Conference and exhibit each year; plus a male nurse scholarship from low- or middle-income country.
-A drawing for APHON educational resources.

"The APHON Chemotherapy/Biotherapy Provider Program is designed to provide nurses with information about how to safely administer chemotherapy and biotherapy to children and adolescents with cancer," says Avila.

She added that, it is the only program of its kind and now a criterion of the U.S News and World Report Best Children's Hospital.

Benefits of Membership

. Professional Development
. Networking Opportunities
. Exclusive Member-Only Resources
. Education
. Conferences

DAY ONE BREAK-OUT SESSIONS- A3

HAEMATOLOGY 1

TOPIC: ONE YEAR SURVIVAL AND PROGNOSTICATORS OF ADULTS WITH ACUTE LEUKEMIA AT THE UGANDA CANCER INSTITUTE

SPEAKER: BARBRA NATUKUNDA, MBchB, MMed. Int Med, UGANDA CANCER CENTRE INSTITUTE

Background:

Acute leukaemia is associated with substantial morbidity and mortality, particularly in the adult population. There has been an increasing incidence globally in adults and this continues to be so due to occupational, environmental and chemotherapy exposures.

Dr. Natukunda noted that large disparities exist between resource rich and resource limited settings in incidence, short and long-term outcomes of the disease. "Anecdotal reports from UCI show that survival of patients with acute leukaemia is poor, partly due to the varied clinical characteristics and the uneven distribution of prognostic factors".

Study Objective:

The objective of the study was to describe the characteristics, survival and prognostic factors of adult patients with acute leukaemia at the Uganda Cancer Institute.

The study was approved by the Makerere University School of Medicine and Ethics Committee

Methods:

- The methodology used was a descriptive, retrospective, chart review study at UCI from January 2010 to December 2019
- Patients aged 18 years or older who had a confirmed diagnosis of acute leukaemia were included
- Those who had blast phase CML and those who had received any chemotherapy outside UCI were excluded

Data Analysis:

- Baseline demographic and clinical factors of the patients were described using the proportions for categorical data, for continuous data, means or standard deviations were used if normally distributed and median interquartile ranges were skewed
- Kaplan Meier statistical method was used to analyze the time to event data
- All factors associated with survival were analyzed by using bivariate analysis (Cox- proportional hazards regression model), $p<0.05$ was considered statistically significant

Key Results

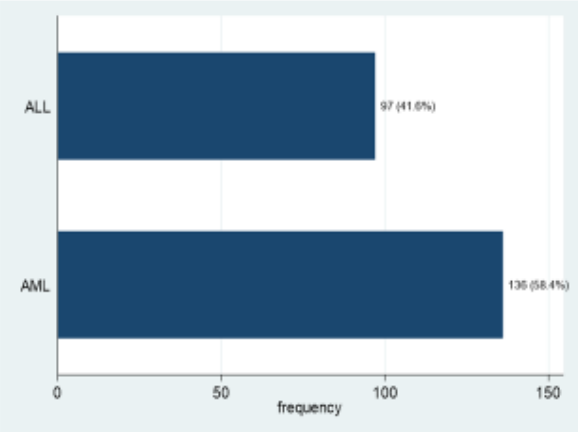
- Of the 300 charts of adult patients diagnosed with acute leukaemia at the UCI between January 2009 to December 2018, 233 charts were eligible
- Majority were male 59.2% (138) and 45.5% (106) had an informal employment
- Median age was 32 years

Those excluded from the study included:

- 24 unconfirmed diagnosis of acute leukaemia
- 27 were grossly missing data
- 7 diagnoses of blast phase chronic myeloid leukaemia

Baseline characteristics

- Total 233 patients included in the study
- Majority were male (59.2%, n=138) and 45.5% (n=106) had an informal employment
- Median age was 32 years (IDR: 18 - 78 years)



Prognostic Factors

Factors associated with mortality were:

- Female gender (HR: 2.8, 95% CI: 1.2 – 6.7, P=0.022)
- Overweight (HR: 4.2, 95% CI: 1.3 – 13.4, P=0.001),
- Refractory response after first induction (HR: 2.8, 95% CI: 1.0 – 8.2, P=0.063

Study strengths

- This is the first study on characteristics, survival and prognostic factors of acute leukaemia among adults over a ten-year period in Uganda.
- The findings inform prospective studies on acute leukaemia in Uganda

Study weaknesses

- A retrospective design was used
- Missing data on several fields was encountered
- Certain important factors associated with survival could not be assessed through this retrospective chart review study, these

included compliance to treatment, dose of treatment, acute leukemia cancer and host biology among others

Conclusion

- Most patients were male, less than 35 years old.
- The most common diagnosis was AML.
- The overall survival for acute leukaemia is poor (16.5% at 1 year)
- Being female, over- or underweight, having a poor ECOG score, failure to achieve CR after induction chemotherapy are factors associated with poor outcome of acute leukemia.
- Proposed prospective studies to better understand causes of early mortality and poor overall survival among acute leukemia patients in Uganda.

TOPIC: EPIDOMOLOGY, TREATMENT AND OUTCOME OF CML IN KENYA: FINDINGS FROM CML REGISTRY

SPEAKER: VALERIAN MWENDA; MD, Msc

Background

Chronic Myeloid Leukaemia is a clonal Myeloproliferative Neoplasm characterized by a reciprocal translocation between chromosomes 9 and 22. It affects all age groups but is predominant in adults and is characterized by three phases:

- Chronic/ stable
- Accelerated
- Acute

Imatinib Mesylate, an inhibitor of BCR-ABL revolutionized treatment and outcome of CML. A failure rate of imatinib of about 15% exists and is

partially addressed by second and third generation Tyrosine Kinase Inhibitors, TKIs

Background: CML Registry

In her presentation, Dr. Mwendwa observed that cancer registration is essential for cancer control in order to "provide accurate epidemiological and clinical information on CML in Kenya."

She informed delegates that The Glivec International Patient Assistance Program (GIPAP) provides support for most CML patients in Kenya, adding that The Kenya Society for Haemato-oncology (KESHO) and National Cancer Control Program (NCCP) collaborated to establish a special CML registry in 2021.

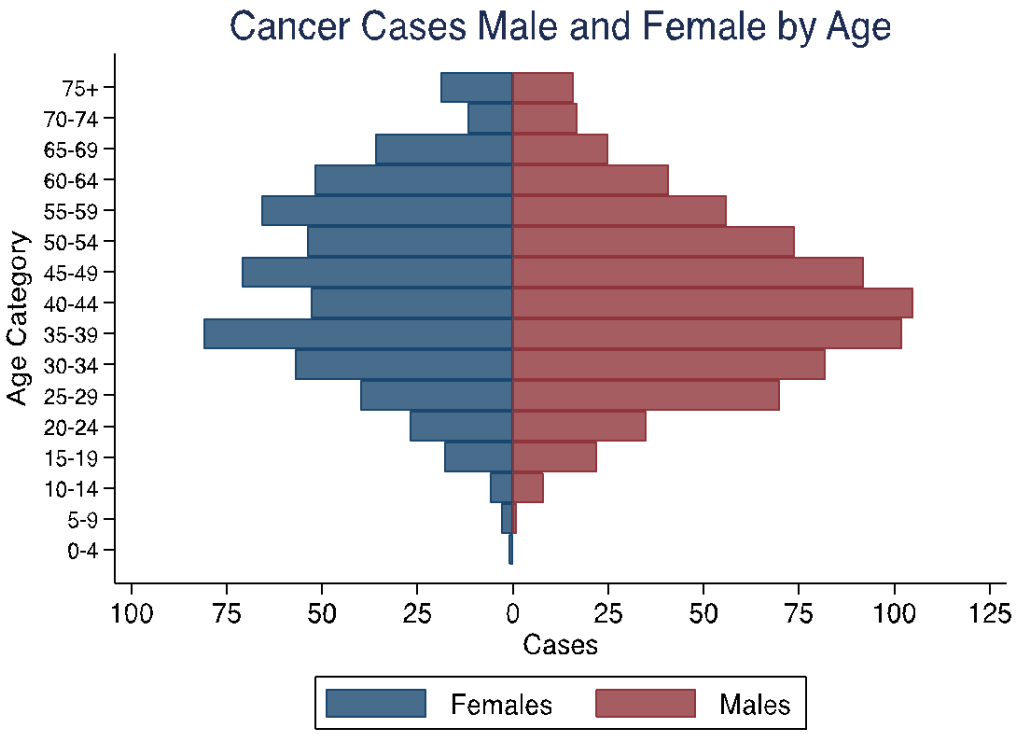
Methods

- Partnerships: KESHO/NCCP supported by Novartis
- Collaboration to establish a special CML registry in 2021.
- A case report form with core minimum variables
- Electronic database created, using Epi Info software (US CDC, Atlanta, GA)
- Cancer registrar abstracted, entered and updated data
- Data analysis was conducted using Stata 17 (StataCorp. College Station, TX)
- Descriptive epidemiology of CML cases

Results:

- Cases were sampled from all 47 counties
- Majority of the cases were recorded in Nairobi county at 23%, Kiambu county at 8.0% and Nakuru county at 6%.

Age Distribution by Gender was presented as shown below



Source: CML Registry Data, 2022

Treatment Outcomes

Treatment Outcomes

First line (n=1347)

Type of TKI initiated, n (%)	n(%)
Imatinib	1319 (99.8)
Nilotinib	1 (0.1)
Dasatinib	1 (0.1)

Second line (n=206 [15.6%])

Reasons for starting		Second line drugs	
Treatment failure	148 (79.1)	Bosutinib	50 (24.4)
Adverse event	31 (16.6)	Dasatinib	100 (48.8)
Drug stock-out	1 (0.5)	Imatinib	1 (0.5)
Other	7 (3.7)	Nilotinib	38 (18.5)
		Ponatinib	16 (7.8)
		Bosutinib	50 (24.4)

Third line (n=47 [3.5%])

Reasons for starting		Third line drugs	
Adverse event	19 (40.4)	Bosutinib	11 (22.9)
Treatment failure	12 (25.5)	Dasatinib	19 (39.6)
Drug stock-out	1 (2.1)	Imatinib	3 (6.2)
Other	15 (31.9)	Nilotinib	2 (4.2)
		Ponatinib	13 (27.1)
		Bosutinib	11 (22.9)

Treatment Outcome

Type of TKI initiated, n (%)	n(%)
Alive	1151 (85.4)
Loss to follow-up	185 (13.7)
Deaths	11 (0.8)

Discussion

- Male preponderance is consistent with global trends
- The median age of occurrence is younger compared with global patterns
    - ✓ Likely due to a younger population compared to High-income countries, or biological differences
- About 15% failure rate on imatinib first-line therapy is similar to the experience from high-income countries [4,5] as well as LMIC
- The most preferred second-line TKI was dasatinib, based on availability and toxicity profile
- Two thirds of patients were still on follow-up after five years; a study in Rwanda had a lower LTFUP of 6%

Conclusion and Recommendation

- Special registries can inform both clinical and policy practice
- The CML registry should be sustained, and lessons adopted for other unique priority cancers in Kenya
- Registry to be expanded to cover other centres where the program has been decentralized

TOPIC: HODGKIN'S LYMPHOMA AT OCEAN ROAD CANCER INSTITUTE, TANZANIA: A COMPARISON OF CLINICAL PROFILE AND TREATMENT OUTCOME ACCORDING TO HIV STATUS

SPEAKER: MERCY MBAI, MBchB, MMed

Background

Hodgkin's lymphoma is a general center, B cell malignant disorder. HIV infection has been linked to an increase in lymphomas. Before the introduction of HAART, HIV –HL had a very poor prognosis. The

development of HAART has greatly altered the natural history and risk stratification of HIV-HL.

The study was aimed at determining the differences in clinical pathological patterns and survival of HL among patients with HIV and those without in Tanzania.

Method

The methodology used was study design/ population which was a single hospital-based retrospective study. It was done at Ocean Road Cancer Institute (ORCI) that included all patients with HL from January 2016 to December 2019 and met the eligibility criteria. The sample size was 83 patients.

The inclusion criteria included

- Histologically confirmed HL patients
- Patients with a confirmed HIV status
- Above 18 years of age
- Patients treated with ABVD as the primary chemotherapy.

Those excluded were

- Those with secondary malignancy and
- Incomplete medical records

Data analysis

SPSS v.25 was used for statistical analysis and survival curves were drawn using the Kaplan- Meier method.

Results

The prevalence of HIV positive status was 27.7%

- In the high income countries, prevalence of HIV in HL has been seen to be varied, being very low in the US at 3.8- 5%, while in the UK it

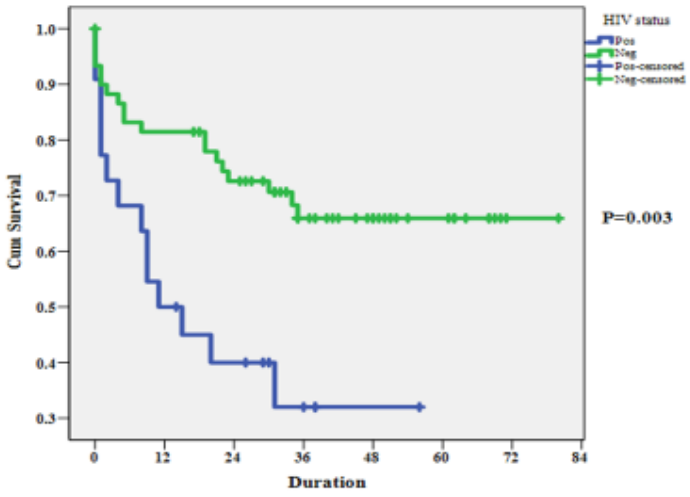
was quite high at 41.5% between the years of 1997- 2010. In Africa, South Africa was at 25% and Malawi at 33%

- In Tanzania, the prevalence rate was 44.4% 20 years ago

OS of HIV-HL vs non-HIV-HL

The median survival time for HIV-HL was 12 months and that for non-HIV-HL was 72 months.

The 2-years OS rate for HIV-HL was 34% and that for non-HIV-HL was 67%



Dr. Mbai listed the predictors of survival among HIV-HL as follows:

- CD4 count and the
- Use of HAART as well as the duration of use

In the entire cohort, factors that led to a lower survival included:

- Poor performance status (P=0.000)
- Abdomen as the primary site (P=0.002)
- Presence of B symptoms (P=0.005)
- Low HB level <10.5g/dl (P=0.01)
- High LDH level >500 U/1(P=0.000)
- Advanced stage of disease (P=0.000)
- Low number of chemotherapy cycles received (P=0.000)

Conclusion:

- The 2 – years OS rate for the entire cohort was 58%, for HIV –HL was 34% and for non HIV-HL was 67%
- HIV positivity is still a poor prognostic factor in Tanzania's setting especially for patients not on HAART, on HAARTfor less than 10 months, or with a low CD4 count below 200 cells/mm3. However, the clinical profile for the HIV-HL cohort is quite similar to that of the non HIV-HL cohort with non-significant differences in sex, histology type, primary site of presentation, presence of B-symptoms, stages, hemoglobin level and ECOG status.

TOPIC: IMPACT OF EMICIZUMAB ON BLEEDING RATES IN THE MANAGEMENT OF PERSONS WITH HEMOPHILIA A AND INHIBITORS AT MTRH

SPEAKER: DR CAROLE KILACH

Background

Inhibitors in haemophilia are IgG alloantibodies to exogenous clotting factor VIII (FVIII) or factor IX (FIX) that neutralize the function of infused clotting factor concentrates (CFCs). 20-25% of Persons with haemophilia A (PWH) develop inhibitors in their lifetime. The development of inhibitors is one of the most serious complications in the management of persons with haemophilia (PWH).

It renders factor replacement therapy ineffective for both prophylaxis and on-demand treatment, requiring the use of bypassing products. In her presentation, Kilach said that even though Inhibitor testing is critical in order to offer effective treatment; this has not been fully implemented in resource-limited settings. Kenya is currently getting it as a donation by the World Federation of Haemophilia which started the 1st prophylaxis program in the country.

Method

- PWH who presented at the Moi Teaching and Referral Hospital (MTRH) between September 2021 and July 2022 were tested for inhibitors using the classical Bethesda method.
- The test included a cohort of 12 PWH A with a confirmed diagnosis of inhibitors and 18 PWH A without inhibitors.

Results

- In total, 74 PWH A were tested, 12 (16.2%) of whom had inhibitors
- Their inhibitor titer calues ranged from 0.98 to 32 Bethesda Unit (B.U), %5(42%) low responders and 7 (58%) high responders.
- The 12 PWH A and inhibitor were then initiated on Emicizumab prophylaxis treatment
- Before the initiation of Emicizumab, their average ABR was 10.5, after 10 months of Emicizumab prophylaxis treatment their ABR was reduced to 0.75 (92.8%).
- 3 patients underwent minor dental procedures without requiring bypassing agents.
- 1 patient had a tibia fracture which was managed conservatively with moderate clotting factor concentrates.

Conclusion and recommendation

- Routine inhibitor testing with the diagnosis of positive inhibitors in PHW A informed change of treatment regimen with the novel Emicizumab prophylaxis which led to ABR reduction by 92.8%.
- The impact of reducing ABR and improving quality of life has been significant; there were improvements in patients' joint health, and mobility, with fewer sick days from school, work, or hospital visits.

- The researchers therefore we recommend prophylaxis with Emicizumab for PWH A and inhibitors in Kenya

HAEMATOLOGY 2

TOPIC: A MODEL FOR LMIC FOR IMPROVING ACCESS TO SCT/ STEM CELL TRANSPLATANTION IN LOW AND MIDDLE INCOME COUNTRIES

SPEAKER: DR. SACHIN JADHAV – GROUP HED, HAEM &BMT, HCG GROUP OF HOSPITALS

Background

Dr. Jadhav began his presentation with data showing the disparity in the number of stem cell transplantations done annually between high income countries and LMIC. There are over 40, 000 Stem Cell Transplantations conducted in high income countries annually. This, compared to 2,600 STC done yearly in LMIC such as India and Africa, where the population stands at 1.4 billion people for both.

Dr Sachin gave a 3-part analysis of why there are so few STCs in LMIC as follows:

The Problem:

- Inadequate availability of SCT services in LMICs
- No National/Regional guidelines for quality management
- No standardization of training for doctors and nurses

Current Process:

- Recruit a Transplant Physician
- Lack of knowledge and expertise for Program creation

The Goal

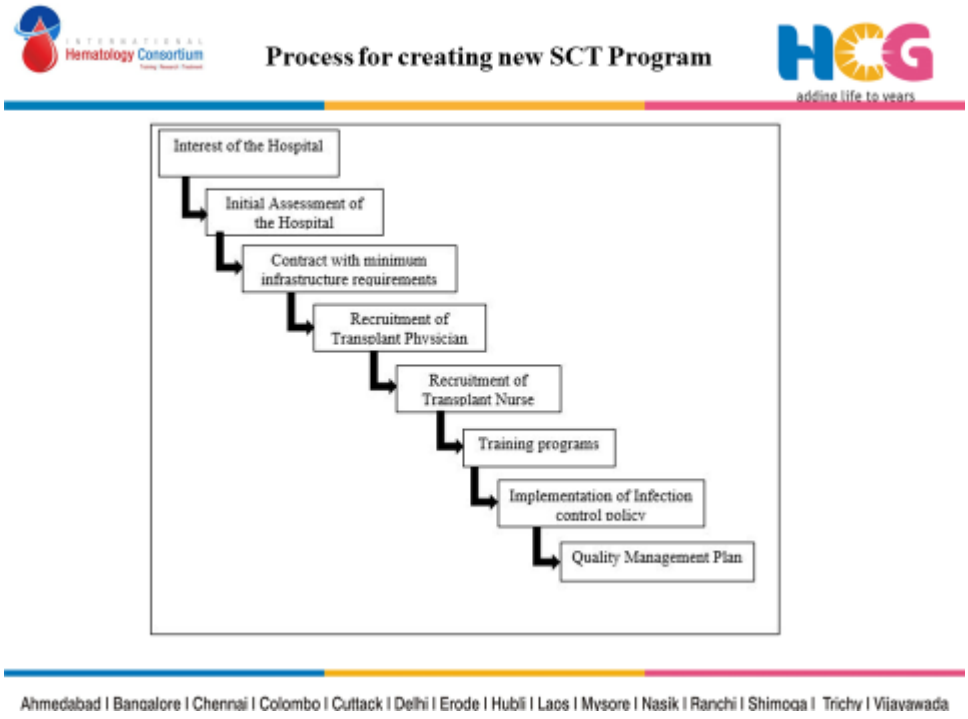
- Create Transplant Centres with minimum, essential Quality Management Plan
- Improve access to SCT

Challenges of creating SCT programs in LMICS:

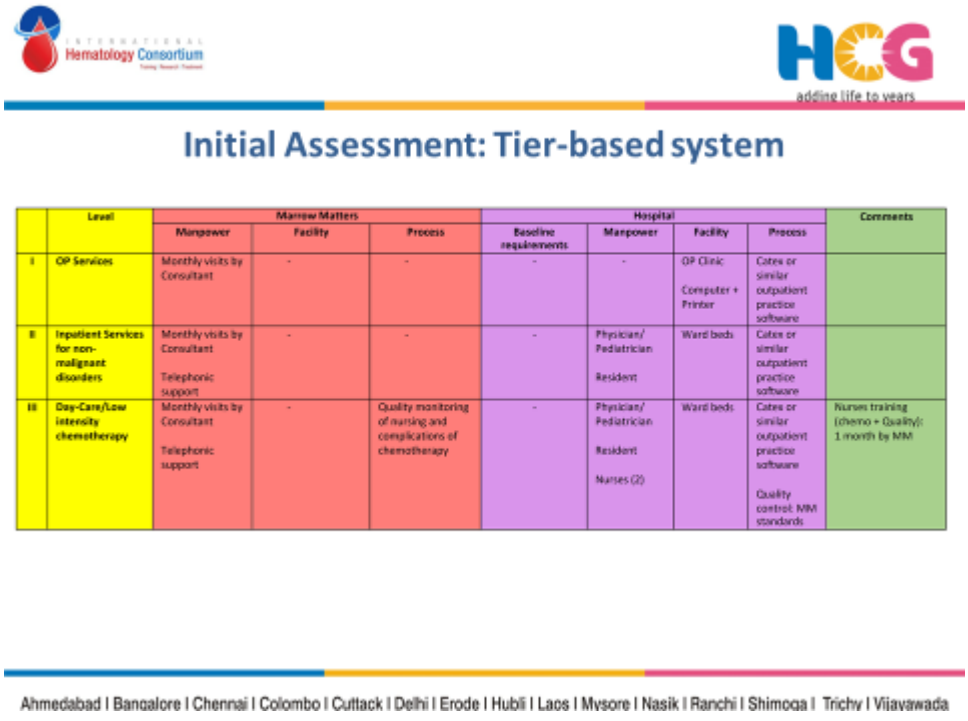
- Lack of trained doctors
- Quality Management Plan
- Sustainability

Our Model

Dr Sachin showed the model for creating SCT programs as shown below:



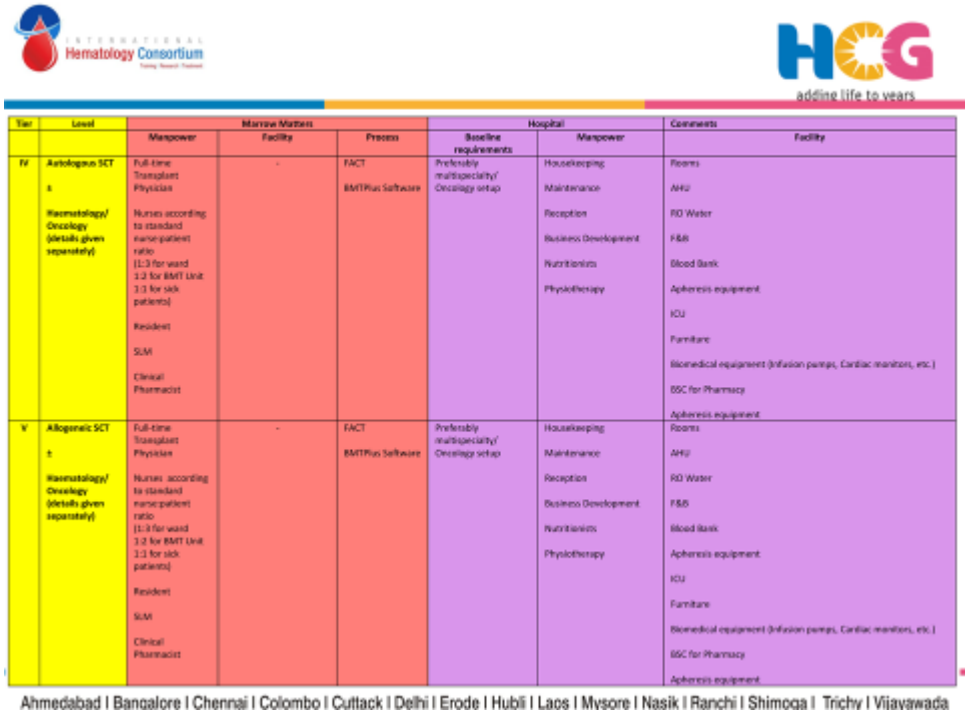
Initial Assessment: Tier based System



Initial Assessment: Tier-based system

	Level	Marrow Matters			Hospital				Comments
		Manpower	Facility	Process	Baseline requirements	Manpower	Facility	Process	
I	OP Services	Monthly visits by Consultant	-	-	-	-	OP Clinic Computer + Printer	Cotes or similar outpatient practice software	
II	Inpatient Services for non-malignant disorders	Monthly visits by Consultant Telephonic support	-	-	-	Physician/ Pediatrician Resident	Ward beds	Cotes or similar outpatient practice software	
III	Day-Care/Low intensity chemotherapy	Monthly visits by Consultant Telephonic support	-	Quality monitoring of nursing and complications of chemotherapy	-	Physician/ Pediatrician Resident Nurses (2)	Ward beds	Cotes or similar outpatient practice software Quality control: MM standards	Nurses training (chemo + Quality): 1 month by MM

Ahmedabad I Bangalore I Chennai I Colombo I Cuttack I Delhi I Erode I Hubli I Lacs I Mysore I Nasik I Ranchi I Shimoga I Trichy I Vijayawada



Tier	Level	Marrow Matters			Hospital		Comments
		Manpower	Facility	Process	Baseline requirements	Manpower	Facility
IV	Autologous SCT & Haematology/ Oncology (details given separately)	Full-time Transplant Physician Nurses according to standard nurse:patient ratio (1:3 for ward 1:2 for BMT Unit 1:1 for sick patients) Resident SLM Clinical Pharmacist	-	FACT BMTPlus Software	Preferably multispeciality/ Oncology setup	Housekeeping Maintenance Reception Business Development Nutritionists Physiotherapy	Rooms AHU RO Water F&B Blood Bank Apheresis equipment ICU Furniture Biomedical equipment (Infusion pumps, Cardiac monitors, etc.) BSC for Pharmacy Apheresis equipment
V	Allogeneic SCT & Haematology/ Oncology (details given separately)	Full-time Transplant Physician Nurses according to standard nurse:patient ratio (1:3 for ward 1:2 for BMT Unit 1:1 for sick patients) Resident SLM Clinical Pharmacist	-	FACT BMTPlus Software	Preferably multispeciality/ Oncology setup	Housekeeping Maintenance Reception Business Development Nutritionists Physiotherapy	Rooms AHU RO Water F&B Blood Bank Apheresis equipment ICU Furniture Biomedical equipment (Infusion pumps, Cardiac monitors, etc.) BSC for Pharmacy Apheresis equipment

Ahmedabad I Bangalore I Chennai I Colombo I Cuttack I Delhi I Erode I Hubli I Lacs I Mysore I Nasik I Ranchi I Shimoga I Trichy I Vijayawada

Financial implications of this model to the hospital was the purchase of capital equipment such as Apheresis machine, biological safety cabinet, cardiac monitor, infusion pump, civil works modifications, software,

furniture and computers which totalled to USD 86,500. The hospital made return of investment between 18 -24 months.

Steps for creating a new SCT in LMIC:

- Initial visit and gap analysis
- Identify transplant physician, nurses and apheresis team
- Training and share SOPs
- Pre-transplant evaluation and consenting
- Start G-CSF
- Central transplant team reaches 2 days before harvest (2 physicians, 1 senior nurse and stem cell director)
- Proceed with harvest, conditioning regimen and stem cell infusion
- 1 physician and stem cell director return to India

Specific details of the SCT Program at Muhimbili National Hospital, Dar-es-salaam Tanzania

Observations

- The project has been detailed in 4 stages for ease of description:
  - **Stage 1:** Preparatory work which was performed by the Government of Tanzania, as well as the administrators and clinicians from Muhimbili National Hospital (MNH) (July 2017-September 2021)
  - **Stage 2:** Exploratory Gap Analysis by the teams from MNH and International Hematology Consortium of HCG Hospital, India (HCG-IHC) in October 2021
  - **Stage 3:** Activities for closure of gaps (November 2021)
  - **Stage 4:** Stem Cell Transplantation Camps (November 2021 to March 2022)

Stage 1: Preparatory Work

- Haematologists, Oncologists, Nurses and Pharmacist underwent series of trainings at HSCT centres in India
- A committee of the key stake holders was formed by the Government of Tanzania in June 2019
- Cost analysis of the components required for a stem cell unit were discussed
- The Government of Tanzania approached the International Haematology Consortium (IHC) of HealthCare Global (HCG) Hospital, India
- September 2021: collaboration was created between MNH and IHC

Stage 2: Gap analysis

- An initial on-site gap analysis was done by the HCG-IHC team at MNH Upanga and Mloganzila campuses
- A list of the available and the non-available resources were made

Stage 3: Gap Closure

- **4 teams were created each headed by a member of the IHC group:**

- Supervisory team
- Physician team
- Nursing team
- Stem cell laboratory team

Stage 4: HSCT Details

- MNH Team

- screened 8 patients and selected 5 myeloma patients who were in ≧partial remission

- Pre-transplant workup and consenting

- HCG-IHC Team flew to MNH for hands-on training and HSCT

- Duration of stay at Dar-es-salaam

- HOD and Stem Cell Director: 8 days

- Transplant Physician and Senior Nurse: 5 weeks

Outcomes from Tanzania

- The median duration of hospital stay was 19±6 days

- Post-discharge review by the Tanzania team

- Median time to engraftment

    - neutrophil: 8.8± 0.8 days

    - Platelet: 9.6±2.4 days

- Median follow-up 75.45 days post-transplant (33-126 days)

- Progression free survival was 100%, and there was no mortality

The table below shows the challenges of the SCT trial, interventions, results and future

ROCHE SPONSORED SESSION

TOPIC: MAXIMIZING PATIENT OUTCOMES IN DLBCL

SPEAKER: ANNE NKIROTE MWIRIGI, CONSULTANT HAEMATOLOGIST- AGA KHAN UNIVERSITY HOSPITAL, NAIROBI

Background

DLBCL (NOS) is the most common type of large cell lymphoma accounting for 30% of non- Hodgkin Lymphoma.

Risk factors for development of DCBCL include

- Family history; genetic susceptibility loci
- Viruses- EBV, HIV, HHV8, Hepatitis B, Hepatitis C
- Solid organ transplantation
- B- cell activating autoimmune disorders (SLE, Sjogren's Syndrom, Celiac disease
- Immunodeficiency
- Increased body mass index (in young adults)
- Agricultural pesticides
- Ionizing radiation

It is a heterogeneous disease, with molecular sub types which have distinct genetic profiles.

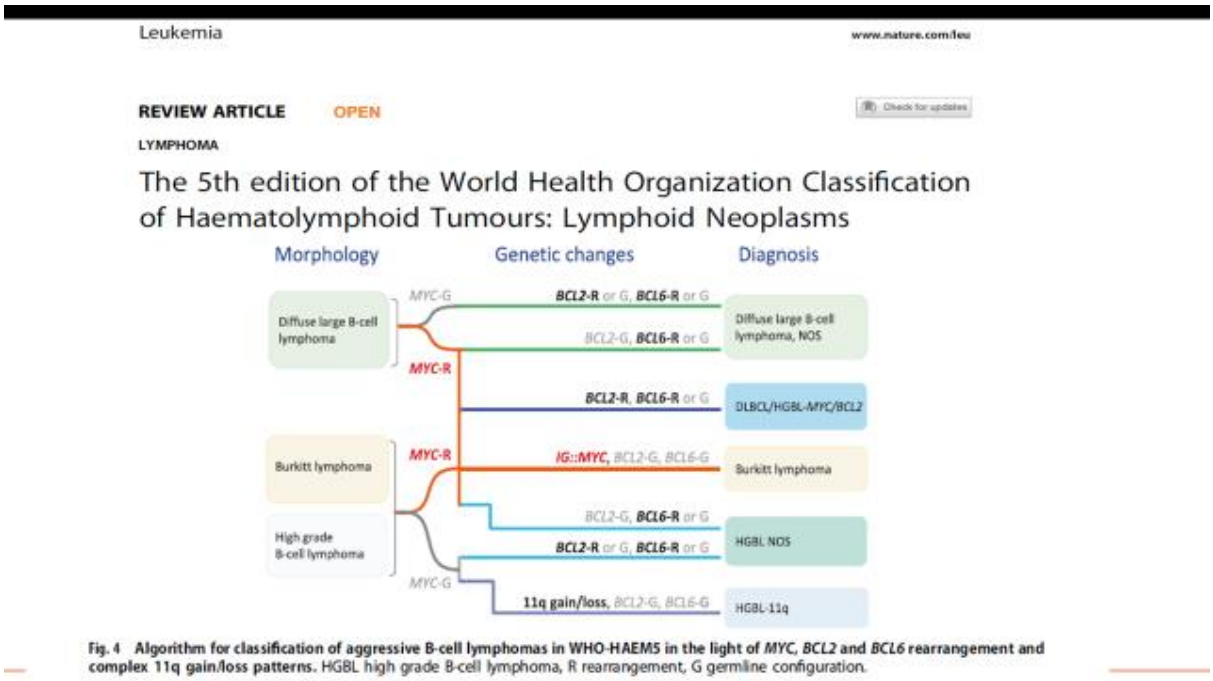


Fig. 4 Algorithm for classification of aggressive B-cell lymphomas in WHO-HAEM5 in the light of *MYC*, *BCL2* and *BCL6* rearrangement and complex 11q gain/loss patterns. HGBL high grade B-cell lymphoma, R rearrangement, G germline configuration.

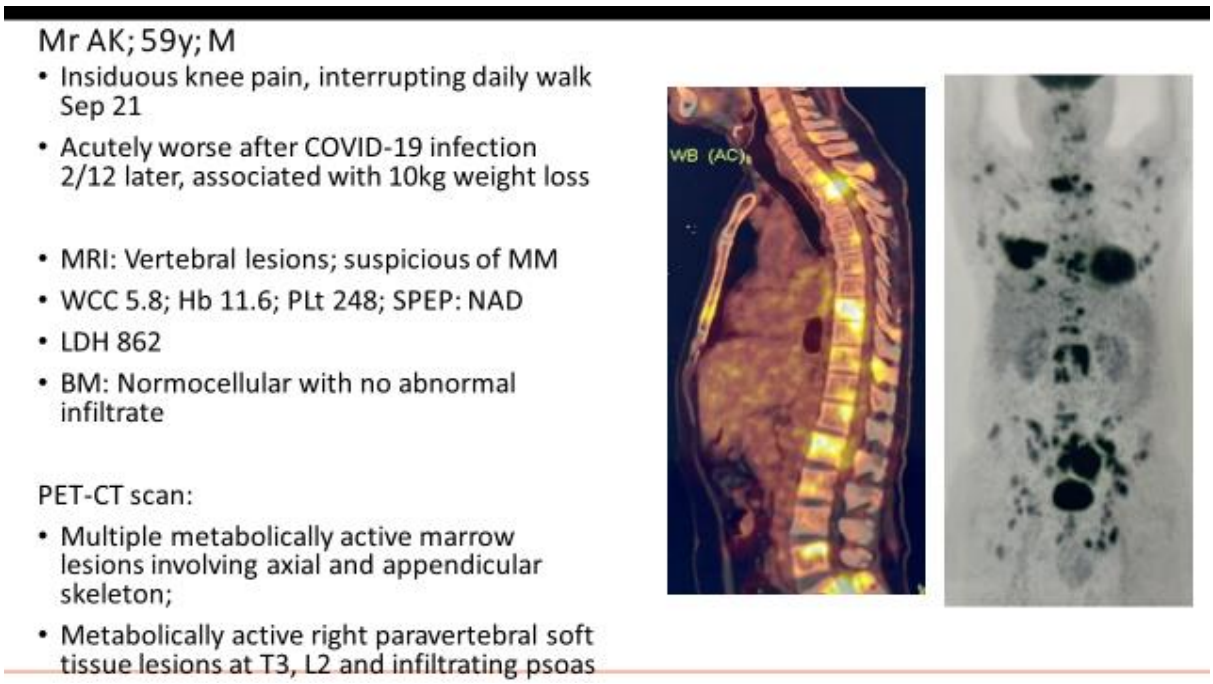
Optimising Diagnosis

- Timeliness
    - "Cast your net wide"
        - Cost

- Type of sample
    - Excision biopsy trumps core biopsy, especially in small and in heterogeneous masses
- Histology lab
    - Immunohistochemistry (c-MYC)
- Unmet needs:
    - Cytogenetics/ FISH/ molecular markers for

c-MYC/ BCL2/ BCL6

Dr. Mwirigi cited a case study of a 58-year-old male who presented with insidious knee pain, interrupting daily walk in September 2012. This became acutely worse after COVID-19 infection 2 months later, associated with 10kg weight loss.



What is the clinical impact of COO?

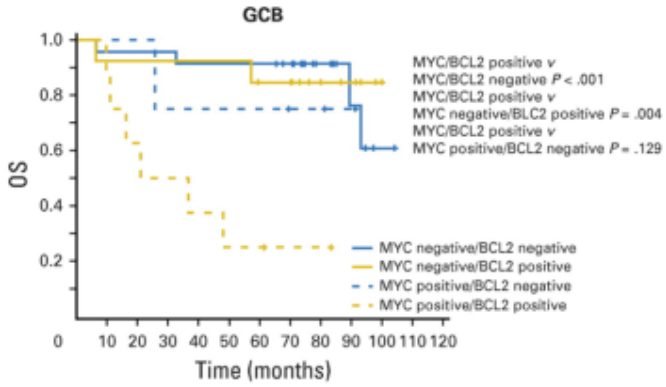
What is the clinical impact of COO?

- COO does not predict outcome in limited Stage I/II disease in the Rituximab era
  - *No change in outcome between GCB/ ABC*

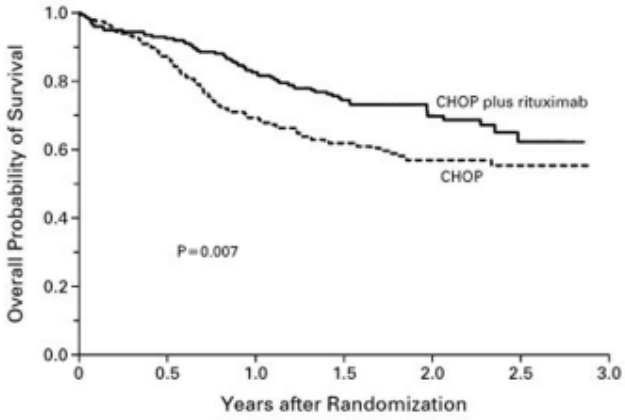
(Blood Adv. 2019 Jul 9; 3(13): 2013–2022)

- Role of MYC/ BCL2 (& BCL6) expression in GCB DLBCL
  - Dual expression of MYC/ BCL 2 predicts inferior survival in GCB DLBCL
  - Separating out of dual expressing GCB DLBCL from analysis reveals a poor outcome for ABC DLBCL

(Journal of Clinical Oncology 35, no. 22 (August 01, 2017) 2515-2526)



CHOP Chemotherapy plus Rituximab Compared with CHOP Alone in Elderly Patients with Diffuse Large-B-Cell Lymphoma



No. at Risk

CHOP plus rituximab	202	187	167	118	64	21
CHOP	197	171	136	96	58	16

Overall Survival among 399 Patients Assigned to Chemotherapy with Cyclophosphamide, Doxorubicin, Vincristine, and Prednisone or with CHOP plus Rituximab

January 24, 2002; N Engl J Med 2002; 346:235-242; DOI: 10.1056/NEJMoa011795

Findings of treatment with Rituximab

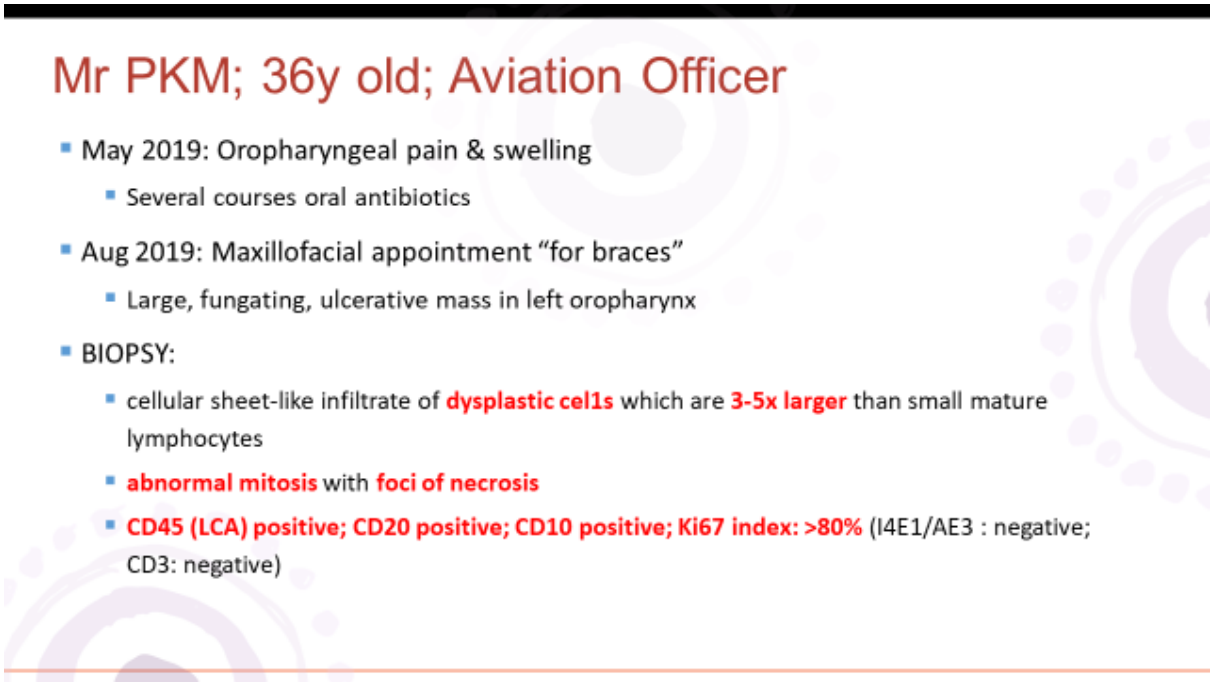
- The addition of rituximab to standard CHOP chemotherapy has improved survival rates for Diffuse Large B-cell Lymphoma (DLBCL) and other forms of high- grade B-cell lymphoma (HGBL) by 10%-15%. A complete response was achieved in 76% of the patients

treated with CHOP plus rituximab, as compared with 63% of those treated with CHOP alone (P=0.0005)

- Disease progression during treatment was reported or 22% of patients in the CHOP group and 9% in the CHOP-plus rituximab group.
- Prolongation of disease-free survival (complete remission) and progression- free survival in the CHOP-plus rituximab group was of the same magnitude as the prolongation of event- free survival data

A PET scan at the end of rituximab showed that the case study had gained 10kg back and was back to walking and swimming

Case study 2: 36year old aviation officer



Mr PKM; Work-up

Clinical history & examination:

- Unexplained weight loss 10kg
- Ulcerated oropharynx; contiguous nodes in left cervical chain

Laboratory evaluation:

- WCC 6.53 x10^9/L; Hb 12.2g/dL; Plt 180x10^9/L
- Creat 75umol/ml;
- ALT 23U/L; ALP 85U/L; GGT 150U/L; LDH 343 U/L

Staging investigations:

- PET-CT scan
- Bone marrow examination

Virology studies:

- HBV; HCV; HIV

Mr PKM; Prognostication

IPI/ R-IPI	Score
Age >65	0
Stage III-IV	1
ECOG >2	0
LDH >1xN	1
>1 Extranodal site	1
Risk Group	3/5

Standard IPI		4y PFS*	4y OS
High-intermediate		57%	49%
Revised IPI		**4y PFS***	**4y OS**
Poor		53%	55%

HIV POSITIVE

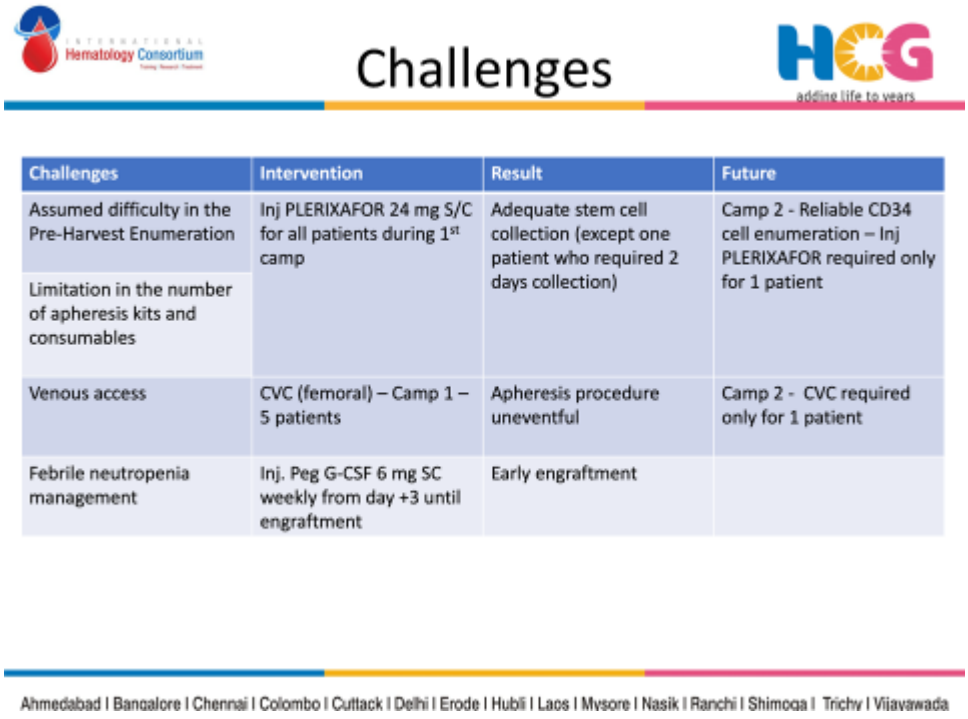
The patient also had a long period of no real treatment during the COVID era. There were discussions about HSCT/ CART/ Glifotamab and finally, Polatuzumab aswell as multiple admissions with infective complications.

POLARIX Conclusions

- In patients with intermediate-risk or high-risk untreated DLBCL, polatuzumab vedotin + R-CHP significantly increased PFS vs R-CHOP
    - HR: 0.73 (95% CI: 0.57-0.95; *P* <.02)
    - Frequency of AEs similar between treatment arms
- Exploratory analyses of various subgroups and other prognostic classification systems are ongoing
- Investigators conclude these data support use of polatuzumab vedotin + R-CHP in patients with untreated DLBCL

Optimising Outcomes in DLBCL

- High index of suspicion and timeliness of diagnosis
- Histology, immunohistochemistry and molecular diagnostics
    - Risk stratify patients
    - Timely decision-making and access to medication
    - no magic bullet if too late



Conclusion

- Commonalities in the socio-economic challenges in developing countries can be leveraged to create robust HSCT Programs in other developing countries.
- Further plan

- Tanzania team independently performs autologous SCT
- Start allogeneic SCT next year

Training opportunities

For Doctors:

- Fellowship training: 18 months
- Visiting Scholar Program: 1 week to 1 month

For Nurses:

- Fellowship training: 12 months

Apheresis training: 1 week

PAEDIATRIC ONCOLOGY 1

TOPIC: NEEDS OF CHILDHOOD CANCER AND MANAGEMENT IN BURUNDI

SPEAKER: DR JONAS NSENGIYUMVA – PAEDIATRIC ONCOLOGIST

"I smile, but I can never smile at cancer; I have a personal grudge against cancer".

Those were the words Dr. Nsengiyumva began his presentation with, as he painted the dire picture that is cancer management in Burundi.

Background

Childhood cancer is any malignant disease occurring in children before the age of 15 years. These cancers are rare and represent between 0.5% and 5.6% of all cancer cases.

Each year, cancer is diagnosed in 400,000 children and adolescents aged 0 to 19. Studies show that 80% of children with cancer will survive in high income countries compared to only 20% in some low and middle income countries.

Until the end of 2020, Burundi had no paediatric oncologist services. There were no management services beyond limited palliative care, despite the need for childhood cancer treatment.

The study objectives were to determine the burden of childhood cancers and to evaluate management resources and assess national policies for establishing pediatric oncology services in Burundi. This means that in Burundi, cancer treatment is generally absent- whether for adulthood or childhood cancer. There is only one private cancer unit since mid-2021, one public pathology laboratory and one private pathology laboratory.

Resources for Paediatric Oncology in Burundi

Dr. Nsengiyumva told participants and delegates that results from the study showed that apart from a private hospital which had just opened a unit for the administration of chemotherapy, there was no public health establishment currently that has a service for the management of childhood or adulthood cancer, nor is there palliative care service in the country.

The holistic management (physical, psychosocial and spiritual) of the problems encountered by patients and their families is therefore not ensured.

Cancer treatment in Burundi is seriously hampered by lack of qualified personnel as well as suitable equipment in all specialty areas related to the diagnosis and treatment of cancer such as radiology, pathology, radiation oncology, medical physics and nuclear medicine. The same is true for physicians specializing in paediatric oncology.

At the moment, Burundi does not have medical technicians with training in cancer treatment due to the fact that training of nurses in cancer care is absent. The country also lacks a national specialized training program for oncologists including medical oncologists, surgical oncologists and radiation oncologists, nuclear medicine specialists, medical physicists, biomedical engineers or radiographers; all of which remain a major challenge in the field of paediatric oncology.

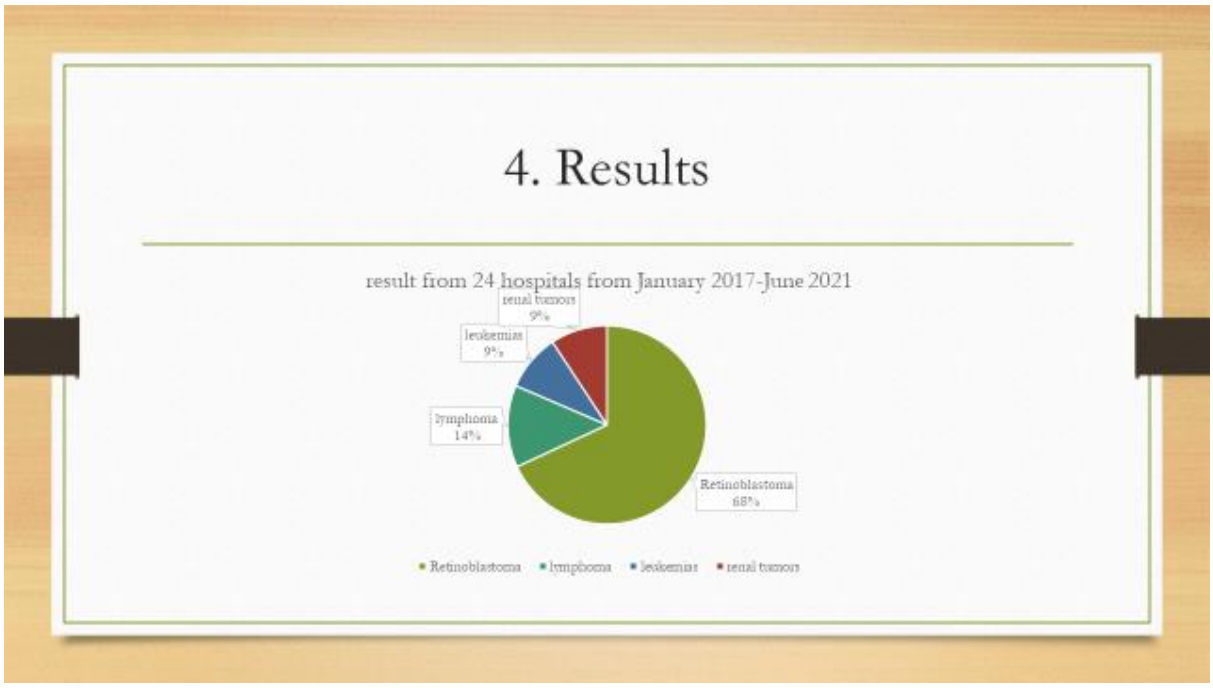
Methods

The study set out to determine the burden of childhood cancers and to evaluate management resources and assess national health policies for establishing paediatric oncology services in Burundi.

There were 161 children, 82 (50.4%) male and sex ratio of 1:0;99, diagnosed with cancer.

Results

Dr. Nsengiyumva presented the results of the study as shown in the chart below:



Conclusion and Recommendation:

- The true burden of childhood cancer cannot be determined due to insufficient data.
- The most common cancers are retinoblastoma, lymphomas and leukaemia.
- Resources exist to start paediatric oncology services beyond palliative care.
- More medical paediatric oncology and nursing skills for management are needed.
- Government policies should be developed to establish, support and facilitate access to childhood cancer care.

TOPIC: CHILDHOOD CANCER MEDICINE ACCESS IN FOUR EAST AFRICAN COUNTRIES

SPEAKER: DR. JESSIE GITHANG'A, MBChB, MMed, (Path), FCPath ESCA

Background

There are wide global disparities in access to health services between LMICs and HMICs

Most children with cancer live in LMIC contexts where care is often unavailable or unaffordable. Reliable access to essential childhood cancer medicines (CCMs) is key to improved childhood cancer outcomes in LMICs

ACCESS East Africa

ACCESS East Africa emerged as a collaborative research partnership to tackle the paucity of knowledge around contextual determinants of access to childhood cancer essentials

It aims to build context-specific research in the East African region, to inform global policy and national health system strategies to strengthen cancer care for children. Countries include Kenya, Uganda, Rwanda, Burundi, Tanzania and Ethiopia.

The 6 countries are represented as shown:

Aims and objectives of the study

The aim of the study was to analyze the determinants of paediatric cancer drug access across 4 countries- Kenya, Tanzania, Uganda and Rwanda with specific attention to political, macroeconomic and health system contexts.

Major Objectives

- Evaluate the availability of essential childhood cancer medicines in these settings and,
- Analyze the key determinants of childhood cancer drug access across each health system.

Research Designs and Methods

Data collection was both quantitative and qualitative.

Quantitative

- 12 months weekly prospective data collection of key cytotoxic and supportive care medicines across 8 sites

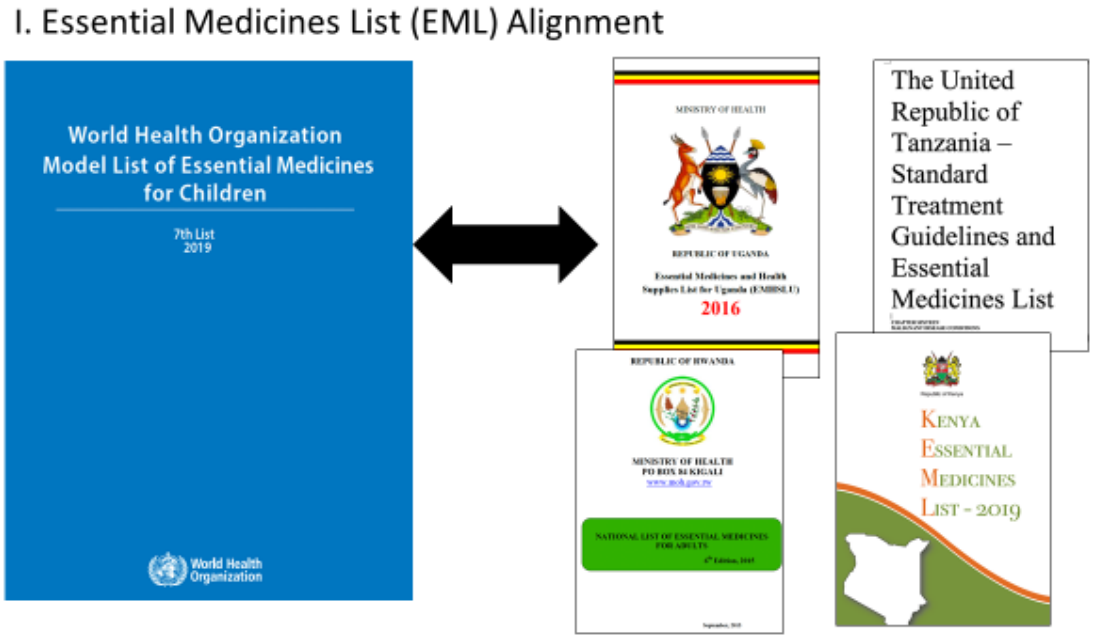
- 44 cytotoxic and supportive care medicines identified from 2019 WHO EMLc
- Data included: drug formulation, price, manufacturer name and number of days stocked out per week

Qualitative

- Hired and trained local qualitative researchers
- Semi-structured interviews with 64 health system stakeholders
- Policy and document analysis

Results

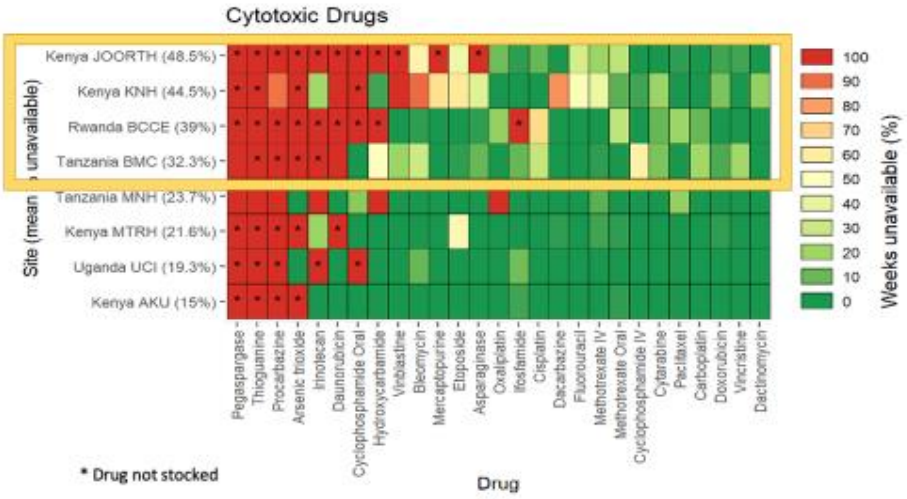
National Essential Medicine List Alignment



Patterns of medicine availability and stock-out across sites

II. Medicine Availability

FIGURE 1: Percent unavailability of cytotoxic and supportive care medicines by site



Medicine regimen availability potential impact

III. Medicine Regimen Availability and Potential Impact

FIGURE 2. Mean unavailability of regimens required to treat six common pediatric malignancies (GICC index cancers)

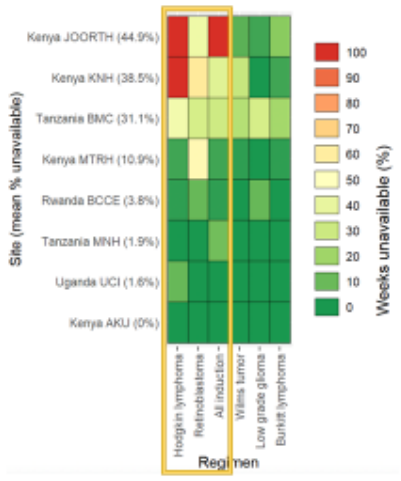
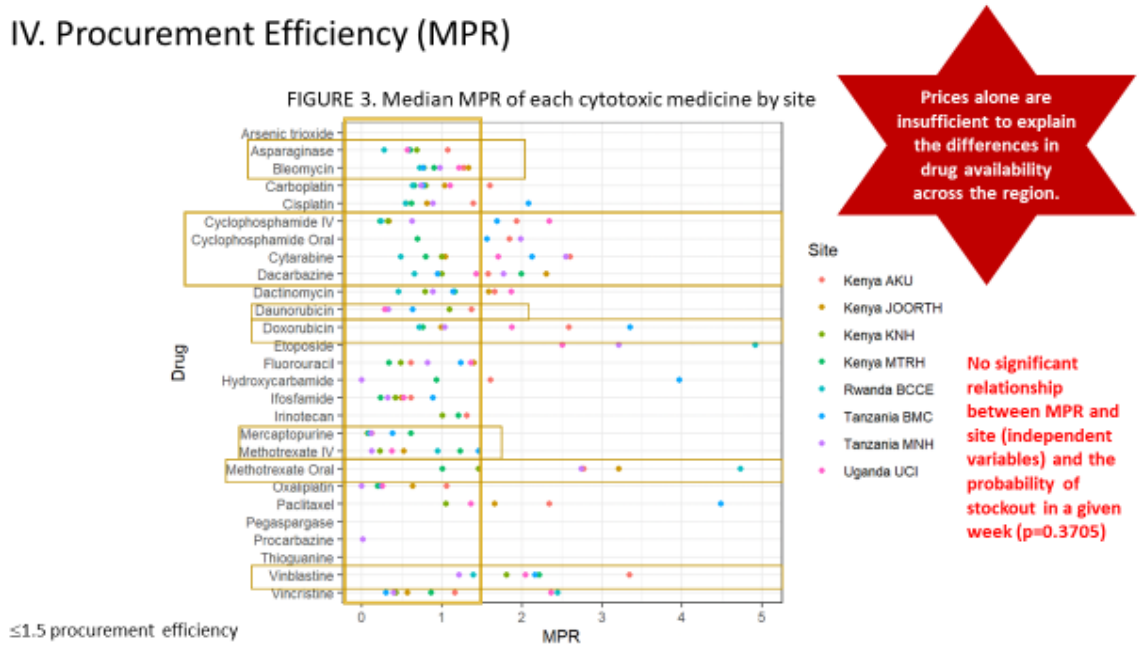


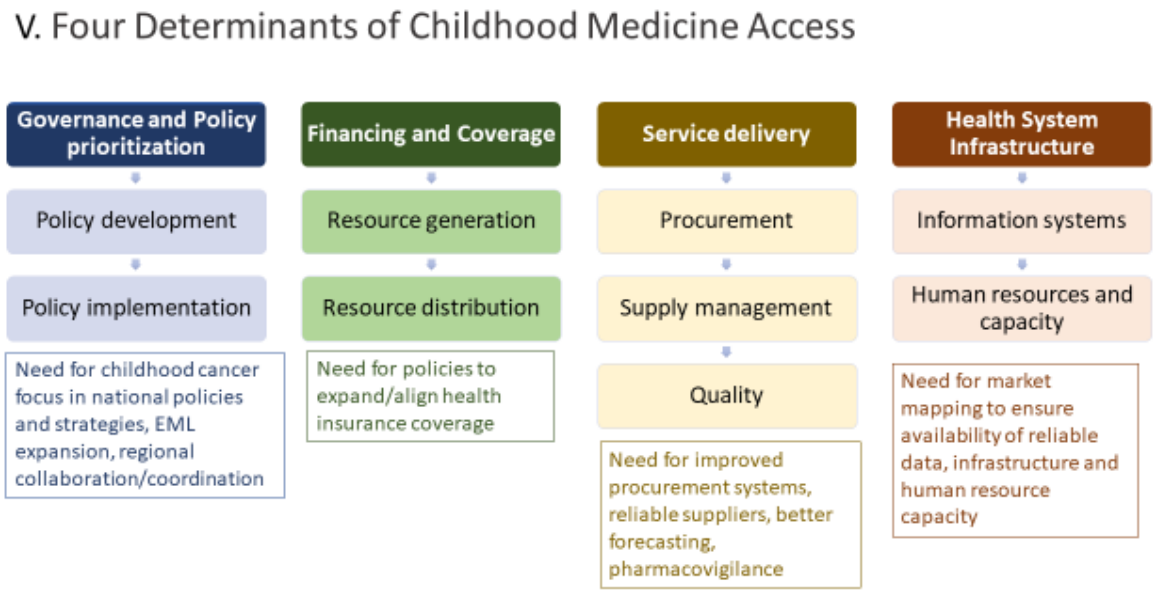
Table 2. SIOP Adapted Treatment Regimens

Pediatric malignancy	Regimen
ALL (Induction)	prednisone, vincristine, asparaginase, doxorubicin, Methotrexate IT
Burkitt lymphoma	cyclophosphamide, vincristine, methotrexate
Wilms tumour	vincristine, dactinomycin +/- doxorubicin
Hodgkin lymphoma	doxorubicin, bleomycin, vinblastine, dacarbazine
Low-grade glioma	carboplatin, vincristine
Retinoblastoma	carboplatin, etoposide, vincristine

Procurement efficiency (MPR)



Four determinants of childhood medicine access



Priority Policy Recommendations & Next Steps

Enhanced data collection

- Consistent drug availability including inventory reports and prices
- Digital record keeping for easy data export and analysis

- Augmented training for pharmacists

Pooled procurement

- Leverage EAC governance & regulatory environment to build on AMRH & legal common market initiatives
- Evidence based forecasting

Regional and country-level analyses

- Academic manuscripts
- Evidence summaries

Regional stakeholder meeting

- Mid 2023

Knowledge transition initiatives

- Policy briefs
- WHO GICC updates
- Targeted outreach to policy makers

TOPIC: HISTOLOGICAL PATTERN ON PEDIATRIC MALIGNANCIES AT AIC KIJABE HOSPITAL- A 10 YEAR RETROSPECTIVE REVIEW

SPEAKER: DR. SARAH MUMA, PEDIATRIC HAEMATOLOGIST/ ONCOLOGIST

Background

While childhood cancer makes a small proportion of the global cancer burden, 84% of childhood cancers occur in the low and middle income countries, where nearly 90% of the world's children live. Based on GLOBOCAN estimates, the incidence of childhood cancer varies between 50 and 200 cases per million children per year in different countries.

In 2010, only 1% of African countries had high quality cancer registries that met inclusion criteria in the International Agency for Research on Cancer (IARCs) Cancer incidence in five continents.

The South Africa Children's Tumor Registry is the only dedicated children's cancer registry in Africa.

There are two population-based cancer registries in Kenya that cover less than 20% of the Kenyan population.

The incidence of malignant disease outside these registries remains largely unknown in the country.

About AIC Kijabe Hospital

- This is a tertiary health facility in Kenya and a faith based organization located within the country's Central Province and 51 kilometres northwest of Nairobi city.
- The hospital's pathology department handles more than 5000 tissue specimens from within and outside of Kijabe every year.

Specific Objectives

- **Primary Objective**
    - To describe the incidence pattern of childhood (10-14 years) malignant tumors presenting to a tertiary health facility in a rural population in Kenya
- **Secondary Objective**
    - To compare the incidence pattern to that reported in the Nairobi Cancer Registry

Materials

- Information was obtained from the AIC Kijabe Hospital Pathology database for the 10-year period, between January 2007 and December 2016.

- This included patient demographics (year of birth, gender), date of surgery, date of diagnosis, gross and microscopic description of pathology samples and final diagnosis
- The 10-year period data from the National Cancer Registry, comprised of data for malignant tumors in children aged 0-14 years, from 2004 to 2014

Methods

Inclusion and exclusion

Inclusion criteria

- Age from birth to 14 years (on the date of surgery)
- Date of surgery between January 2007 and December 2016
- Surgery performed at Kijabe Hospital or other facility
- Conclusive histological diagnosis available
- Primary diagnosis made at Kijabe Hospital Pathology department

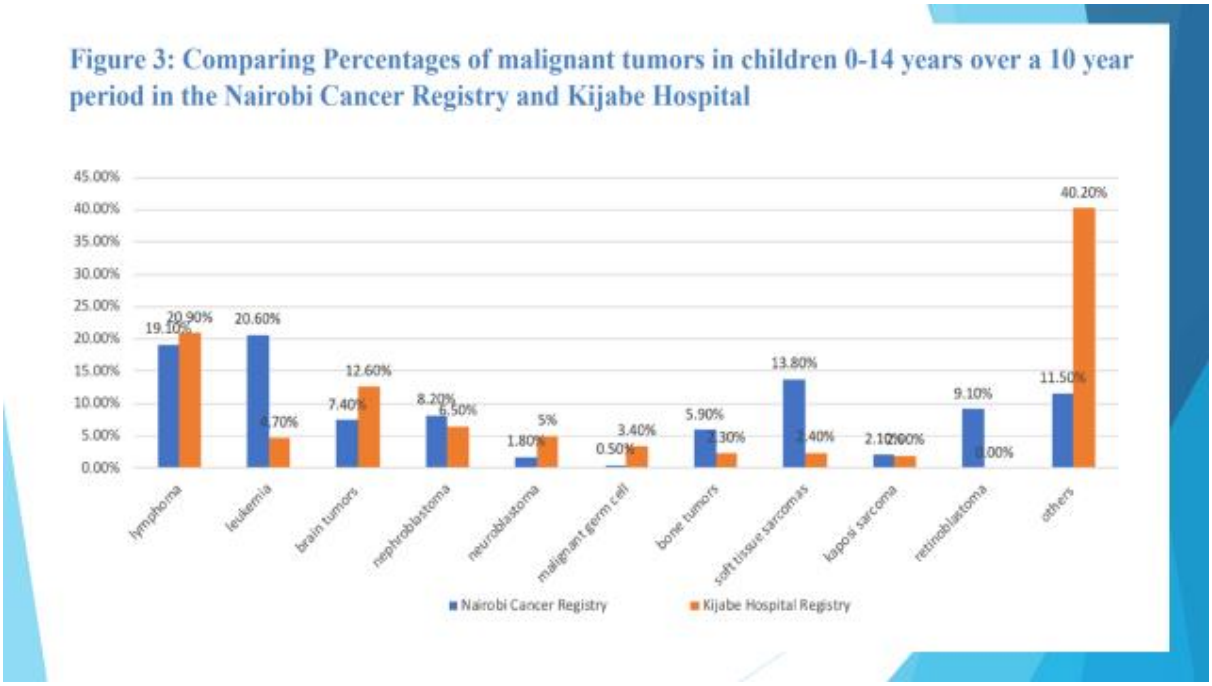
Exclusion Criteria

- Inconclusive diagnosis
- Primary diagnosis made in another facility and only data is processed at Kijabe Hospital

Results

- Male to female ratio was 1:4 -1 in Kijabe and Nairobi cancer registry
- Lymphoma were the top diagnosis at Kijabe hospital
- Number of leukaemia cases in Kijabe hospital was low because the facility does not offer treatment for the same
- There was no single case of Retinoblastoma at Kijabe Hospital whereas there were 9 such cases at the Nairobi Cancer Registry

A detailed graph of the comparative study between the percentages of malignant tumors in children 0-14 years over a 10-year period in the Nairobi Cancer Registry and Kijabe Hospital was presents as illustrated below:



Conclusion

- This study shows that a difference exists in the pattern of distribution between Kijabe Hospital and the Nairobi Cancer Registry
- A dedicated Kenyan Children's Cancer Registry, would provide a true incidence of childhood cancer in Kenya, and would also allow more accurate measurement of its effect on population health and of the effectiveness of curative interventions.

TOPIC: FEASIBILITY OF EVIDENCE BASED TREATMENT OF CHILDHOOD ACUTE MYELOID LEUKEMIA IN A SUB SAHARA AFRICA CENTRE

SPEAKER: DR. IRENE NZAMU

Background

Treatment of childhood Acute Myeloid Leukaemia (AML) is challenging in SSA settings due to inadequate supportive care to deliver intensive AML regimens hence, high treatment-related mortality (TRM).

Some paediatric oncology centres in SSA treat childhood AML with a palliative intent from diagnosis, while others do not attempt to treat paediatric AML.

At the Mulago National Referral Hospital (MNRH)/Global HOPE Centre in Uganda, AML is treated with a curative intent.

Acute Promyelocytic Leukaemia (APL) with Children's Oncology Group (COG) AAML1331 and AML-Down Syndrome (DS) and other AML with modified reduced intensity regimens.

Having given the background of the study, Dr. Nzamu proceeded to share her research team's experience of treatment, TRM, remission rates, and short-term overall survival (OS).

Methods

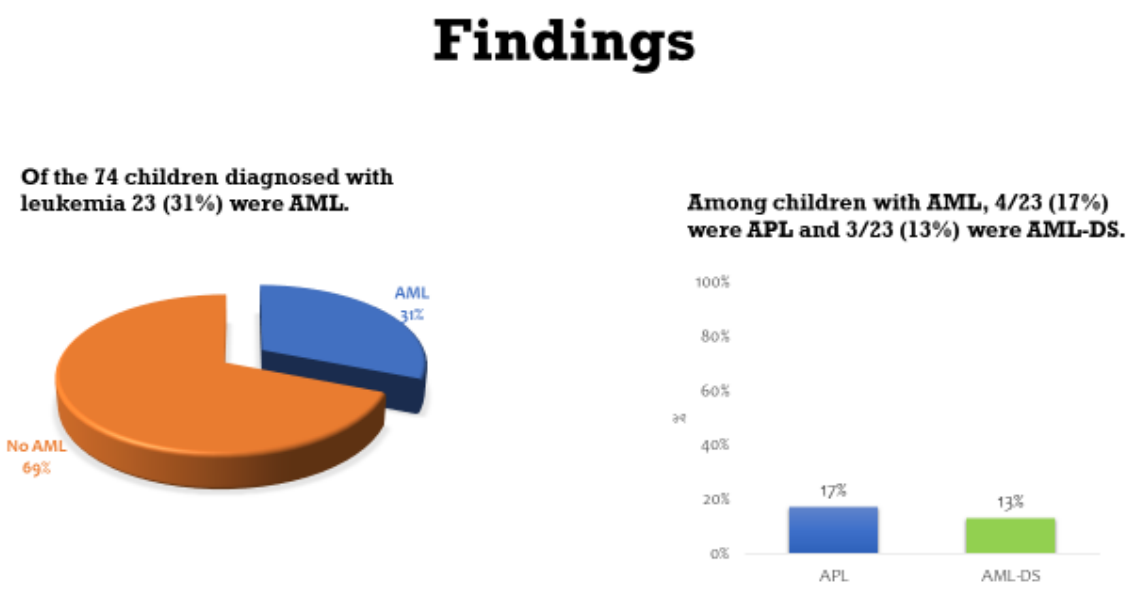
- Retrospective cohort analysis of children diagnosed with AML between March 2019 and February 2020.
- Dx established by bone marrow or peripheral blood morphology plus immunophenotyping by flow cytometry.
- All APL were confirmed by cytogenetics for t(15;17).
- Children without DS or APL received 2 cycles of Cytarabine 100mg/m2 12 hourly Days 1-10, Daunorubicin 50mg/m2 Days

1,3,5 and a single triple intrathecal chemotherapy for induction and 2 cycles of high dose Cytarabine 3000mg/m2 for consolidation.

- Supportive care comprised antimicrobial prophylaxis with cotrimoxazole, ciprofloxacin and itraconazole, blood product support, antiseptic baths and oral rinses.

Findings:

The findings of the study are shown below as presented by Dr. Irene Nzamu



Characteristics of children with AML

The mean age at diagnosis of AML was 6.1 (SD 4.3) years.

16/23 (70%) were males

Outcomes of Children with AML

74 children were diagnosed with Leukaemia, of which 23 had AML

AML was more prevalent in males than females

3 survived the overall 1-year survival OS

Conclusion

- It is feasible to treat, manage TRM, and achieve remission in childhood AML in the SSA setting.
- Despite several TRMs, a remission rate of 56% in the non-APL non-AML-DS is a promising outcome.

PAEDIATRIC ONCOLOGY 2

TOPIC: FACTORS AFFECTING UPTAKE OF SICKLE CELL DISEASE SCREENING AMONG CHILDREN UNDER FIVE YEARS: A COUNTY HOSPITAL

SPEAKER: ERICK AYAYE

Background

Sickle Cell Disease (SCD) is a genetic disorder. It is estimated that 14,000 newborns are affected by the disease in Kenya every year. Early newborn and infant screening lead to prompt intervention that reduces morbidity and mortality.

Many countries have adopted newborn screening. However, Kenya still does not have a national programme on newborn screening.

There are now newer methods of screening for SCD using Point Of Care (POC) tests that are being used in Kisumu, Kilifi and Homa Bay counties as presented:

Background

- Iso-electric focusing(IEF) has been used as a screening test before
- There are now newer methods of screening using POC tests

Other SCD Screening programs in Kenya					
Facility	Period	Population	Total No. Screened	Prevalence of SCD	Prevalence of SCT
Kisumu	2015-2016	Newborns	1,810	3.2%	13.9%
Kilifi	2006-2011	Infants	15, 737	0.08%	
Homabay	2018	Under 5 Years	700	9.5%	20.0%

3

Methodology

- This was a cross sectional study done at the well-baby clinic at Homabay County Hospital
- Study duration was between December 2020 and June 2022
- Parents whose children were less than 5 years of age were randomly approached and consented for the study

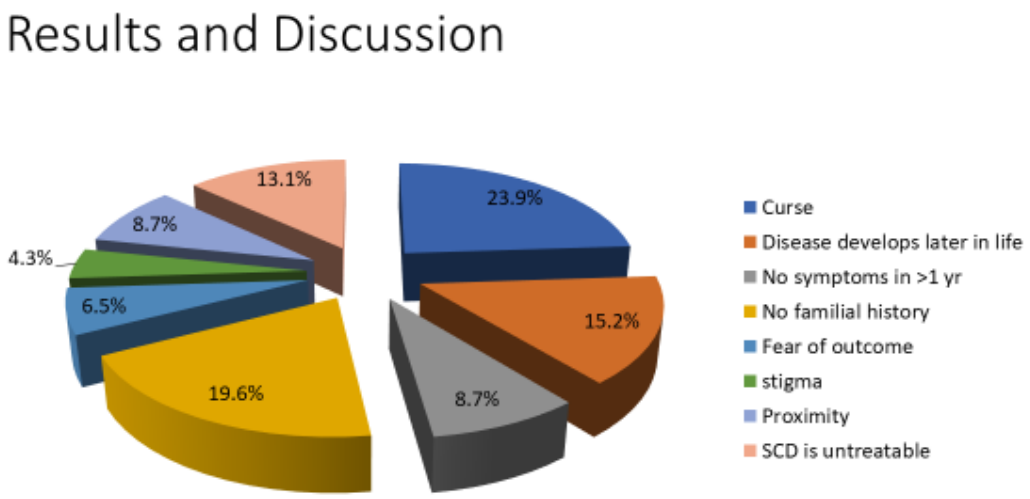
Results and Discussion

- A total of 1097 caregivers were approached
- 1051 (95.8%) were consAS)nted and enrollment done
- 800 (76.1) were negative (HbAA)
- 177 (16.2%) had the SCD trait (HbAS)
- 74 (7.0%) were positive (HbSS)

46 (4.2%) declined to participate citing various reasons

- 11 believed that Sickle Cell Disease is a curse
- 7 believed that SCD develops later in life and there is no need for early screening
- According to 4 of those that declined, if there is no symptoms when the child is more than 1 year old they do not have the condition
- 9 were of the opinion that there is no possibility of a child having SCD when there is no familial history of SCD

A detailed analysis of the results and discussion is illustrated below



Conclusion

- SCD screening using POC test is largely accepted
- In order to maximize such interventions, it is important to recognize factors that may restrict the uptake of SCD screening
- A nationwide newborn screening for SCD using the POC should be rolled out to improve on early interventions on SCD management.

TOPIC: TRENDS OF A MULTIDISCIPLINARY TEAM ON GUS SOLID TUMORS

SPEAKER: DR IRENE NZAMU/ DR. TIM JUMBI

Background

Genito- urinary tumors in children include

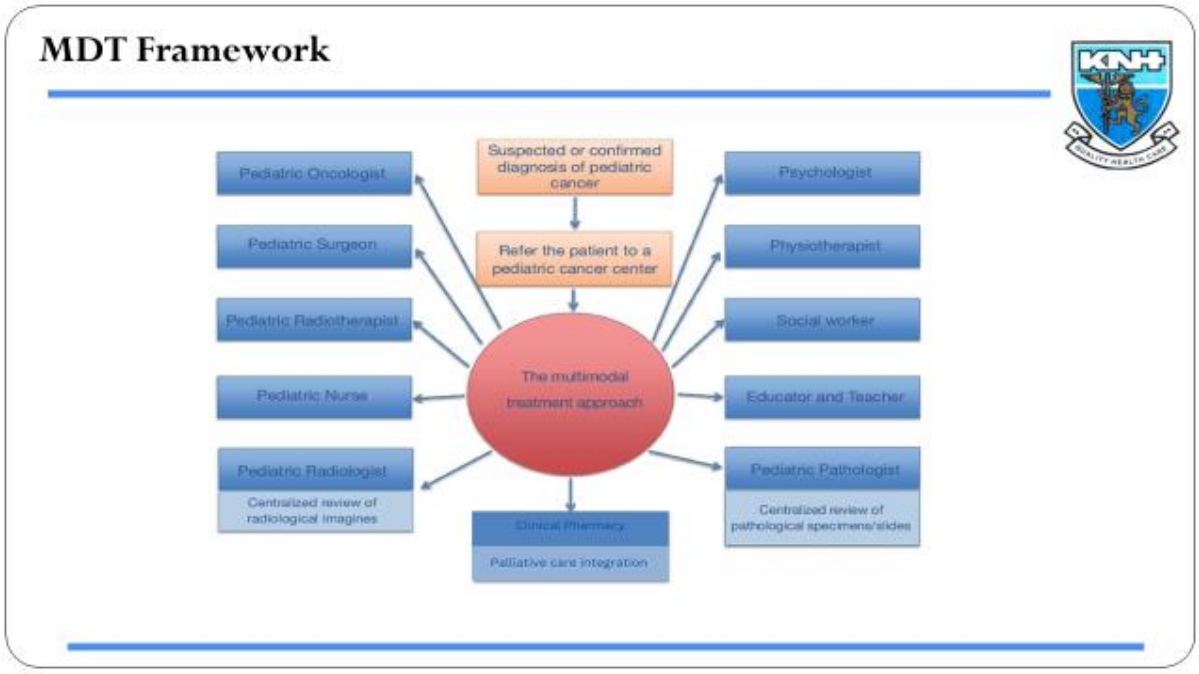
- Wilms tumor
- Neuroblstoma
- Rhabdomysacrcoma
- Germcell tumors

Documented reasons for the significantly higher mortality in LMIC include

- Late presentation
- Under diagnosis
- Limited access to curative care
- High- abandonment rates
- Sub- optimal supportive care

Previous research on Oncological MDT

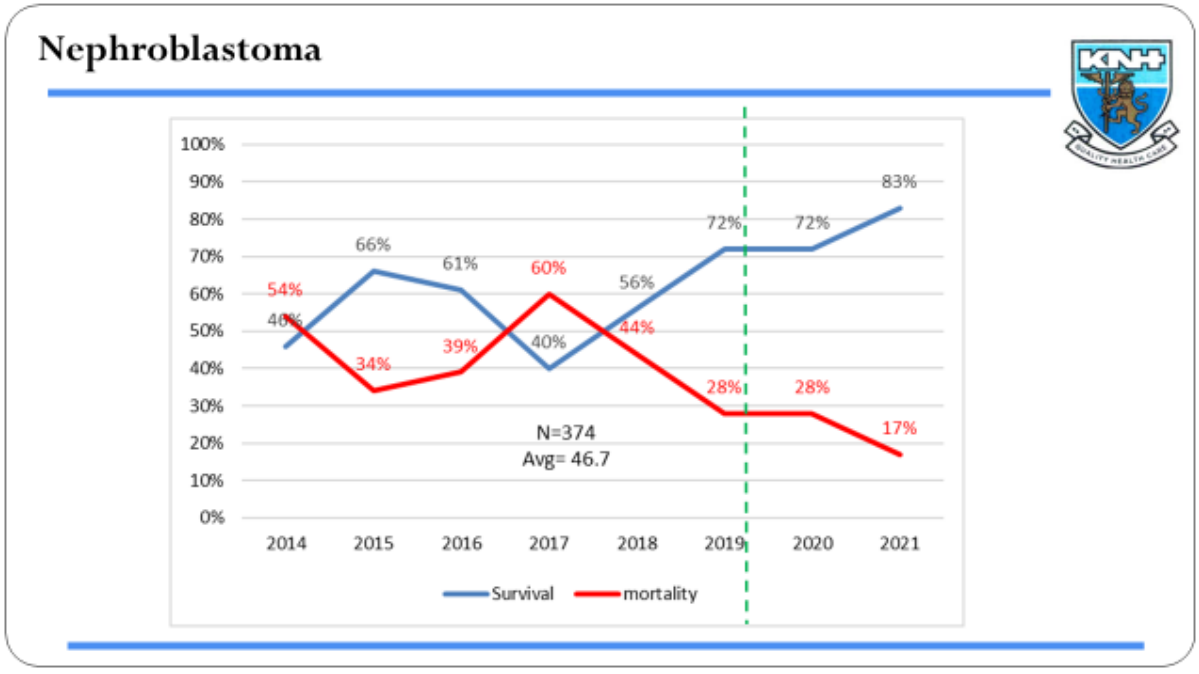
MDT Framework



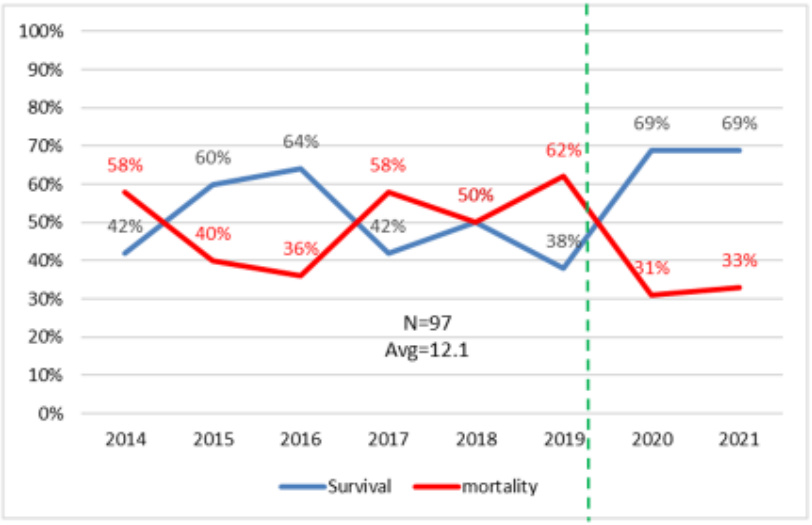
KNH PAEDIATRIC ONCOLOGY MDT

The aim was to improve survival by an individualized MDT review approach. This began in June 2019. Weekly meetings were conducted both physical and virtual and the host was paediatric oncology

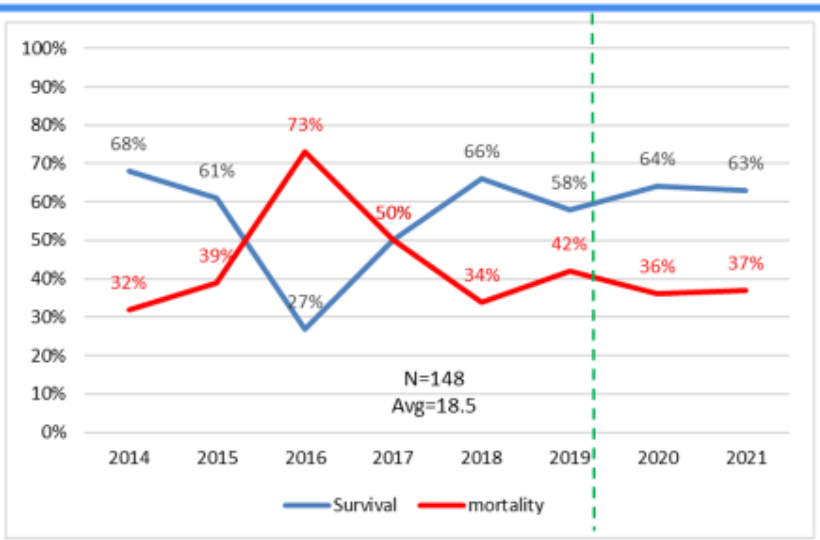
Clinical Audit of Survival &Mortality trend pre and post MDT

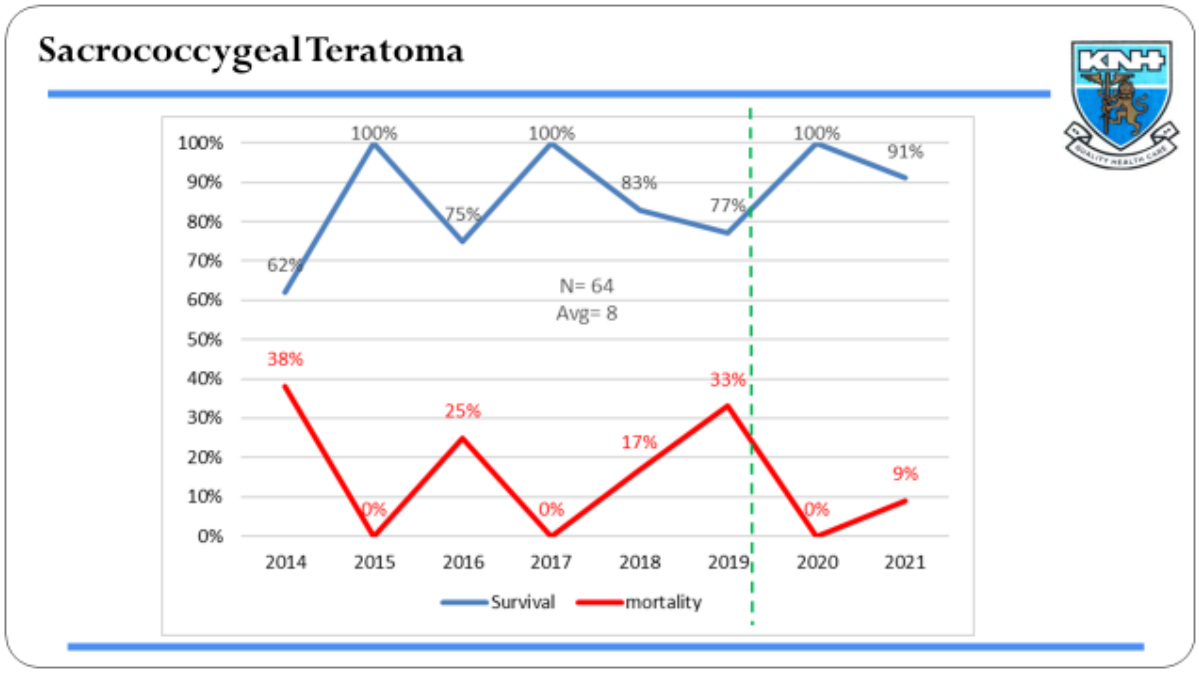


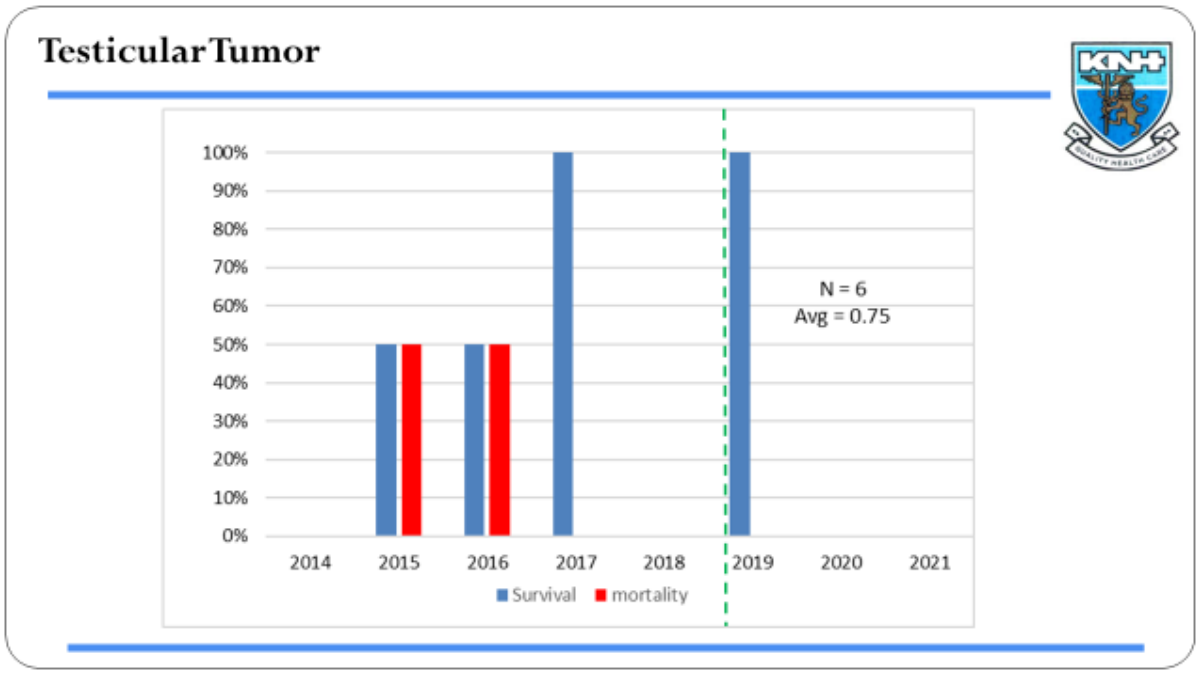
Neuroblastoma



Rhabdomyosarcoma







Overall, the strengths of paediatric oncology include

- Improved consultation and referral
- Early tumor and imaging
- Prompt initiation of curative care
- Enhanced protocols on therapy completion

- Optimization of supportive services
- Improved survival

The weaknesses are:

- Patient navigation
- Data management
- Referral feedback

Dr. Nzamu ended the presentation by reminding participants that ***"fighting cancer is a team effort"***

TOPIC: NUTRITION SUPPORT IN CHILDHOOD CANCER

SPEAKER: BARBARA MULIRO, NUTRITIONIST- KENYATTA NATIONAL HOSPITAL

Background/ Why Nutrition Matters in Childhood Cancer

Under and over nourished children with cancer have been shown to have reduced tolerance to therapy, with more toxicities, longer duration of therapy, treatment delays and prolonged periods of hospital stays in both HICs and LMICs

Several studies also show that under- nutrition as determined by simple nutrition measure is related to increased infections and hospital length of stay in different cancer types. In patients with Burkitt's Lymphoma in Malawi, low arm muscle area was associated with a significantly higher rate of neutropenia, independent of clinical stage of disease, bone marrow involvement and HIV infection.

In Bangladesh, all patients with lower weight for age were more likely to suffer infections and consequently had longer hospital stays

Diagnosis at High Risk for Malnutrition

- Advanced stages of solid tumors
- Wilm’s tumor
- Neuroblastoma
- Rhabdomyosarcoma
- Ewing’s Sarcoma
- Non-hodgkin’s lymphoma
- Acute myeloid leukemia
- Brain tumors
- Head and neck tumors

Effects of Malnutrition

- Wasting
- Reduced tolerance to treatment
- Altered drug metabolism
- Increased susceptibility to infection
- Improper physical and psychological development
- Increased risk of treatment complications

Nutrition related side effects of cancer treatment include

- Anorexia
- Change in taste
- Early satiety
- Nausea and vomiting
- Mucositis/ esophagitis

- Diarrhoea
- Constipation

The following were identified as the initial gaps in the delivery of nutritional care

- How anthropometric assessments were done, timing of assessments
- Challenges in documentation of interventions
- There was no proper follow up in terms of determining caloric requirements against intake
- No nutrition outpatient follow up

Steps to establishing a nutrition program at KNH

- Initial nutrition assessment at diagnosis
- Nutrition re-assessment throughout treatment for both inpatient and outpatient
- Calculate nutrient requirements
- Biochemical assessment
- Regular measurement of anthropometrics which measures height, weight, mid-upper arm circumference
- Regular follow up of diet history

Nutrition intervention focuses on

- Tailored meal plans
- Diet modification and
- Enteral/ parenteral nutrition

Objectives of the study

- To investigate the impact of a newly established nutritional program on the incidence of malnutrition at diagnosis and during treatment in children with cancer
- To evaluate the ability of a newly established nutritional program on sustained delivery of nutritional care among children discharged from the hospital and continue to receive treatment in outpatient setting
- To evaluate the survival and reduced incidence of infection among children receiving the recommended nutritional care and maintaining normal nutritional status throughout the spectrum of cancer care
- To investigate the impact of a newly established nutritional program on the delivery of nutritional services, defined as utilization of nutritional interventions, during treatment in children with cancer

The KNH nutritional Registry

- Collected age, diagnosis and anthropometrics and determined nutritional status
    - Anthropometrics: weight, height, BMI and MUAC
    - Nutritional status: MAM, SAM, Stunting
- Tracked anthropometrics in initial assessment and throughout treatment to determine changes in nutritional status.

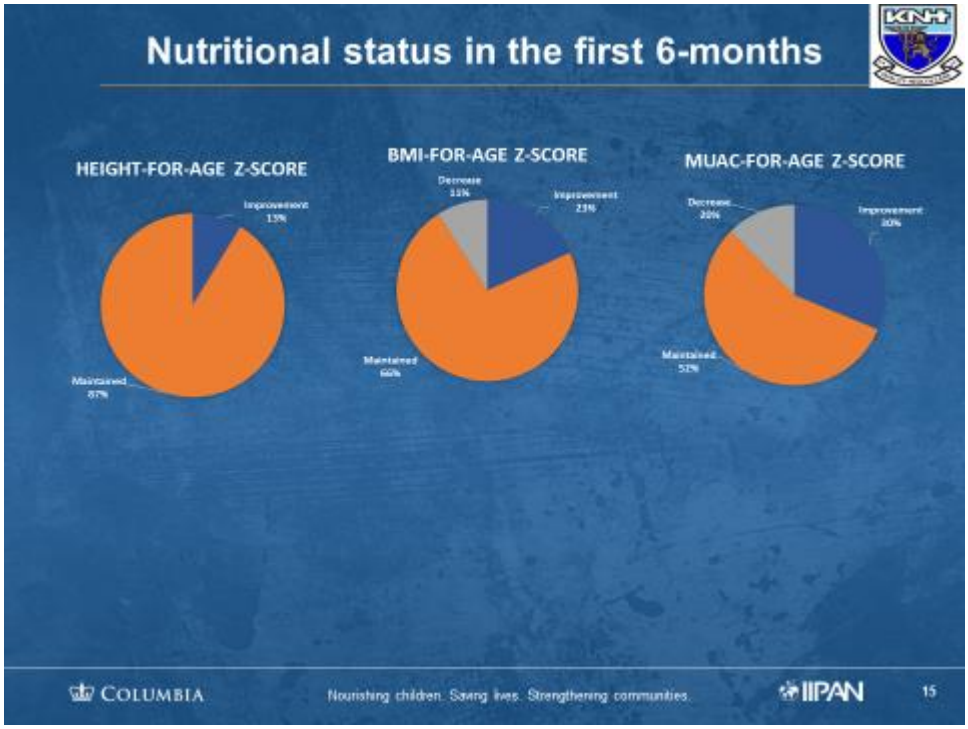
The tables below show the participants demographics, nutritional status of oncology ward and nutritional status in the first 6 months respectively

Participant demographics

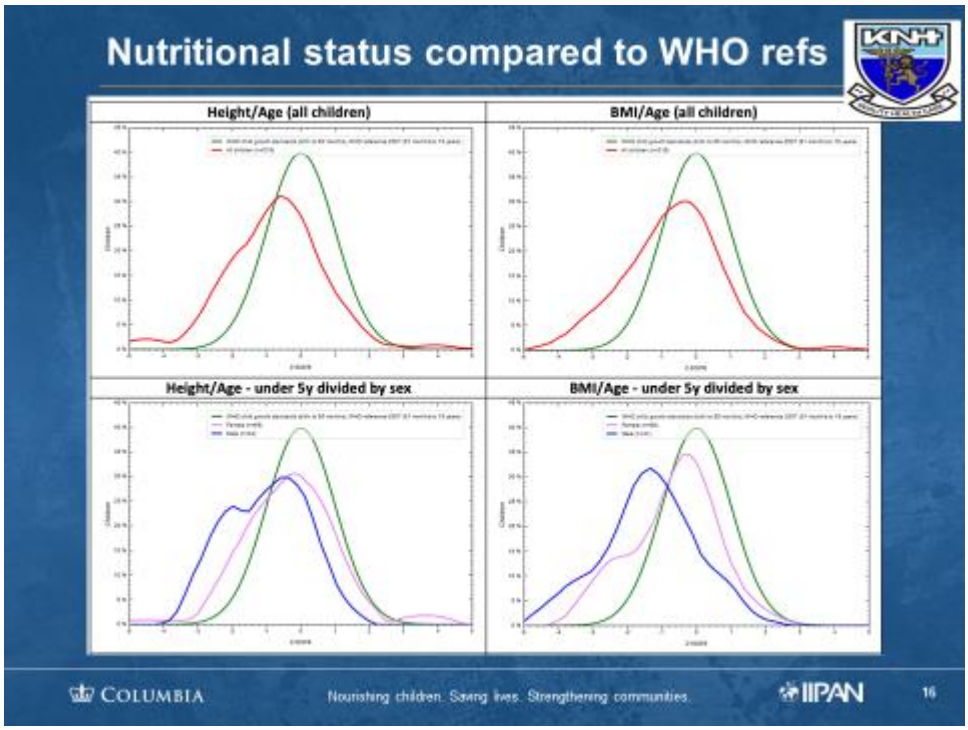
	n (%)
Sex	256
Female	110 (43.0)
Male	146 (57.0)
Age (years)	256
Mean ± SD	5.7 ± 3.7
Min-Max	0 - 14
Median (Range)	5.0 (14)
Age (months)	256
Mean ± SD	73.7 ± 44.8
Min-Max	0 -171
Median (Range)	63.5 (171)
Hospital Area	256
Outpatient	57 (22.3)
Inpatient	199 (77.3)
Diagnosis	252
Solid Tumors	113 (44.8)
Hematological Malignancies	139 (55.2)

Nutritional status of oncology ward

	Height-for-age Z-score 1st Nutritional Dx	Height-for-age Z-score 1m Follow-up	Height-for-age Z-score 3m Follow-up	Height-for-age Z-score 6m Follow-up
Total	221	107	61	32
Severely stunted	18 (8.1)	2 (1.9)	4 (6.6)	2 (6.3)
Stunted	22 (10.0)	7 (6.5)	4 (6.6)	1 (3.1)
Healthy Height	181 (81.9)	98 (91.6)	53 (86.9)	29 (90.6)
	BMI-for-age Z-score 1st Nutritional Dx	BMI-for-age Z-score 1m Follow-up	BMI-for-age Z-score 3m Follow-up	BMI-for-age Z-score 6m Follow-up
Total	220	107	60	32
SAM	13 (5.9)	5 (4.7)	2 (3.3)	1 (3.1)
MAM	27 (12.3)	15 (14.0)	8 (13.3)	2 (6.3)
Healthy Weight	174 (79.1)	83 (77.6)	50 (83.3)	28 (87.5)
Overweight or Obese	6 (2.7)	4 (3.7)	0 (0.0)	1 (3.1)
	MUAC-for-age Z-score 1st Nutritional Dx	MUAC-for-age Z-score 1m Follow-up	MUAC-for-age Z-score 3m Follow-up	MUAC-for-age Z-score 6m Follow-up
Total	228	92	52	32
SAM	36 (15.8)	14 (14.9)	8 (15.4)	4 (12.5)
MAM	60 (26.3)	12 (12.7)	8 (15.4)	5 (15.6)
Healthy Weight	130 (57.0)	63 (67.0)	32 (61.5)	19 (59.3)
Overweight or Obese	1 (0.9)	3 (3.2)	4 (7.7)	4 (12.5)



Nutritional Status Compared to WHO refs



Conclusion

- Since the initiation of the program the percentage of children with healthy weight increased from 79.1 to 87.5. SAM reduced from 5.9 to 3.1% and MAM from 12.3%to 6%

- Program is making positive steps towards nutritional improvement and the paediatric oncology ward at KNH

TOPIC: EFFECT OF MEDICAL PLAY ON EMOTIONAL ADJUSTMENT OF CHILDREN HOSPITALIZED AT MTRH

SPEAKER MARTHA KAIMURI, MA COUNSELING PSYCHOLOGY, CERTIFIED CHILD LIFE SPECIALIST

"Play is the universal language of childhood and to play is every child's right" – Martha Kaimuri

Background

Medical play is a type of play where children have the opportunity to manipulate medical themed equipment, toys, activities so that they can become familiar with the medical world. Therapeutic play helps children maintain their 'normal' development to respond more effectively to stressful events such as medical encounters

Objective of the study

To investigate the effect of medical play on emotional adjustment of hospitalized children in light of the concern that when children are hospitalized they get traumatized in unfamiliar hospital environments away from home

Role of Play in Children's Palliative Care

Play is the universal language of childhood and to play is every child's right

However, despite this, providing time and opportunities to play can be overlooked or considered to be of little importance where the focus of the

adult careers is the amelioration of clinical symptoms of the illness and on lessening the psychosocial impact the illness may have on the child

Impact of medical play

Can help the child handle the hard parts of treatment such as

- Needles
- Medicines
- Bandage changes
- The child can use medical play to learn and practice coping skills which may include
- Taking deep breaths
- Holding still
- Using a caregiver or comfort item for support

Medical play can also help children to discover how tools are used so that they do not seem as frightening which helps them become more familiar with, and more comfortable around medical equipment as portrayed in the image below

Learn what different medical items do

- . Medical play can help children to discover how tools are used so they do not seem as frightening ,they become more familiar with and more comfortable around medical equipment

Medical Play makes the child become familiar with the unknown environments of the hospital, express their feelings and concerns and also familiarize themselves with medical procedures required such as venepuncture.

Make a child feel ready for medical procedures

- It make the child become familiar with the unknown environment of the hospital, express their feeling and their concern and familiarize themselves with medical procedures required e.g venipuncture

Facilitate communication among children

- Its an excellent means of communication and development of social relationship and mutual assistance

Reduces regression

- Return to previous stages of development ,such regression among children may be shown by various disorders ,,,play gives a way out of repressed desires ,anxiety and fear and allow children express themselves in a more creative and pleasant away.

Method

- The study used ex-post facto research design
- The target population was 235 members, 20 counsellors and 50 medical staff dealing with hospitalized children at Moi Teaching and Referral Hospital.

- Stratified and simple random sampling techniques were used to select a sample of 169 respondents.
- Questionnaire, interview schedule and observation checklist was used as data collection techniques.
- Content validity through expert opinion of professional counsellors and face to face validity were sought to ascertain the validity of the data collection instruments.
- Test re-test technique was employed to test the reliability of the data collection instruments. Independent t- test was used to test the hypotheses.

Findings

The respondents were satisfied with the provision of medical toys such as stethoscope, syringe without needles, bandages and dressing pack in helping children adjust emotionally, when taken through medical procedures using dolls, the way a child expresses his/her feelings and concerns during medical procedures and the child's familiarization with hospital procedures in reduction of anxiety once they are hospitalized.

Recommendation

There is need for more public sensitization on the cause, signs, prevention mechanisms and best therapy treatment programs available for children which would enhance awareness, correct misconceptions and reduce distress in the child as they go through treatment and provide a higher frequency and quality of distraction

PLENARY SESSIONS DAY 2

TOPIC: IS EARLY INCLUSION OF NERATINIB WITH HER BLOCKERS POSSIBLE IN THE TREATMENT OF STAGE 4 HER2 POSITIVE CANCER?

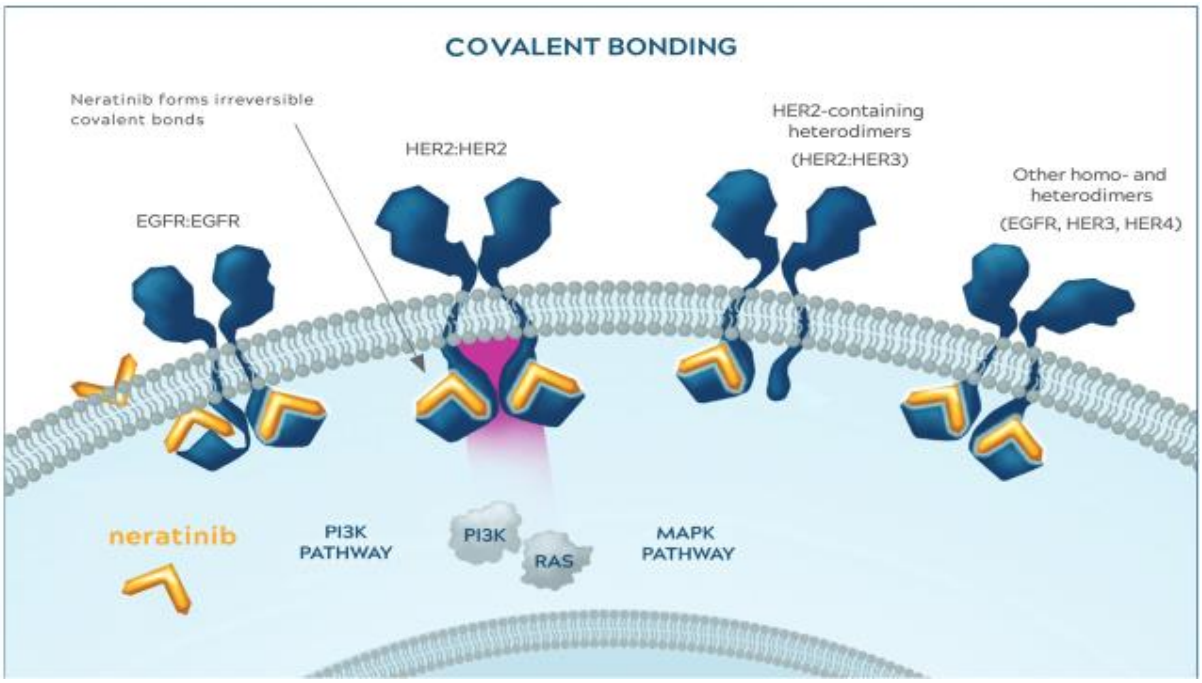
SPEAKER: DR. ZILOLA OLIMOVA, MD, CLINICAL ONCOLOGIST, HEAD OF DEPARTMENT, VITA ALLIANCE CLINIC, TASHKENT REGION, UZBEKISTAN

Background

Dr. Olimova began her presentation with the statement "the management of the patients with breast cancer and choosing the most effective therapy still remains a challenge, but an achievable goal."

30-50% of the patients with stage IV HER2-positive breast cancer have an increased risk of developing brain metastases. In most patients, effective therapy for Her2+ BC does not reach the CNS due to the blood-brain barrier, which in turn, can lead to cancer metastasis to the brain. Trastumuzab, Pertuzumab poorly penetrates the BBB however the treatment regimens with the inclusion of trastuzumab increase life expectancy in patients with HER2+ BC with CNS metastases, mainly due to controlling of extracranial lesions. In contrast, Neratinib penetrates the BBB well and its combination with capecitabine produces responses in intensively pre-treated patients, especially in cases where the only site of disease progression is the CNS.

Nreatinib is a small molecule that demonstrates irreversible intracellular pan-HER signalling inhibition



PAN-HER RECEPTOR TARGETING WITH NERATINIB

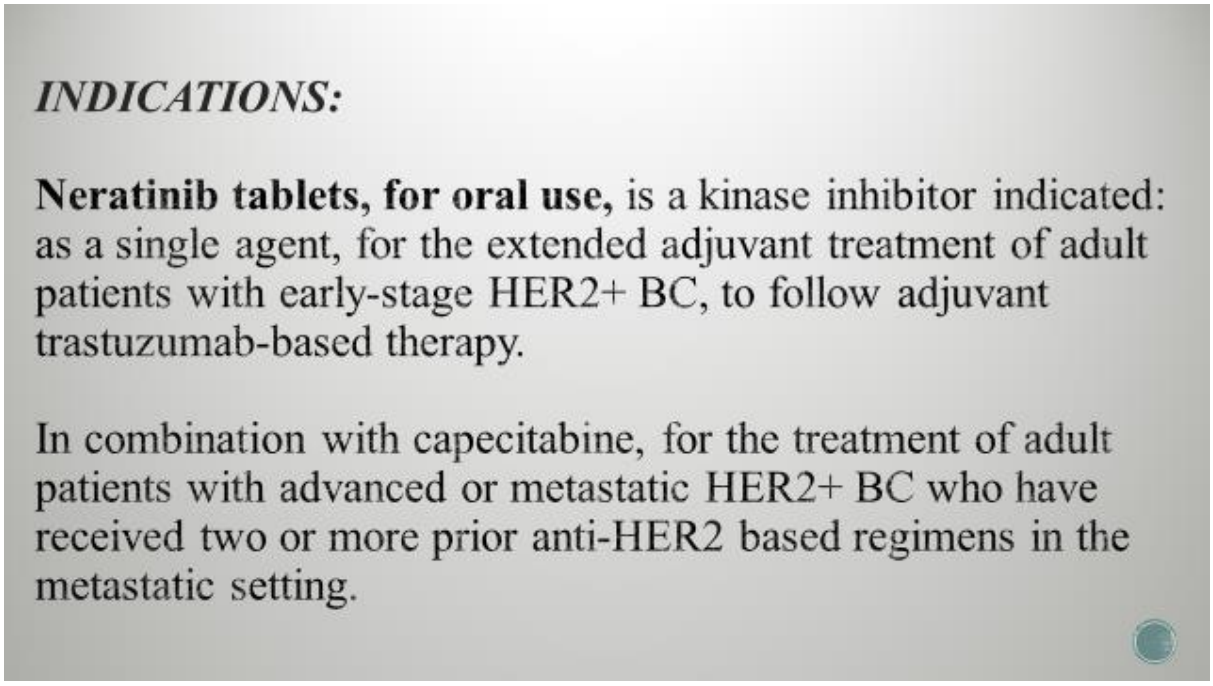
- Irreversibly inhibits HER1 (EGFR), HER2, and HER4 signaling[2]
- Also inhibits active HER3 heterodimer signaling by interfering with downstream signaling[2]

ANTI-TUMOR ACTIVITY OF NERATINIB

- Intracellular binding to the receptor tyrosine kinase signaling domain leads to sustained inhibition of signaling, inducing cell cycle arrest and apoptosis[2]
- Inhibition of downstream signaling reduces tumor cell growth and proliferation and induces tumor cell death in vitro[2]

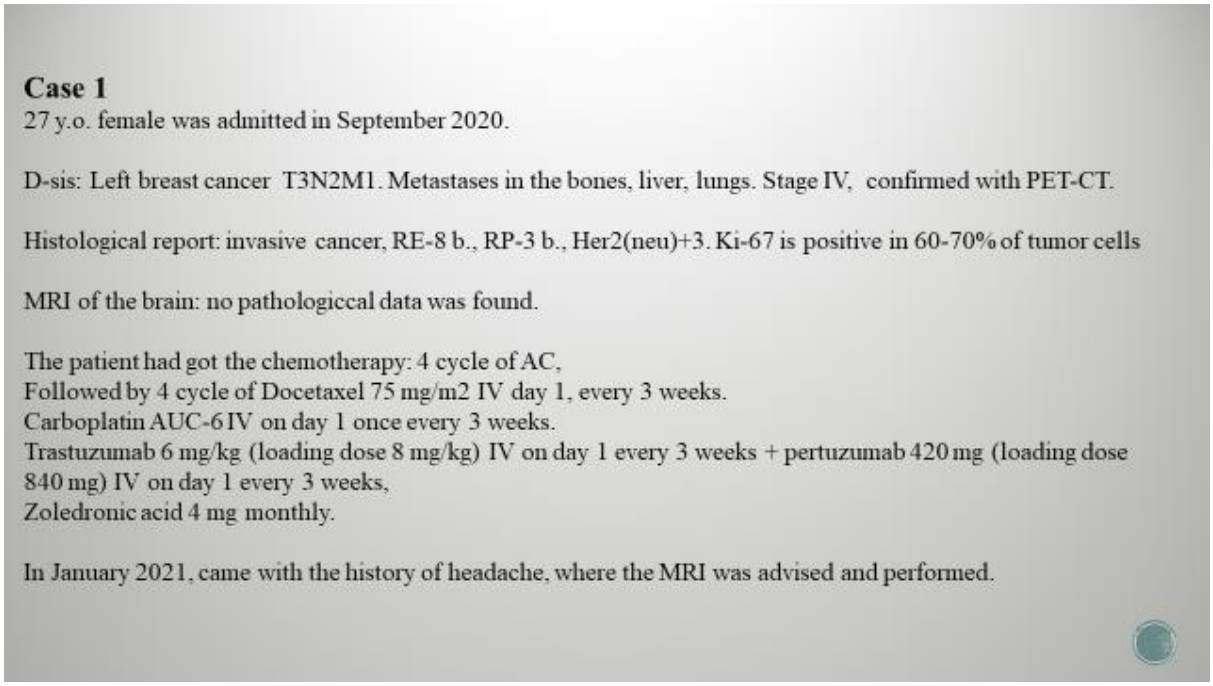
NERATINIB AND THE BLOOD-BRAIN BARRIER

- Neratinib passed through a cellular model of the blood-brain barrier, reducing the growth of HER2+ breast cancer cells[2,*,†]

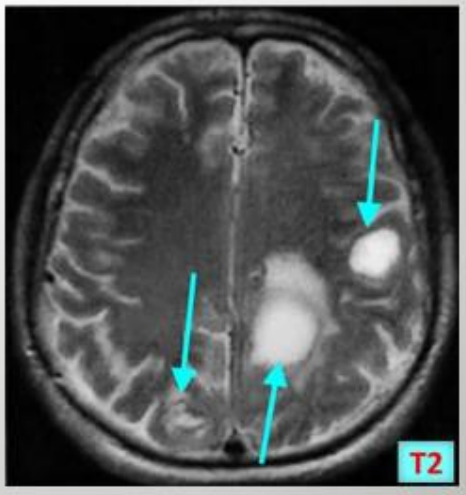


Dr. Olimiva presented clinical cases of 3 patients with advanced HER2+, HR+BC, where the rationale for the choice of each line of anti-HER therapy in accordance with the recommendations of the ontological communities was made, and the treatment results were compared.

Case Study 1

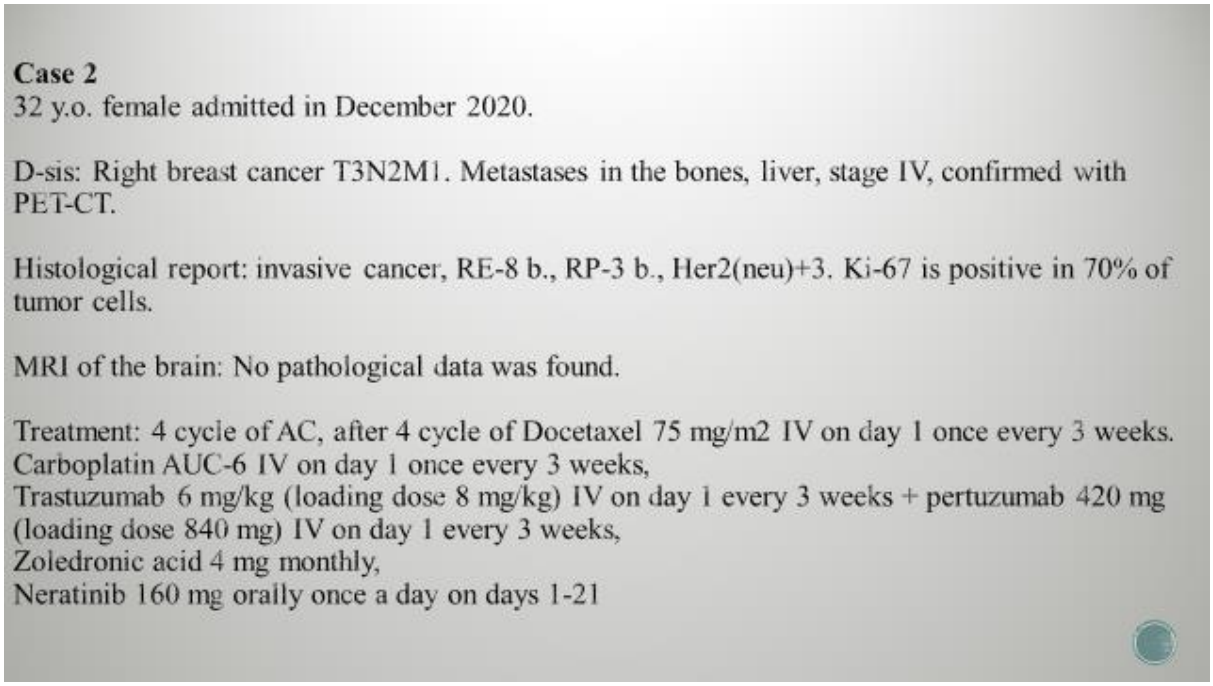


MRI signs of multiple brain metastases in the form of multiple areas of increased signal, surrounded by a zone of perifocal edema.



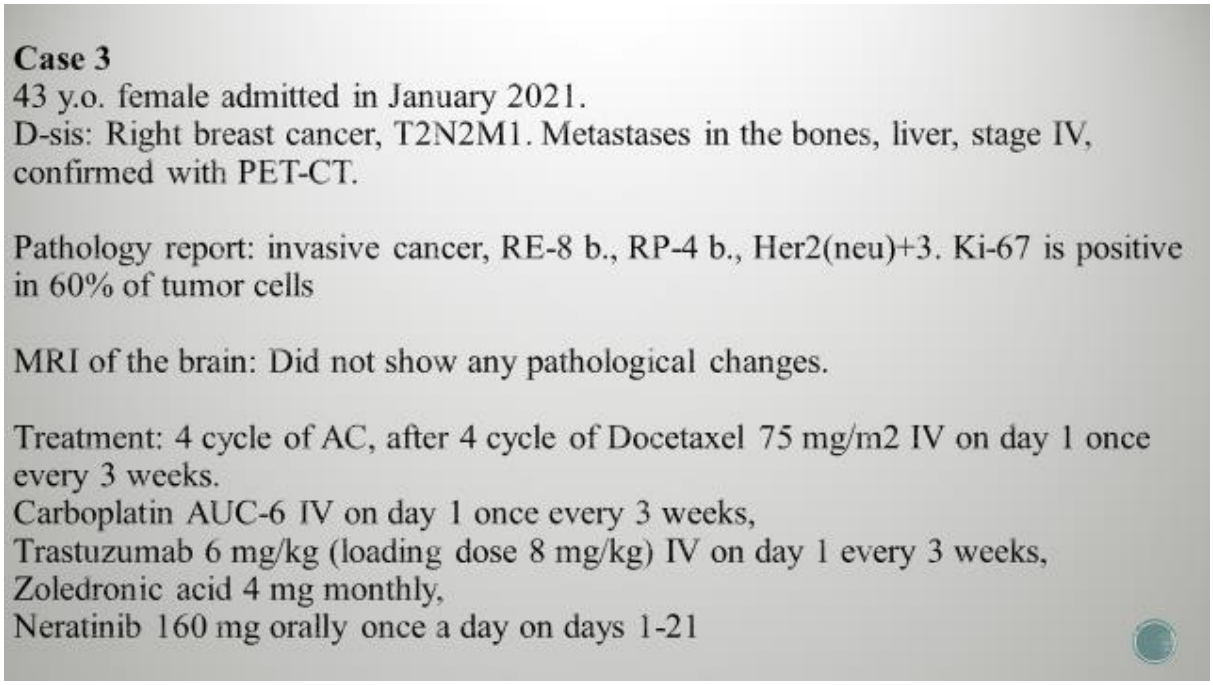
- The patient underwent a palliative course of total brain irradiation ROD 3 Gy, SOD 30 Gy.
- After that, the patient took 2 cycles of Neratinib 240mg orally once a day on days 1-21, in combination with Capecitabine 750mg/m2, orally twice on days 1-14 for each 21-day cycle, Trastuzumab 6mg/kg IV on day 1 once every 3 weeks.
- Despite treatment mentioned above, the patient died from progressive growth of the brain metastases.

Case study 2



- After PCT, repeat PET CT showed a complete regression of metabolic active foci in the liver and bones.
- MRI of the brain did not show any pathological changes.
- The patient underwent radical mastectomy.
- After that, the patient was treated with 6 courses of Trastuzumab 6mg/kg IV on the 1st day 1 time in 3 weeks
- Naratinib 160mg orally once a day on days 1-21,
- Zoledronic acid 4mg monthly
- Tamoxifen 20mg orally.
- Satisfactory tolerability was noted. The patient is currently in treatment.

Case Study 3



- After PCT, a repeat PET CT showed a complete regression of metabolic active foci in the liver and bones.
- MRI of the brain did not show any pathological changes.
- After that, the patient was treated with 6 cycle of Trastuzumab 6mg/kg IV on day 1 every 3 weeks, Zoledronic acid 4mg monthly, Tamoxifen 20mg orally.
- Satisfactory tolerability of therapy was noted.
- Patient is currently in treatment.

Conclusion

Of the above clinical cases, neoadjuvant use of Neratnib in patients with stage IV Her2+ breast cancer reduced the likelihood of brain metastasis. However, the problem of prevention of brain metastases in Her2+ breast cancer requires further study.

TOPIC: OVARIAN FUNCTION SUPPRESSION IN EARLY BREAST CANCER

SPEAKER DR. SITNA MWANZI, CONSULTANT MEDICAL ONCOLOGIST, AGA KHAN UNIVERSITY HOSPITAL

Background

Breast cancer is the most diagnosed cancer globally and locally in Africa. Hormone positive breast cancer accounts for 55-70% of all diagnosed breast cancers.

Most patients are diagnoses at stage 2 breast cancer in Africa, compared to early detection in the UK.

20 -30% patients treated at the metastatic stage will have a recurrence. Tumor size contributes to recurrence. Many countries in Africa report a lower age initial diagnosis indicating a higher percentage of premenopausal women who may be eligible for ovarian function suppression.

Is there something bout loss of oestrogen that causes regression of the disease?

Ovarian Functions Suppression is not a new therapy and there is conflicting evidence where some cases have shown that OFS works and others show no benefit of OFS to the point where Dr. Mwanzi said "*this generation will say YES to OFS; the next generation will say NO to OFS"*

Does Chemotherapy induce menopause and could this be one of the benefits of chemotherapy for breast cancer patients?

Phase III Text and Soft trials produced practice changing results in the treatment of breast cancer in young women.

Method

Premenopausal women were randomly assigned to receive 5 years tamoxifen, tamoxifen plus ovarian suppression, or exemestane plus

ovarian suppression in SOFT and to receive tamoxifen plus ovarian suppression or exemestane plus ovarian suppression in TEXT.

Many of the patients were premenopausal and it was therefore not clear if they had benefitted from OFS.

The only sub group that benefited were:

- Higher risk patients
- Those who had larger tumors

Toxicity of OFS was observed in a number of patients who, aside from coping with cancer treatment, also had to endure the side effects of menopause such as sweating, hot flashes and even depression.

In conclusion, if OFS is to be used, the following should be considered

- Patient should be less than 35 years old
- Those at high risk enough for chemotherapy
- Those that will remain premenopausal after treatment

TOPIC: HORMONE POSITIVE METASTATIC BREAST CANCER

SPEAKER: DR NJOKI NJIRAINI, CONSULTANT CLINICAL ONCOLOGIST

Background

International Consensus Guidelines for advanced breast cancer definitions as presented by Dr. Njoki Njiraini are that Endocrine Resistance is defined as follows:

Primary: Relapse while on the first two years adjuvant endocrine therapy or progression within the first 6 months of first line endocrine therapy.

Secondary: Relapse while on adjuvant endocrine therapy but after the first two years or relapse within 12 months of completing adjuvant

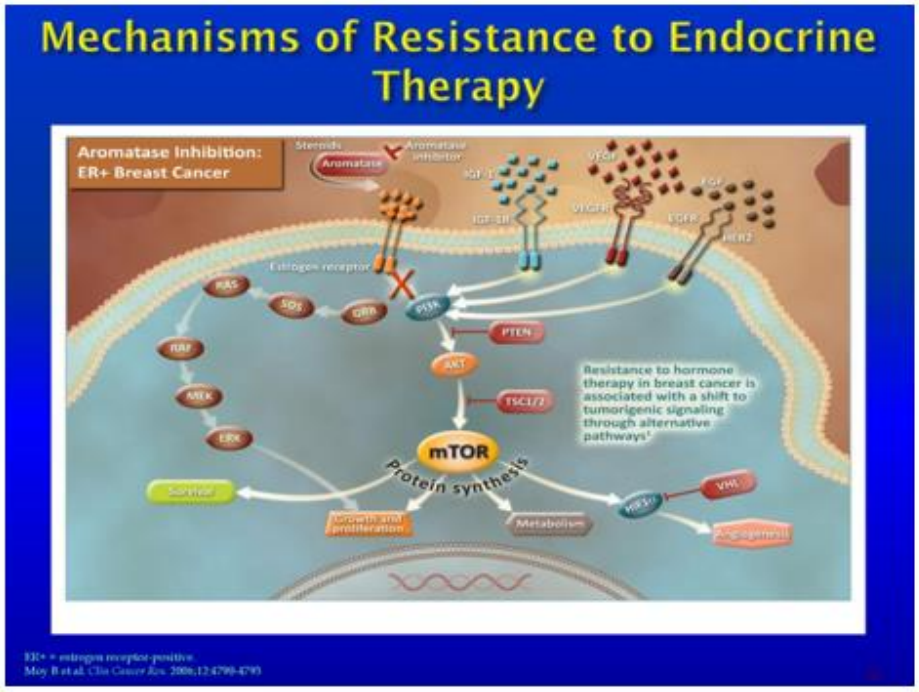
endocrine therapy or progression more than six months after initiating endocrine therapy for metastatic breast cancer.

Dr Njiraini submitted that in many parts of Sub-Saharan Africa a majority still engage in medical practices of 1970s.

She said access to various therapy lines in matters cancer treatment is significant but the major challenge is lack of access.

“There are multiple lines of therapy and patients can do well on those ones,” Dr Njiraini.

The following illustration highlights Mechanisms of Resistance to Endocrine Therapy.



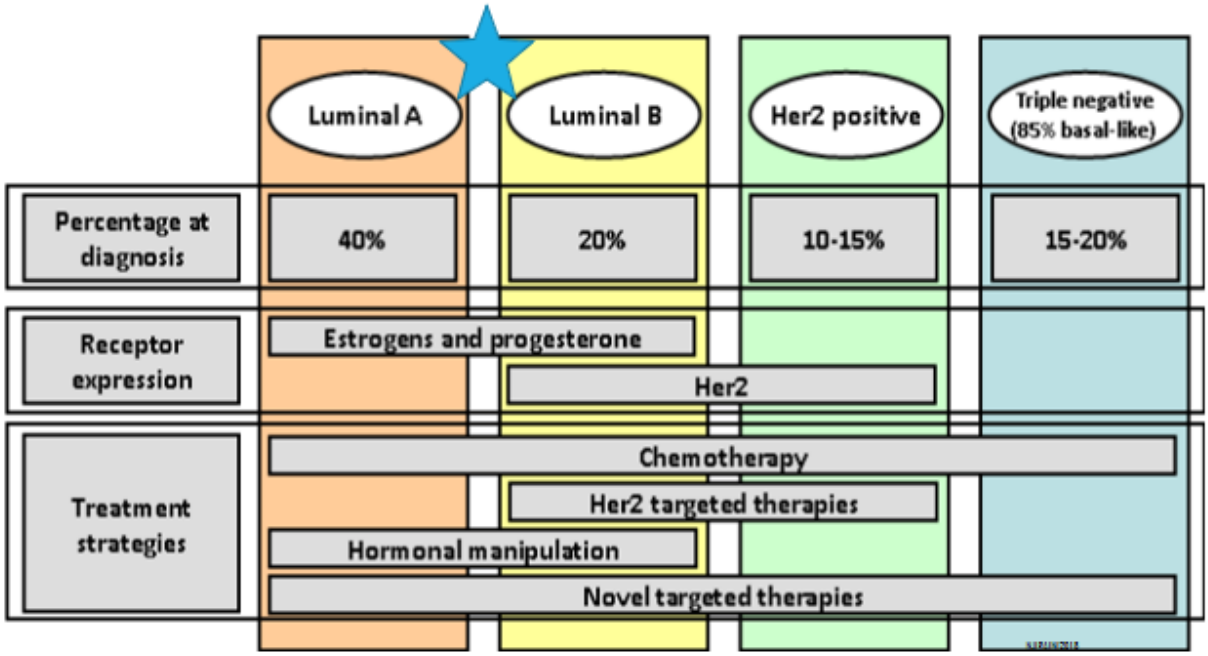
The following images show Endocrine-Based Therapies for Breast Cancer since 1970s to 2010s.

Endocrine-Based Therapies for Breast Cancer

Year	Agent	Mechanism
1977	**SERMs** Tamoxifen Toremifene	Antagonizes ER in breast tissue
1990s	**AIs** Anastrozole Exemestane Letrozole	Inhibit estrogen production in postmenopausal women
2000s	**ERD** Fulvestrant	Impairs ER dimerization, increases ER degradation, and disrupts nuclear localization of ER
2010s	**Combinations** Exemestane/everolimus Letrozole/palbociclib Fulvestrant/palbociclib	Blockade of estrogen signaling and prosurvival or cell cycle pathways

Lim E, et al. Oncology (Williston Park). 2012;26:688-694.
Croxtall JD, et al. Drugs. 2011;71:363-380.
Vidula N, et al. Clin Breast Cancer. 2016;16:8-17.
Mustonen MV, et al. World J Clin Oncol. 2014;5:393-405.

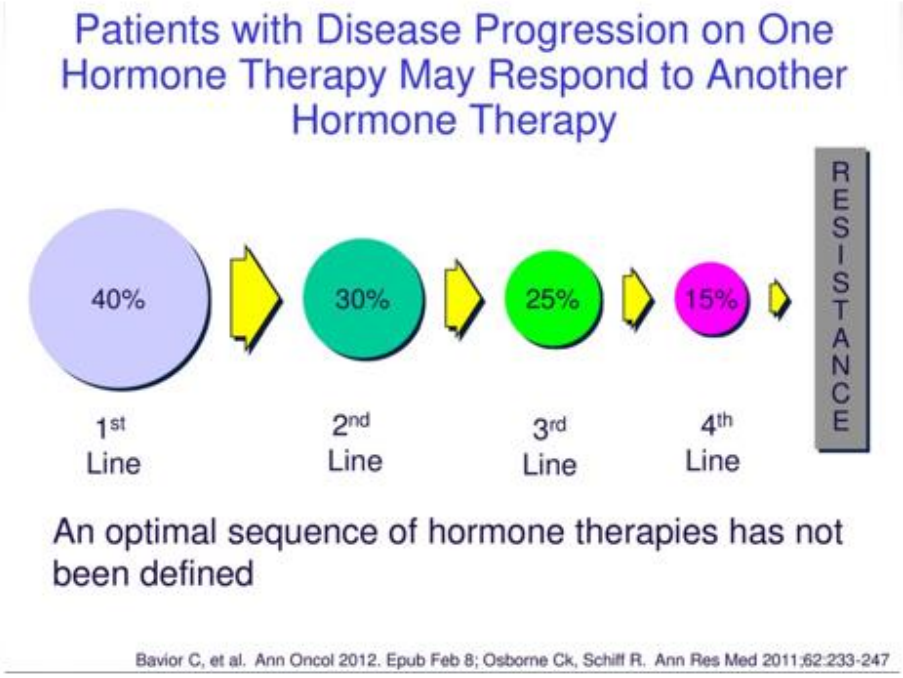
Slide credit: clinicaloptions.com

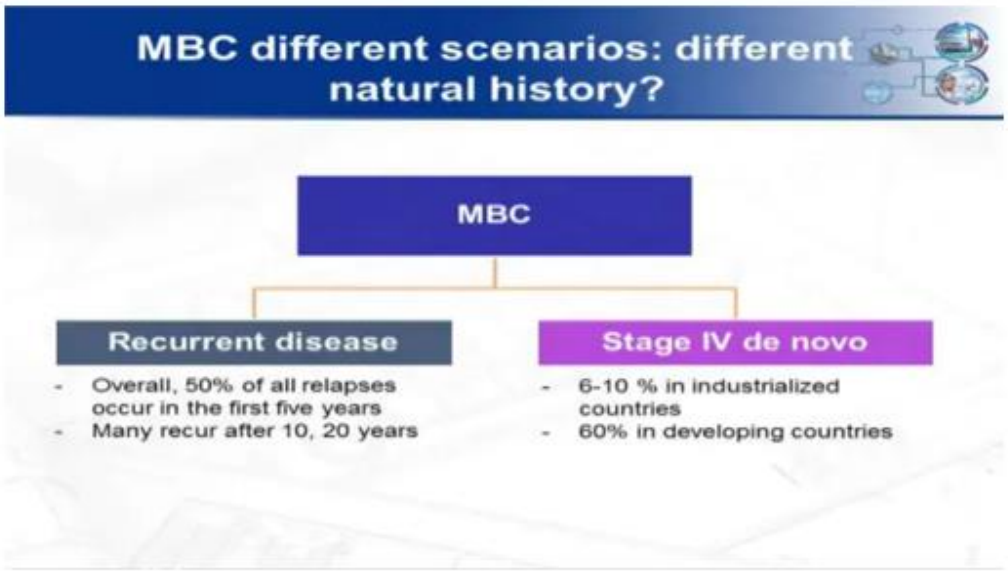


Major goals of Endocrine Therapy in MBC

- Reduce cancer-related symptoms
- Increase progression-free survival
- Increase time to chemotherapy
- Improve quality of life
- Increase overall survival

"Patients with Disease Progression on *One Hormone Therapy* May Respond to Another Hormone Therapy as shown below," Dr Njiraini explained.





FULVESTRANT + CDK4/6

MONALEESA 3 (n – 726)

HR+ disease with no previous therapy or progressed on previous therapy

Fulvestrant + Ribociclib vs Fulvestrant

Improved PFS 21 vs 13 months (HR 0.59, 95% CI 0.48-0.73) – benefit was across board for the patients . OS at 45 months better in the combination arm

PALOMA 3 – Palbociclib + Fulvestrant vs Fulvestrant

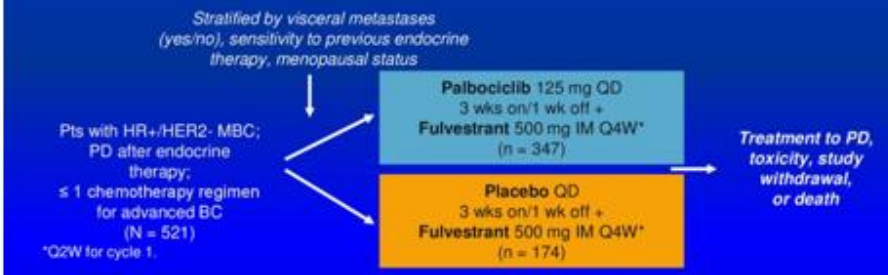
Pre and post menopausal HR positive, Her2 negative, progressed on endocrine therapy

Goserelin for the pre-menopausal patients

Median PFS 9.5 vs 4.6 months (HR 0.46, p<0.000001)

Neutropenia in 65% of patients

PALOMA-3: Fulvestrant ± Palbociclib for Previously Treated Adv HR+/HER2- MBC



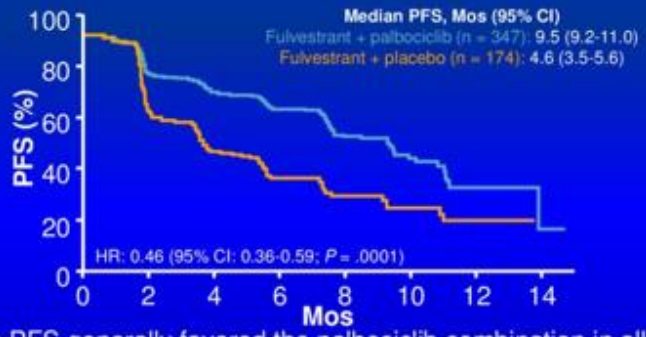
- Primary endpoint: investigator-assessed PFS
- Secondary endpoints: ORR, CBR (CR, PR, or SD for ≥ 24 wks), OS, pt-reported outcomes, safety

Cristofanilli M, et al. Lancet Oncol. 2016;17:425-439.

Slide credit: clinicaloptions.com

PALOMA-3: PFS in Overall Population and Specific Pt Subgroups

- Median follow-up: 8.9 mos



- Median PFS generally favored the palbociclib combination in all pt subgroups analyzed

Cristofanilli M, et al. Lancet Oncol. 2016;17:425-439.

Slide credit: clinicaloptions.com

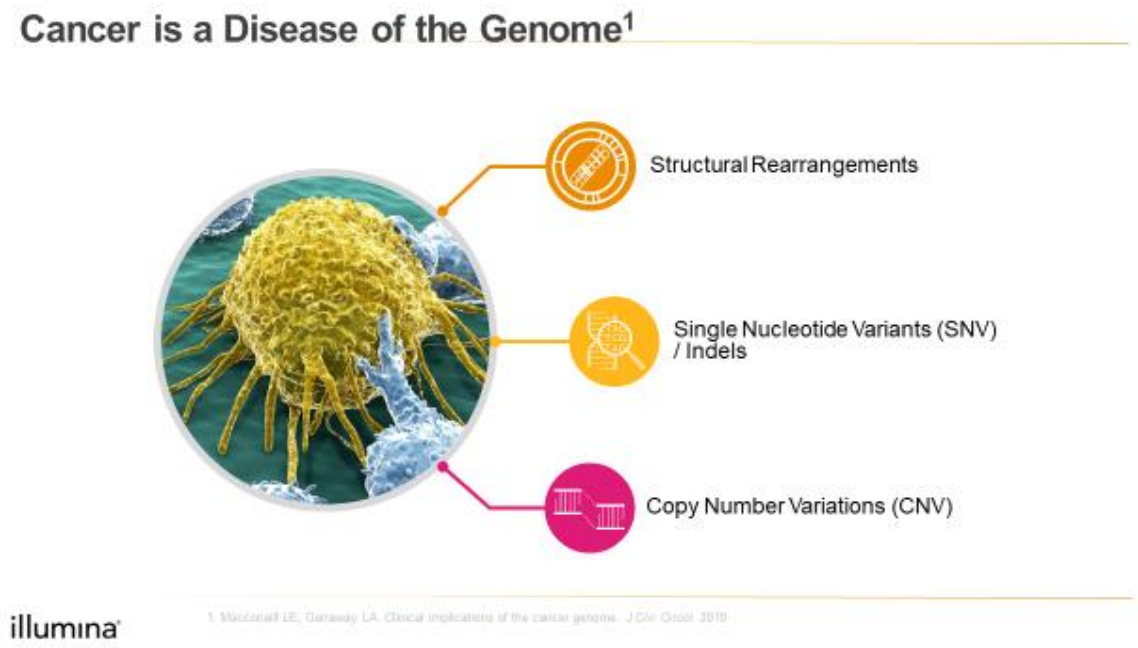
Recommendations

- Multiple lines of therapy for patients.
- Careful selection and assessment especially on progression.
- Patients can do well for years on multiple therapy lines.

TOPIC: POWER OF NEXT GENERATION SEQUENCING TO BATTLE CANCER

SPEAKER: AGNIESZKA GRYBOS- GAJNIAK, SENIOR CLINICAL SALES SPECIALIST

Background



The presenter took participants through ways in which molecular profiling can assist in diagnosis especially target therapy and through the cancer patient's journey. Molecular profiling can detect mutations.

The impact of genetic testing and risk reduction was shown as follows

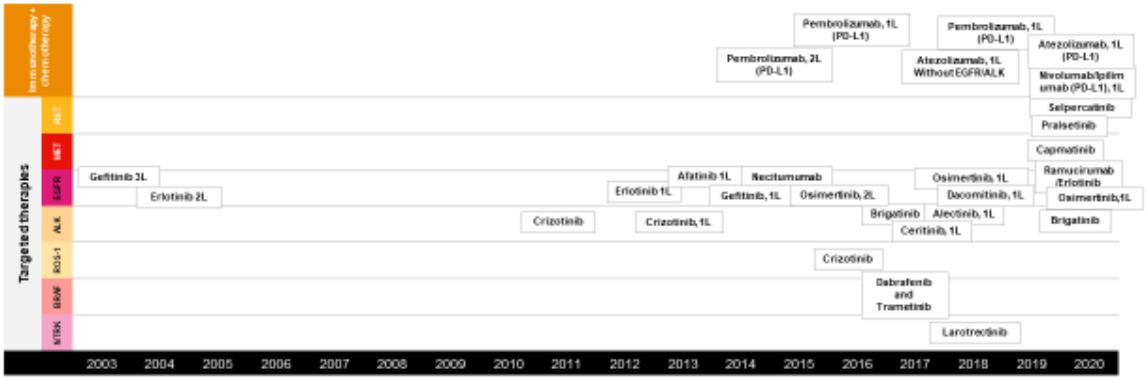
Impact of genetic testing on screening and risk reduction

Genes (n=48)		ASCO 2019 Presentation Recommendations: ACS, ACOG, ASCO, ClinGen, and/or NCCN
Breast	ATM, BARD1, BRCA1, BRCA2, CDH1, CHEK2, NBN, NF1, PALB2, PTEN, STK11, TP53	Annual screening breast magnetic resonance imaging
Colon	APC, AXIN2, BMPR1A, CHEK2 EPCAM, GREM1, MLH1 MSH2, MSH6, PMS2, MSH3 (Homozygote, h); MUTYH (h), NTHL1 (h), POLD1, POLE, PTEN, SMAD4, STK11, TP53	Earlier and more frequent colonoscopy/endoscopy
Breast	BRCA1, BRCA2, PALB2, PTEN, STK11, TP53	Risk reducing mastectomy
Ovarian	BRCA1, BRCA2, BRIP1, EPCAM, MLH1, MSH2, MSH6, PMS2, RAD51C, RAD51D	Risk-educing salpingo-oophorectomy, =/- hysterectomy
Colon	APC	Risk-reducing colectomy
Gastric	CDH1	Risk-reducing gastrectomy
Kidney	MEN1, NF2, RB1, RET, SDHAF2, SDHB, SDHC, SDHD, TSC1/2, VHL, TP53, WT1	Other targeted screening (eg, RCC, pheochromocytoma)

illumina

Fast Pace of Biomarker-driven Indications

29 NSCLC biomarker-driven indications since 2003 in the US[2]



US FDA-approved indications of NSCLC treatments since 2003. Abbreviations: 1L, first-line; 2L, second-line; ALK, anaplastic lymphoma kinase; BRAF, murine sarcoma viral oncogene homolog B; del19, deletion in exon 19; EGFR, epidermal growth factor receptor; FDA, Food and Drug Administration; NSCLC, non–small cell lung cancer; NTRK, neurotrophic tropomyosin receptor kinase; PD-L1, programmed-death ligand 1; ROS1, c-ros1 oncogene; SqCC, squamous-cell carcinoma.

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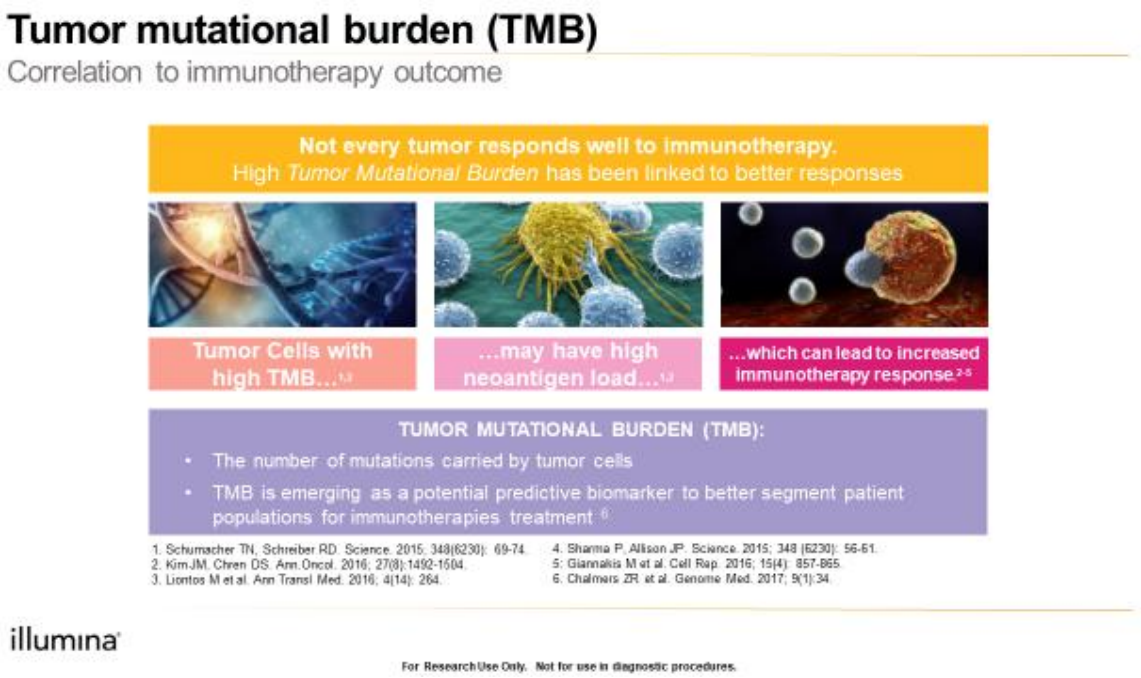
Tumor Mutilation Burden (TMB)

This is the number of mutilations carried by tumor cells. TMB is emerging as a potential predictive biomarker to better segment patient populations for immune-therapies treatment.

Correlation to immunotherapy outcome

Grybos-Gajniak pointed out that not every tumor responds well to immunotherapy. However, high TMB has been linked to better responses



How do we detect genetic alterations in cancer?

Traditional methods:

- Karyotyping
- FISH
- ACGH
- IHC
- RT – PCR
- Sanger Sequencies

Next- Generation Sequencing (NGS)

How does it work?

- Interrogates the sequence of any given gene of interest
- High throughput processes

- Fluorescent nucleotides are added one by one onto a growing template
- Each incorporated nucleotide is identified by its fluorescent tag
- NGS can be applied to a subset of key genes or the entire genome

NGS can discover

- DNA VARIANTS
    - SNVs
    - INDELS
    - CNVs
- RNA VARIANTS
    - Fusions
    - Splice variants
- IO MARKERS
    - TMB
    - MSI

Germline and Somatic Mutations

Germline is present in every cell of an individual at birth, either from birth or due to a de novo mutation which may result in a predisposition of cancer.

Somatic mutations arise sporadically in the cells of an individual possibly from DNA damage, smoking, UV or a DNA replication era.

Why test for germline mutations

- Evaluate the risk of developing cancer at some point during lifetime

- Alert family members about potential risk
- Genetic counselling
- Screening for early detection of cancer such as colonoscopy and mammography
- Prophylactic surgery

Why test for somatic mutations?

- Diagnosis
- Prognosis
- Therapy selection
- Startification for clinical trials
- Treatent monitoring

Conclusion

NGS generates multiple results while shortening the turn around time of diagnosis and treatment.

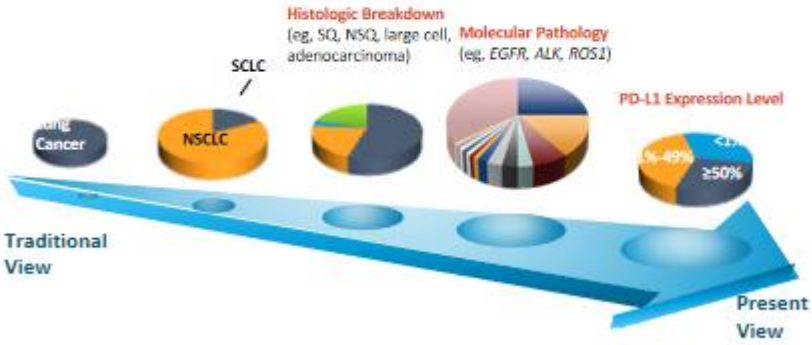
TOPIC: MOLECULAR PROFILING AND ITS IMPACT ON NSCLC TREATMENT

SPEAKER: PROF. MOHSEN MOKHTAR, MD CAIRO UNIVERSITY

Background

Evolution of Therapy in Lung Cancer

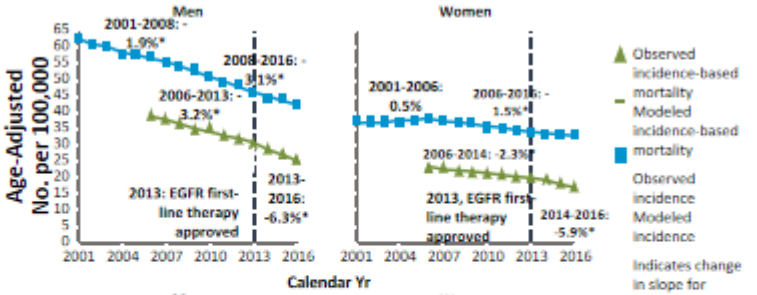
Evolution of Therapy in Lung Cancer



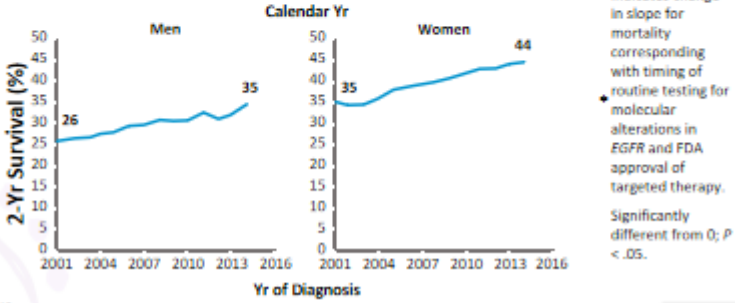
Cooper. Pathology. 2011;43:103. Langer. J Clin Oncol. 2010;28:5311. Galon. Immunity. 2013;39:11. Poo. Lancet Oncol. 2011;12:175. Krigsfeld. AACR 2017. Abstr CT143. Hellmann. NEJM. 2018;378:2093.

Why Is Biomarker Testing in NSCLC Important?

Trends in Incidence and Incidence-Based Mortality



Trends in NSCLC-Specific Survival

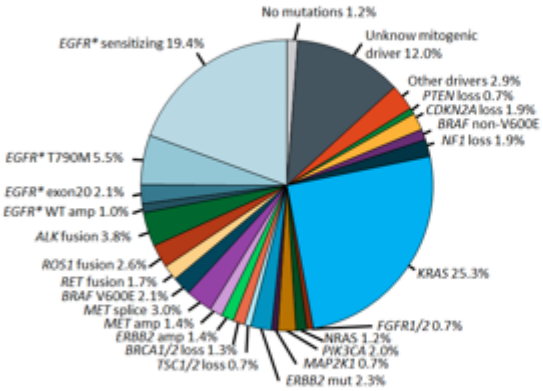


Indicates change in slope for mortality corresponding with timing of routine testing for molecular alterations in *EGFR* and FDA approval of targeted therapy.

Significantly different from 0; $P < .05$.

Howlader. NEJM. 2020;383:640.

Diversity of Driver Mutations in NSCLC



Lung adenocarcinoma now divided into molecular subsets

For many subsets, first-line treatments are targeted therapies

- Approved targeted treatments available for alterations in *EGFR*, *ROS1*, *ALK*, *NTRK*, *BRAF*, *MET*, *RET*, *Her2* ,*KRASG12C*

Some mutations also found in squamous NSCLC!

Jordan. Cancer Discov. 2017;7:596.

NCCN Guidelines Version 5.2021 Non-Small Cell Lung Cancer

TESTING RESULTS
EGFR mutation positive (eg, *exon 19* deletion or *L858R*)
EGFR exon 20 insertion mutation positive
KRAS G12C mutation positive
ALK rearrangement positive
ROS1 rearrangement positive
BRAF V600E mutation positive
NTRK1/2/3 gene fusion positive
METex14 skipping mutation positive
RET rearrangement positive
PD-L1 ≥50% and negative for actionable molecular markers above
PD-L1 ≥1%–49% and negative for actionable molecular markers above
PD-L1 <1% and negative for actionable molecular markers above

ADAURA: Study Design

- International, randomized, double-blind phase III trial (data cutoff for interim analysis: 1/17/2020)
  - IDMC recommended early unblinding due to efficacy; at time of unblinding, trial had completed enrollment and all patients had ≥ 1 yr of follow-up

Patients with completely resected stage IB/II/IIIA NSCLC with negative margins; primary nonsquamous NSCLC with *EGFR* ex19del or L858R*; aged ≥ 18 yrs (≥ 20 yrs in Japan/Taiwan); WHO PS 0/1; brain imaging done; adj CT permitted; maximum time from surgery to randomization: 10 wks without adj CT, 26 wks with adj CT (N = 682)

Stratified by stage (IB vs II vs IIIA), EGFR mutation (ex19del vs L858R), race (Asian vs non-Asian)

Osimertinib 80 mg QD (n = 339)

Placebo QD (n = 343)

Until 3 yrs, recurrence, or d/c criterion met†

*Confirmed centrally in tissue. †Follow-up: until recurrence, Wks 12 and 24, then Q24W to 5 yrs, then yearly; after recurrence, Q24W for 5 yrs, then yearly.

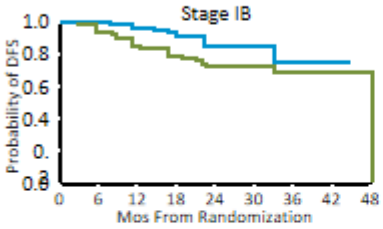
Primary endpoint: investigator-assessed DFS in patients with stage II/ IIIA disease

Trial designed to test superiority with assumed DFS HR of 0.70

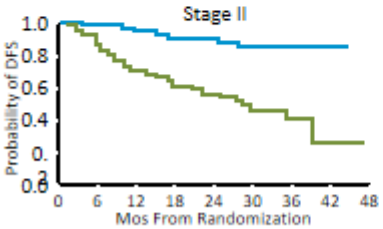
Secondary endpoints: DFS in overall population; landmark DFS rates at Yrs 2, 3, 4, and 5; OS; HRQoL; safety

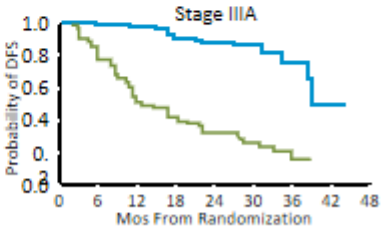
Herbst. ASCO 2020. Abstr LBA5.

ADAURA: DFS by Stage of NSCLC



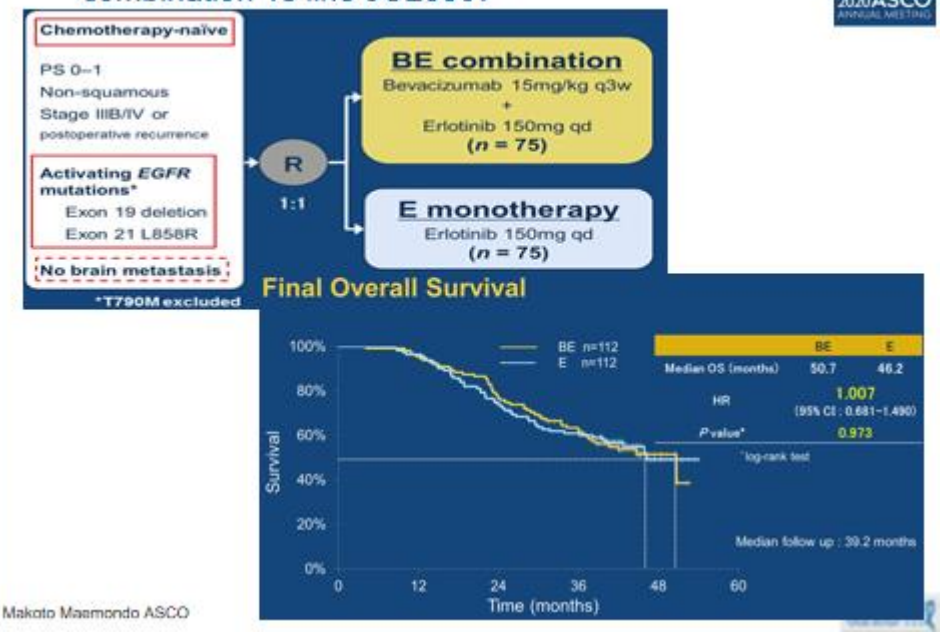
	Stage IB	Stage II	Stage IIIA
2-yr DFS rate, %			
Osimertinib	87	91	88
Placebo	73	56	32
Overall HR (95% CI)	0.50 (0.25-0.96)	0.17 (0.08-0.31)	0.12 (0.07-0.20)





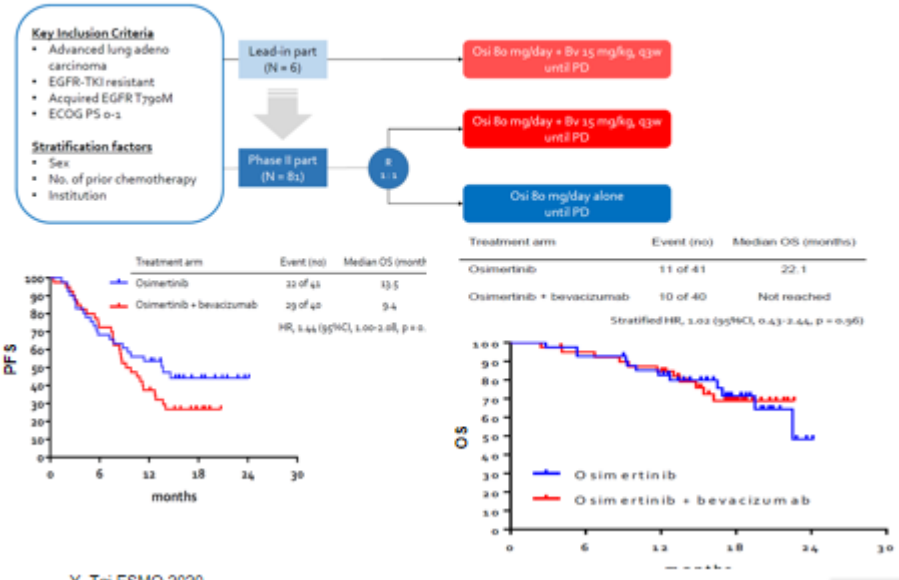
Herbst. ASCO 2020. Abstr LBA5..

Final OS analysis Bevacizumab plus Erlotinib combination 1s line JO25567

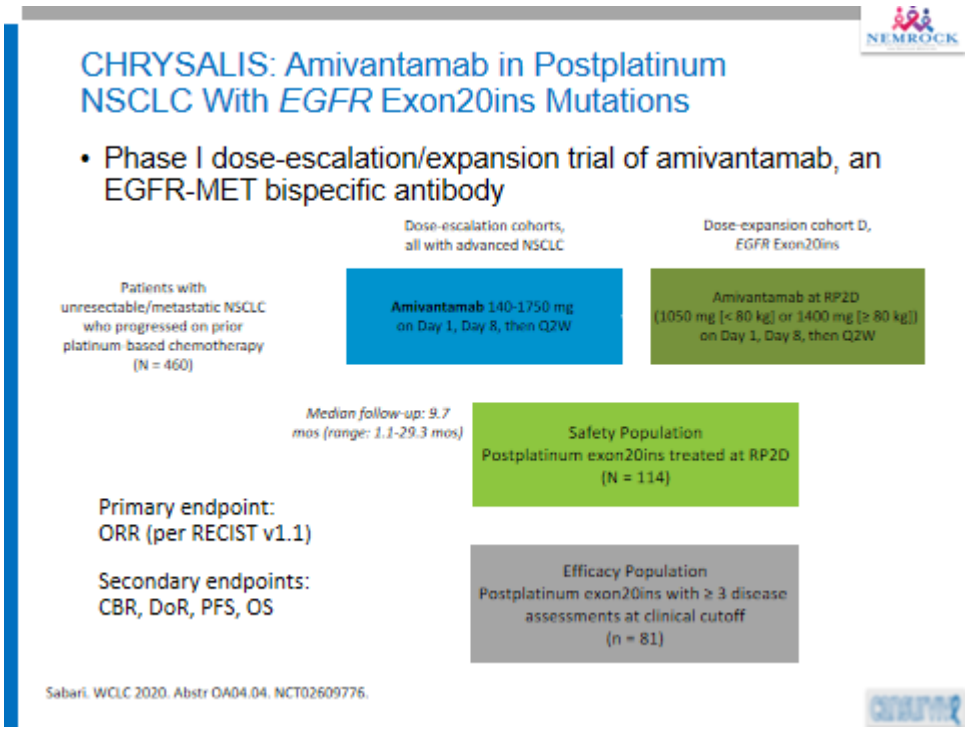


Makoto Maemondo ASCO

2nd line Osimertinib +/- Bev Resistant EGFR T790m



Y. Toi ESMO 2020



Updated results from a Phase 1/2 Study of Mobecertinib in NSCLC with EGFR Exon 20 insertions.

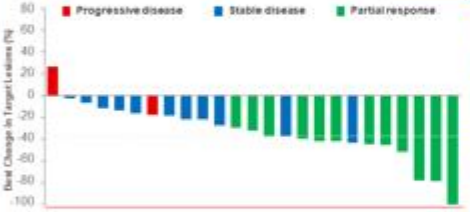
Updated Results From a Phase 1/2 Study of Mobocertinib in NSCLC With *EGFR* Exon 20 Insertions

Expansion 160 mg qd in *EGFR* exon 20 with prior therapy

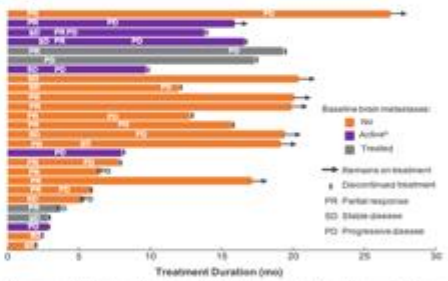
54% >3 prior lines

at 160 mg qd (n=28)[a]

Antitumor Activity



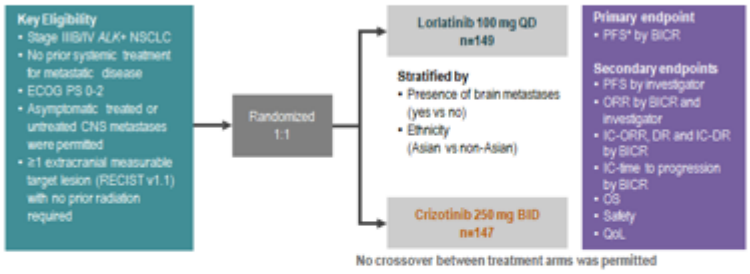
Overall Response and Time on Treatment



- Mobocertinib at recommended phase 2 dose (160 mg qd) showed antitumor activity in patients with *EGFR* exon 20 insertion mutations
  - 43% confirmed objective response rate (n=12/28) with 13.9-month median duration of response and 7.3-month median progression-free survival in all patients, including those with baseline central nervous system metastases

Gregory J Riely ESMO 2020

Lorlatinib vs Crizotinib *ALK*-Positive Non-Small Cell Lung Cancer: Phase 3 CROWN Study

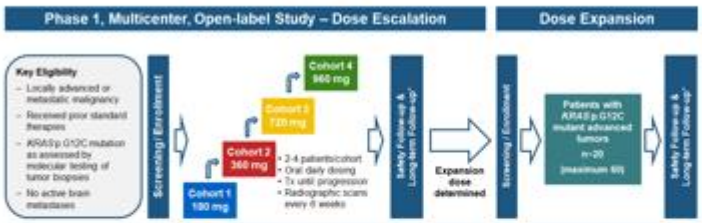


No crossover between treatment arms was permitted

	Lorlatinib	Crizotinib	
PFS	NE	9.3	HR 0.28 P<0.001
CNS progression	NE	16.6	HR 0.07 P<0.001
OS	NE	NE	HR.72

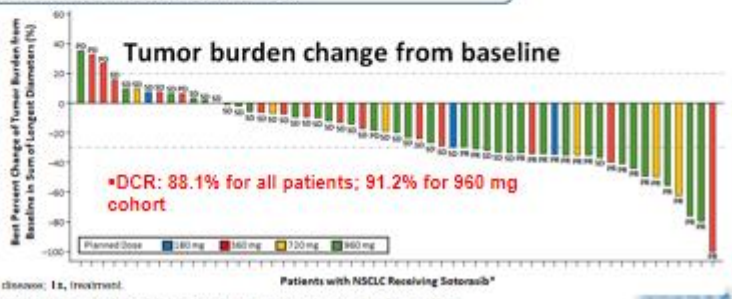
Solomon B ESMO 2020

Phase 1 study design (CodeBreaK 100:)
Sotorasib (AMG 510)



Primary endpoint: safety
Secondary endpoints include: PK, ORR, DOR, DCR, PFS, duration of SD

960 mg dose of sotorasib was identified as the Phase II dose in NSCLC



PK, pharmacokinetic; SD, stable disease; Tx, treatment.

Hong DS. Oral presentation at European Society of Medical Oncology 2020 Virtual Congress, September 18-21, 2020.

CodeBreaK100 Update: Efficacy Summary

Outcome	Sotorasib 960 mg QD (N = 124)
Confirmed ORR, % (95% CI)*	37.1 (28.6-46.2)
▪ CR, n (%)	4 (3.2)
▪ PR, n (%)	42 (33.9)
▪ SD, n (%)	54 (43.5)
▪ PD, n (%)	20 (16.1)
▪ Not evaluable or missing scan, n (%)	4 (3.2)
DCR, % (95% CI)	80.6 (72.6-87.2)
Median DoR, mo (95% CI)	11.1 (6.9-NE)
Median TTR, mo (range)	1.35 (1.2-10.1)
Median PFS, mo (95% CI)	6.8 (5.1-8.2)

Skoulidis. ASCO 2021. Abstr 9003. Skoulidis. NEJM. 2021[Epub ahead of print].

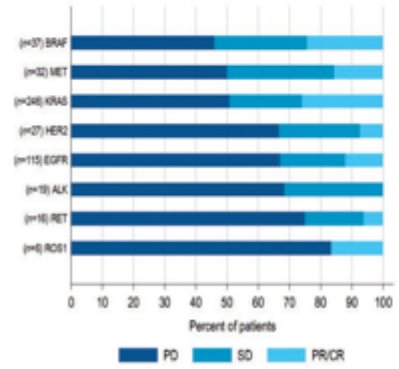
Positive trials in rare types

Positive trials in rare types

***Her2* mutation positive**	Destiny
***BRAF* V600E mutation positive**	Dabrafenib+Trametinib
***NTRK1/2/3* gene fusion positive**	Entrectinib. Larotrectinib
***METex14* skipping mutation positive**	Geometry
***RET* rearrangement positive**	ARROW

Best ORR according to driver mutation Targeted versus ICI

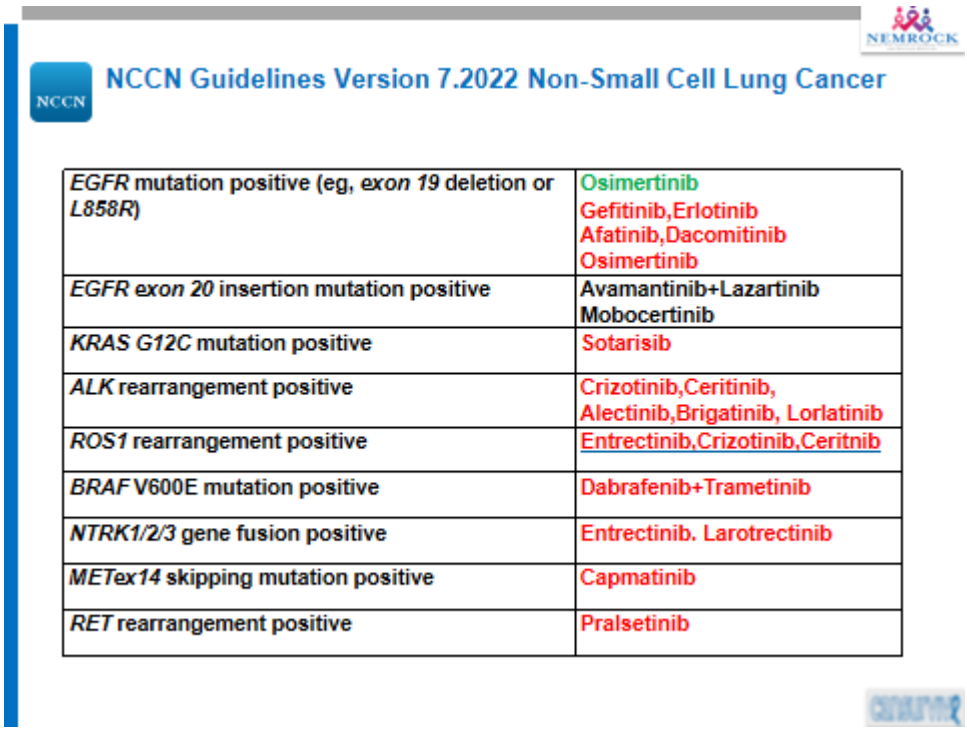
	EGFR	*ALK*	*ROS1*	*BRAF*	*KRAS*	*HER2*	*MET*	*RET*	*NTRK*
Targeted therapy	80%[3]	83%	77%	64%	54%[5]	55%	71%	68%	75%
ICI	11%	4%	14%	24%	57%[4]	15%	23%	11%	NA
					25%				
ICI + targeted therapy	75%[3]	81%[3]							
Chemotherapy + ICI	81%[3]	NA			41%				



. PFS according to primary oncogenic driver from initiation of ICI

	EVT/*N*	Median PFS (95% CI) (months)
KRAS	208/271	3.2 [2.7; 4.5]
EGFR	117/125	2.1 [1.8; 2.7]
BRAF	34/43	3.1 [1.8; 4.6]
HER2	23/29	2.5 [1.8; 3.5]
MET	26/36	3.4 [1.7; 6.2]
ALK	21/23	2.5 [1.5; 3.7]
ROS1	–	–
RET	15/16	2.1 [1.3; 4.7]

Mazzeris et al. Annals of Oncology 2019
ASCO Educational book 2020



NCCN Guidelines Version 7.2022 Non-Small Cell Lung Cancer

EGFR mutation positive (eg, *exon 19* deletion or *L858R*)	Osimertinib Gefitinib,Erlotinib Afatinib,Dacomitinib Osimertinib
EGFR exon 20 insertion mutation positive	Avamantinib+Lazartinib Mobocertinib
KRAS G12C mutation positive	Sotarisib
ALK rearrangement positive	Crizotinib,Ceritinib, Alectinib,Brigatinib, Lorlatinib
ROS1 rearrangement positive	Entrectinib,Crizotinib,Ceritnib
BRAF V600E mutation positive	Dabrafenib+Trametinib
NTRK1/2/3 gene fusion positive	Entrectinib. Larotrectinib
METex14 skipping mutation positive	Capmatinib
RET rearrangement positive	Pralsetinib

TOPIC: A COLLABORATIVE DEVELOPMENT OF A COMPETENCY-BASED SURGICAL ONCOLOGY FELLOWSHIP PROGRAM IN WEST AFRICA: QUEENS /WACS COLLABORATION

SPEAKER: SULAIMAN NANJI, MD, PhD, FRCSC, CIP QUEEN'S UNIVERSITY, ONTARIO, CANADA

Background

Dr. Sulaiman Nanji's presentation focused on the academic side of oncology specifically training of surgeons in West Africa. He began by sharing projections of the Lancent Oncology Commission that shows;

- 21.6 million new cancer cases in 2030, ~65% in LMICs
- 80% will need surgery
- <25% have access to safe, affordable and timely surgery
- Case fatality rates in LMICs ~75%

The call to action is expansion of cancer care and control in countries of low and middle income.

Dr. Nanji explained the status of the region as far as colleges are concerned. He began with a brief history of the WASC which he said was established in 1960. The facility has grown has grown into a college of over 6,000 fellows from 18 countries and training in 7 specialties. According to Dr. Nanji, oversees residency and fellowship programs span across 58 training sites in 9 countries. He however noted that West Africa lacks the surgical oncologists needed to meet the rapidly growing demand of cancer surgery.

Goal

Collaboratively develop a competency-based postgraduate fellowship program in surgical oncology that is sustainable within the existing resources and infrastructure of WACS and the West African healthcare system**.**

Objectives

Educate healthcare leaders who:

1) Can provide comprehensive surgical oncology care that is responsive and sensitive

2) Generate knowledge related to best practices in surgical cancer care in the region

3) Ensure the sustainability and expansion of these services by training future generations of West African surgeons

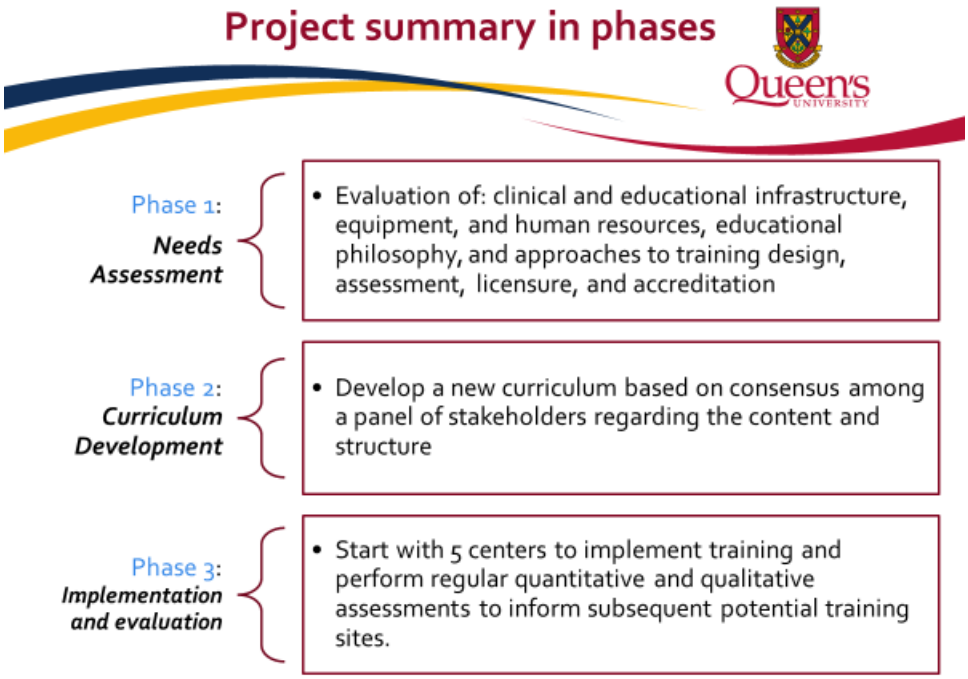
Project deliverables

- Conduct a comprehensive needs assessment to understand the local context

- Develop a new curriculum based on consensus among local stakeholders

- Generate a detailed program implementation plan

- Evaluate the program and identify strategies for program growth and sustainability



Aspiration

- Produce surgical leaders who can provide cancer care
- Empower local stakeholders and increase ownership

- Provide an educational blueprint to sustain this fellowship and support future program development
- Generate knowledge related to best practices in cancer care
- Create opportunities for research and scholarly work

- Ensure the sustainability and/or expansion of these services by training future generations of West African surgeons

Dr. Nanji noted that West Africa is prioritizing provision of improved cancer treatment. *"We want to assess the availability of clinical and educational infrastructure, equipment and human resources. Who is performing what surgeries out there? What skillet is already there that we can build upon? What is lacking? What is needed? Where do we need extra training? The expectation is to start with 5 flagship centres that will implement the program, conduct periodic evaluation to assess progress using the SWOT analysis."*

TOPIC: ENHANCING SURGICAL TRAINING WITH VIRTUAL REALITY

SPEAKER: Eric G. Bing, MD, PhD Professor of Global Health Southern Methodist University

Background

Prof Eric G. Bing made his submissions virtually about Enhancing Surgical Training with virtual Reality Simulation. He said that Virtual Reality provides an opportunity to train surgeons. However, he quickly pointed out that the challenge is that most systems are geared towards developed countries. Additionally, the system is quite costly.

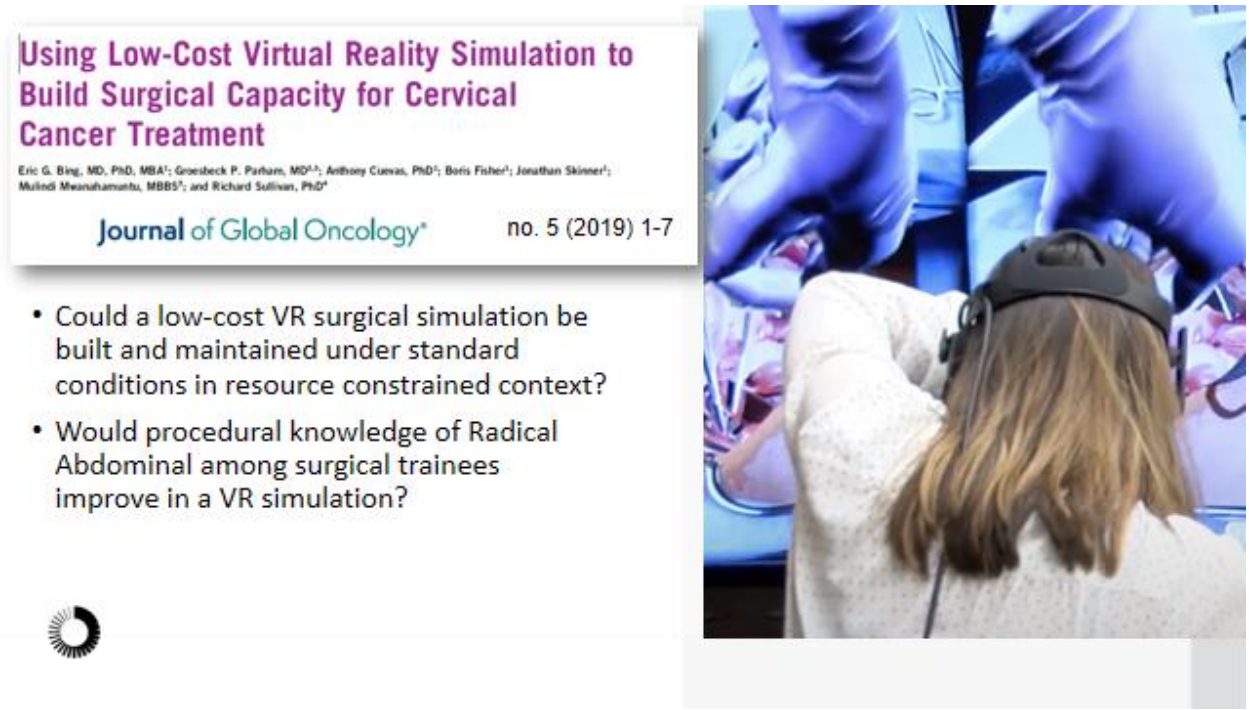
''We are trying to create a virtual reality surgical system that is simple and which can be taken up in low middle-income countries. One of the things we are doing is to build this in low income countries," Prof. Bing said.

In terms of learning the Virtual Reality skills (VR) it emerged that females are learning much quicker than men. Further, young people do better

than older ones in these simulations. But of significance to note is that the more simulations people did the more they became experienced.

Professor Bing also said that the advantages of VR learning increases surgical skills and knowledge. They did an assessment to look at their Knowledge, confidence and surgical skills.

Those who did the simulation saw their surgical skills improve after VR.Additionally, there was an Improvement in efficiency, handling equipment and their procedure knowledge.



Study Sample

- 10 trainees were enrolled at University Teaching Hospital, Lusaka Zambia.
- 8 Senior Medical Students, 1 OB/Gyn Resident, 1 OB/Gyn Fellow.
- Age – 35.8 (5.8) years.
- Men (60%), Women (40%).
- No experience with hysterectomy (medical students).
- Given access to the RAH-VR.
- Could perform up to 6 simulations per day.
- At the end of each session, they were asked to reflect on their performance, identify areas for improvement and create a plan to

improve.

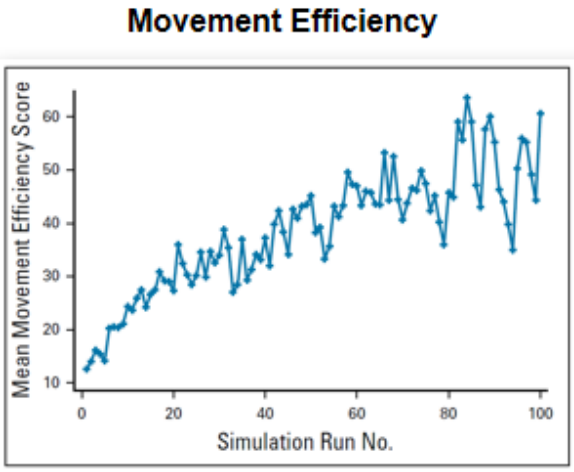


FIG 1. Movement efficiency scores by simulation run number.

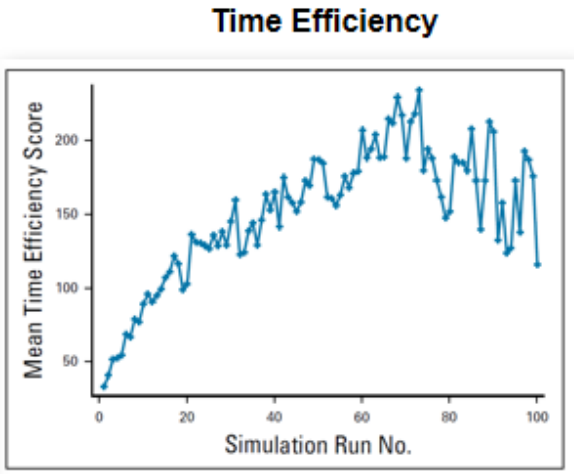


FIG 2. Time efficiency scores by simulation run number.

Predicting Efficiency

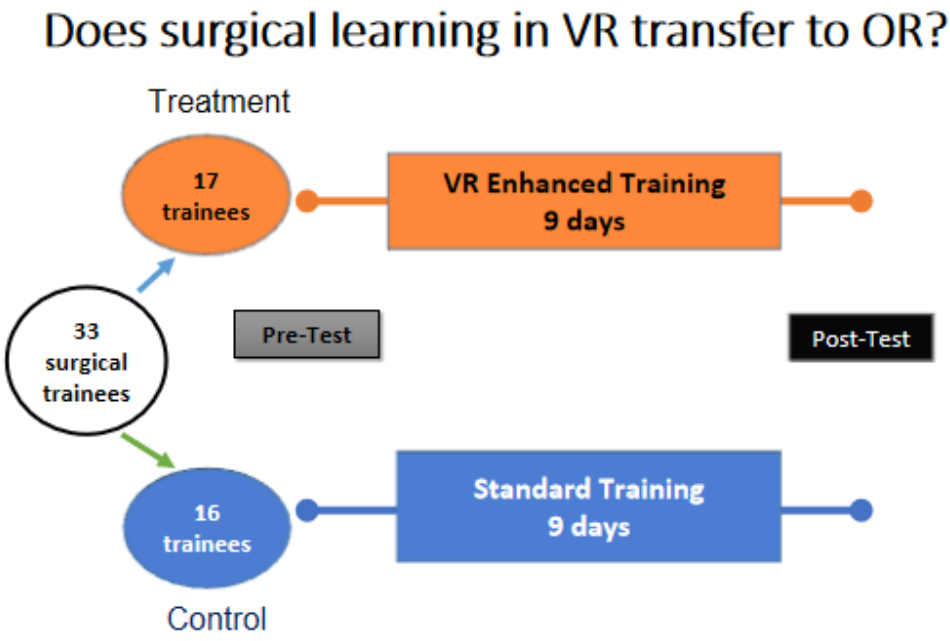
Variable	Movement Efficiency Estimate	Movement Efficiency SE	Time Efficiency Estimate	Time Efficiency SE
No. of simulations	0.31*	0.14	1.02*	0.08
Days between simulation sessions	−0.07	0.04	−0.68†	0.21
Sex				
Female	0.18	2.78	23.94*	6.69
Male	—	—	—	—
Experience				
Medical student	−13.67*	2.19	−38.50*	7.97
Resident/fellow	—	—	—	—
Age	−0.15	0.28	−2.97*	0.86
Years since college	−1.64‡	0.79	0.19	2.45
No. of simulations run × experience				
Medical student	0.05	0.07	1.31*	0.37
Resident/fellow	—	—	—	—

*$P < .001$.
†$P < .01$.
‡$P < .05$.

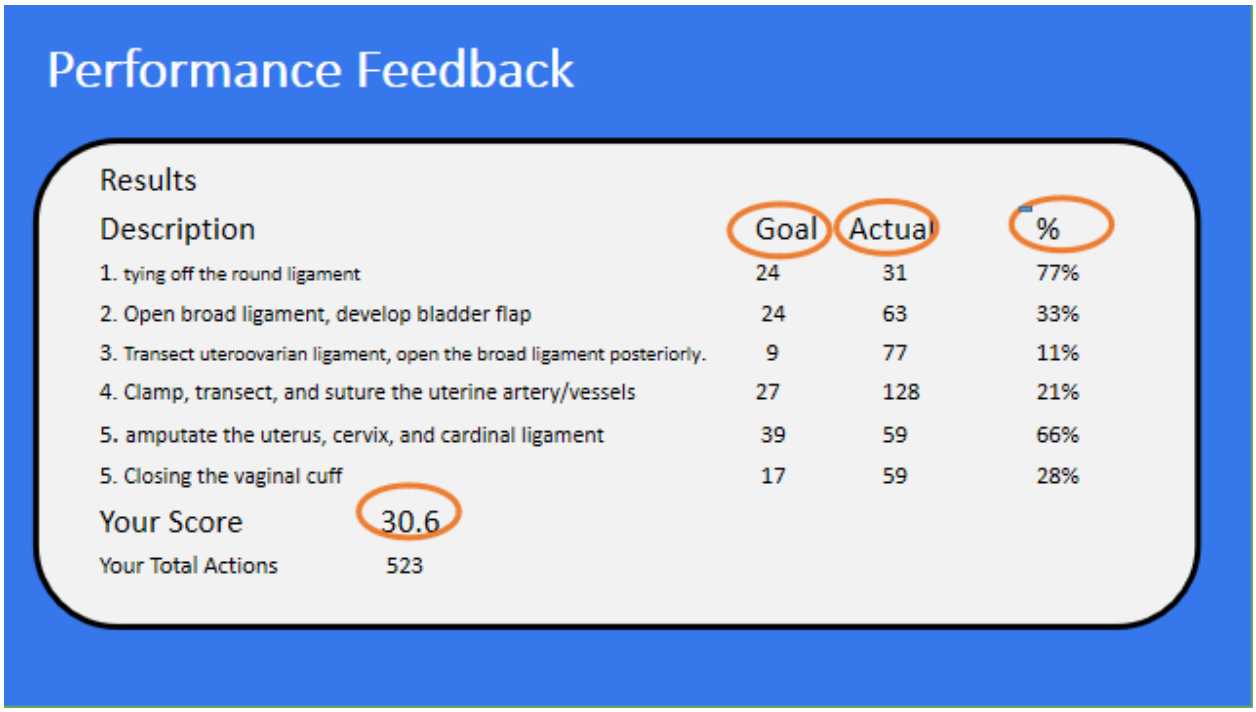
User experience with low-cost Virtual Reality in Zambia

- Zambian surgeons using VR to learn RAH.
- Believed that clear goals and internal motivation increased their success.
- Perceived VR training increased surgical knowledge and confidence.
- Perceived VR increased surgical skills.

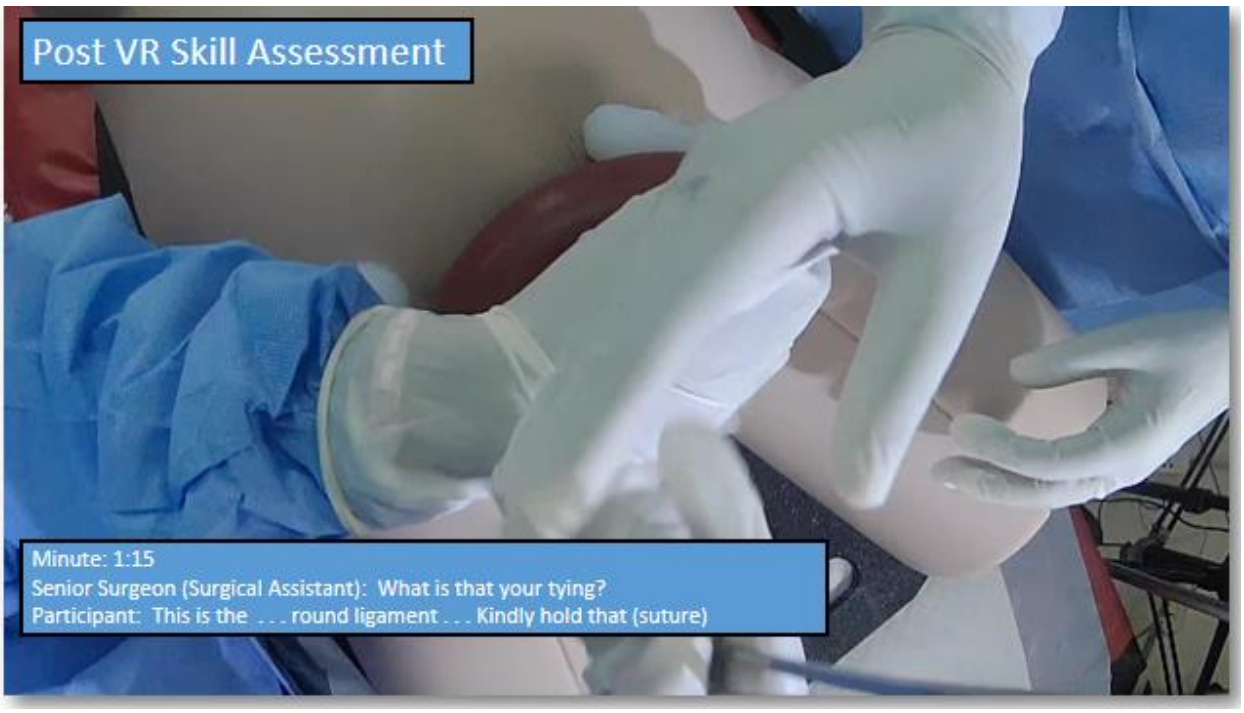
Richard Sullivan, King's College, London; Groesbeck Parham, University of Zambia, Anthony Cuevas, Southern Methodist University, Eric G. Bing, Southern Methodist University, funding Wellcome Trust



Performance Feedback




10/01/2021 15:55:01
Baseline Skill Assessment
Minute: 3:07
Senior Surgeon (Surgical Assistant): Can you say something?
Participant: I'm trying to just locate the round ligament . . . It's a bit challenging


Post VR Skill Assessment
Minute: 1:15
Senior Surgeon (Surgical Assistant): What is that your tying?
Participant: This is the . . . round ligament . . . Kindly hold that (suture)

Conclusion

- Deliberate Practice Virtual Reality surgical simulation may increase surgical skills and reduce time to train providers to perform surgical procedures.
- Low-costs VR can be effective in lower income countries.

Deliberate Practice Virtual Reality surgical simulation may be an effective means to scale-up training of providers in cancer-related surgeries regardless of setting.

DAY TWO BREAK OUT SESSIONS- A1

TRAINING AND EDUCATION

TOPIC: ONCOLOGY SPECIALISTS TRAINING IN EAST AFRICA: "WHERE ARE WE NOW KICC 2022."

SPEAKER: ANDREW ODHIAMBO FRCP, PHYSICIAN & MEDICAL ONCOLOGIST, PROGRAM DIRECTOR & LECTURER UON

Background

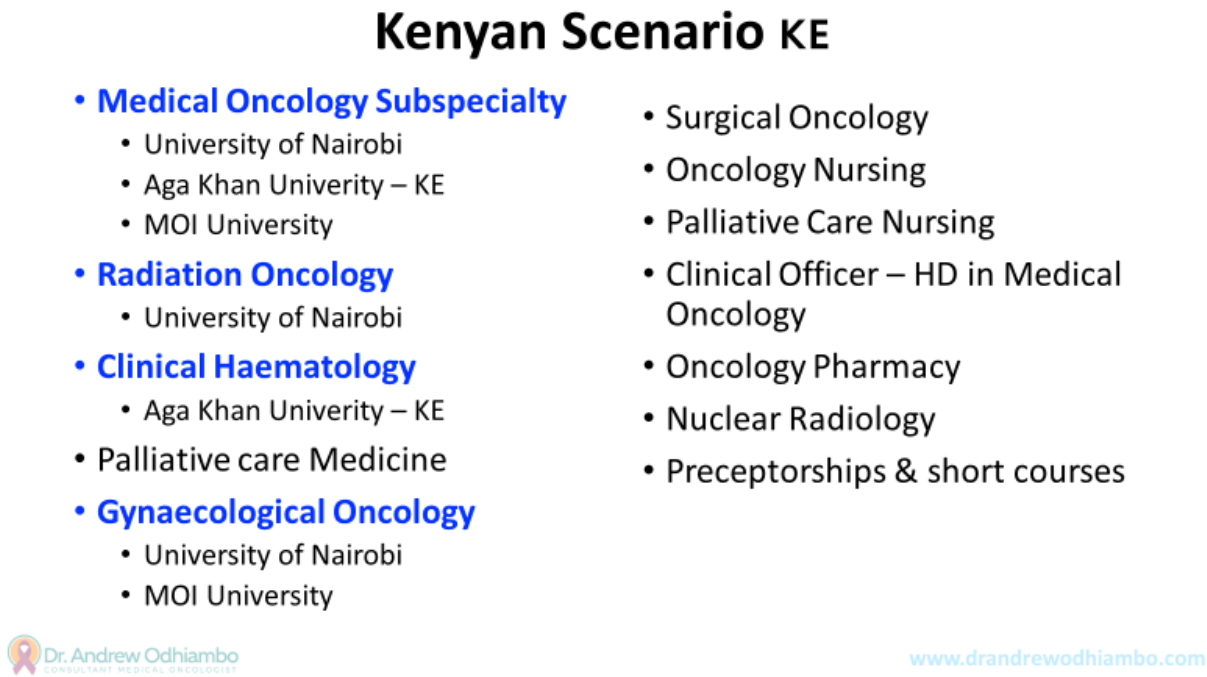
Dr Andrew Odhiambo informed delegates there is only one board certified oncologist for every 1.1 million Kenyans. He added that Each oncologist should see 900 patients per year, 18 per week and 3 per day. In his presentation Dr Odhiambo defined the specialist cadres in oncology as follows;

- **Medical Oncologist** – Internist/Physician – sub-specializes in Medical Oncology only
- **Clinical Oncologist** - General Prac - Specializes in both aspects of Radiation & Medical Oncology
- **Radiation Oncologist** - General Prac - Specializes in Radiation Oncology only
- **Haemato-Oncologist** - Internist/Physician or Haematologist – subspecializes in Clinical Haematology/Oncology
- **Paediatric Oncologist /Haemato-Oncologist** - Paediatrician sub-specializes in Paediatric Oncology/Haemato-Oncology
- **Gynecologic Oncology** – Gynecologist sub-specializes in Gynae cancer
- **Surgical Oncologist** – Surgeon/General Surgeon sub-specializes one of more key area

- Hepatobilliary
- Colorectal/GI
- Breast +/-Endocrine
- Thoracic
- Neuro – oncology
- Ortho/Sarcoma

He also explained the history of oncology studies in Kenya and the East Africa region.

"Medical oncology scholarship started at the University of Nairobi (UoN) in 2016. Nine fellows have graduated so far but noted that school fees, is a challenge with the current rates of USD 5000 a year, expensive. Aga Khan started a program in medical oncology in 2021, one fellow currently training. Radiation programme is ongoing at UoN - 30 are taking part and are almost graduating."



Oncology Pharmacy in Kenya

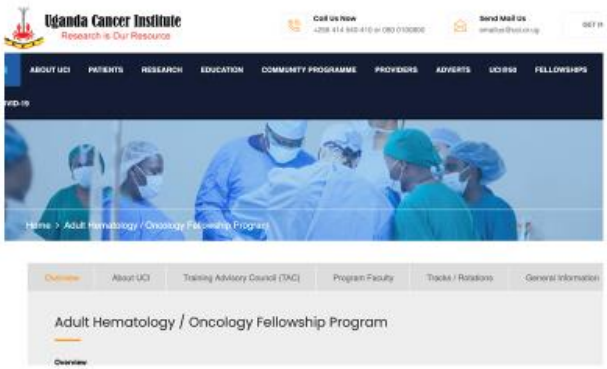
- **Clinicial Pharmacy - UON Bpharm the MMED – with Onco subspecialty – 3years**
- Kabarak in the pipeline
- 20 onco pharmacists

Surgical Oncology in Kenya

- No definate specialized program
- Housed in General Surgery
  - Upper GI/HPB/Colorectal/Endocrine
- Other stand alone surgical specialties
  - Urology
  - Thoracics
  - Neuro
  - Ortho
  - **Breast**
- Agenda needs to be tabled on how to implenent to improve surgical outcomes

Other EA Regional Training Programs

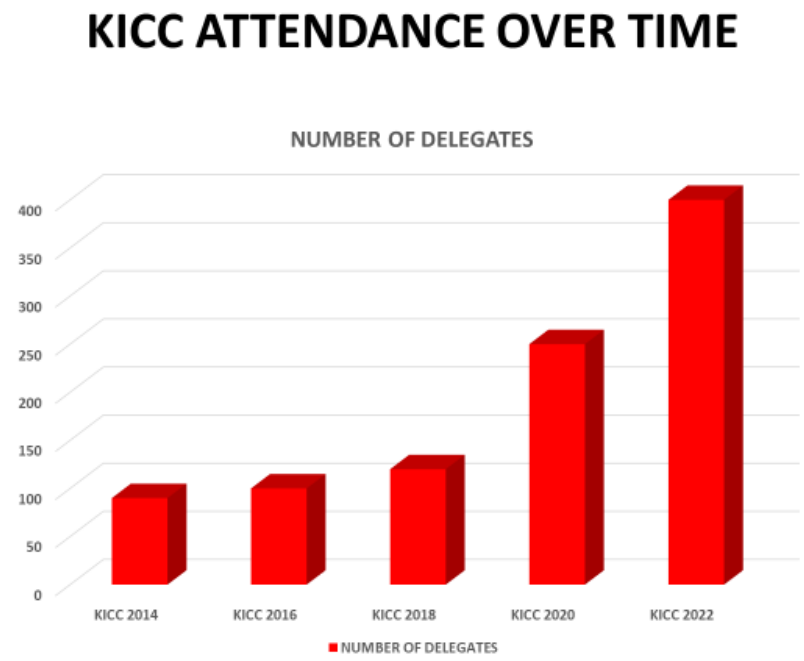
- **Uganda**
  - Clinical Haematology
  - Paeds Haemato-Oncology
    - **2 Kenyans**
  - Gyn – Oncology



MUHAS/Ocean Road - Tanzania

- **MMED – Clinical Oncology**
- **Twalib Ngoma****
- Support – Mayo Clinic/Naziq
- 2010
- Over 70 from all over Africa
- 3yr Program
- Fees – 5000 USD/yr
- Dissertation
- **15 kenyans trained**

Dr. Odhiambo noted the attendance of Kenya International Cancer Conference had steadily increased over the years from less than 100 in 2014 to more than 400 in 2022.



In his concluding remarks Dr Odhiambo said, "We have demonstrated we have the capacity to offer quality training, we need to do more especially in palliative care, sustainability, mentorship, standardization and licensing. There is a big gap in palliative care training in all cadres of medicine. There are only five fully trained palliative care physicians in the country and they cannot handle the cases. We hope training opportunities for the same are going to increase locally."

TOPIC: ADDRESSING SCD KNOWLEDGE GAP AMONG HEALTHCARE PROVIDERS IN WESTERN KENYA THROUGH A CRASH TRAINING: A CASE OF AMPATH SCD PROGRAM

SPEAKER: JOSEPH KIPKOECH

Background

Sickle cell disease (SCD) is an inherited, multi-system, chronic disease with the highest prevalence affecting people of Sub-Saharan African descent. WHO SCD strategy, recommends training of Health Care Workers

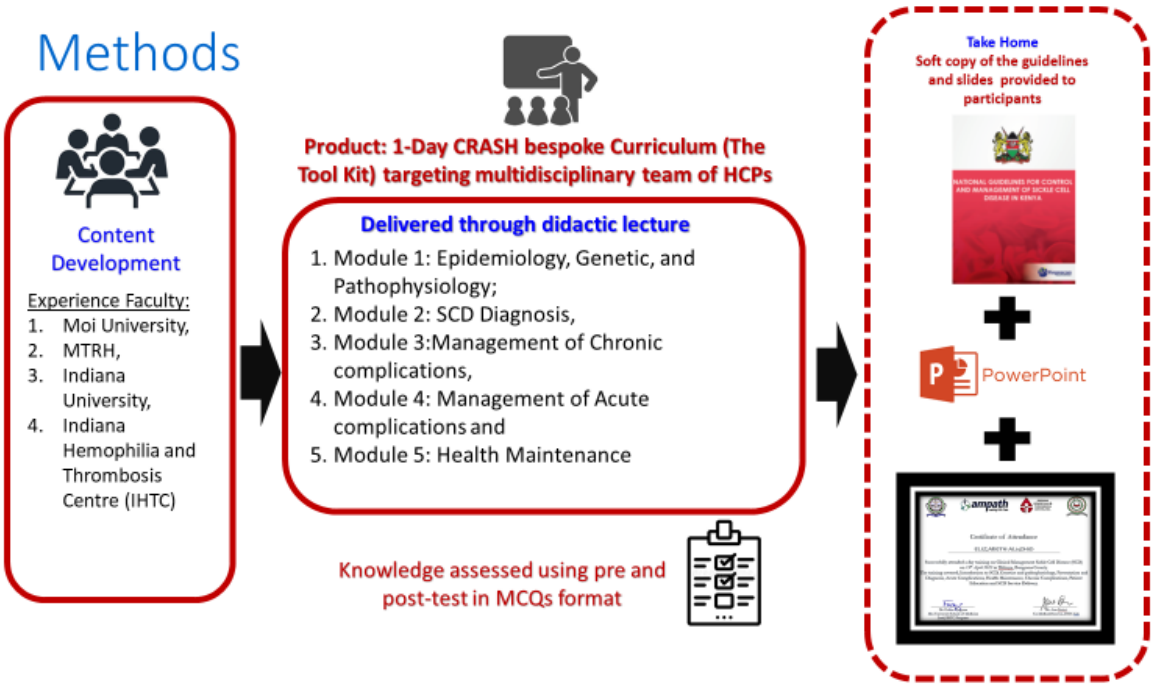
(HCWs)and the development of the clinical protocol. In Kenya, there is a national shortage of SCD-trained haematologists. Primary care providers need to be equipped with basic knowledge to care for patients with SCD. Dr. Joseph Kipkoech shared approaches used by AMPATH SCD Program in developing and delivering SCD training targeting primary care providers. The one-day training was held between April and June, 2022. Approach meant to deliver training in the shortest time possible as health facilities are being prepared for various sickle cell interventions which include critical care and laboratory testing.

Methodology

Content development team was drawn from a pool of faculty members at Moi University School of Medicine, Moi Teaching and Referral Hospital, Indiana haemophilia and Thrombosis Centre, Indiana University (USA).

One day training tool kit developed and divided in several modules which were delivered in a structured way.

Knowledge assessed using MCQs and ensured participants received national guidelines for management of sickle cell disease, PowerPoint presentations and certificates.



Findings

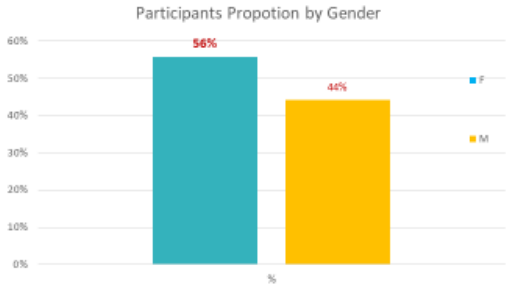
Cascading national guidelines by developing short protocols that can be used at the point of care by clinicians

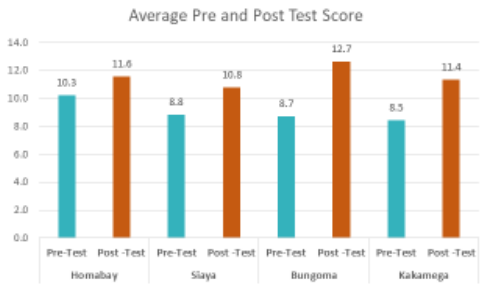
219 healthcare providers trained from Homa Bay, Siaya, Busia and Trans Nzoia counties.

More trainees comprised are from lakeside regions and Bungoma area where sickle cell disease is common.

Majority of trainees comprised of nurses, clinical officers, doctors, laboratory technologists, health records officers, physiotherapists and pharmacists.

Results





- Most participants were female
- We recorded a positive knowledge gain across all the trainings.

Conclusion and recommendations

- SCD care crash course is feasible in limited resource settings.
- Crash course provides a perfect opportunity for the dissemination of national SCD guidelines.

TOPIC: DEVELOPMENT OF A STANDARDIZED CANCER CURRICULUM FOR COMMUNITY HEALTH VOLUNTEERS

SPEAKER: DR. JOAN-PAULA BOR-MALENYA. NATIONAL CANCER CONTROL PROGRAM

Background

Cancer is a leading cause of death in Kenya. Late diagnosis is a major challenge, related to low translation of knowledge into action for uptake of cancer screening and early diagnosis services among communities. Community Health Volunteers (CHVs) have been integral to the success of various health programs and in Primary Health Care, the instrument for attaining Universal Health Coverage. The National Cancer Control Program (NCCP) thus developed a standardized CHV training curriculum to equip CHVs with comprehensive cancer information and advocacy skills, so that they can mobilize the populace for improved demand for cancer early detection services**.**

Dr Joan-Paula Bor-Malenya from the National cancer control program who conducted the study acknowledged *"Late diagnosis in cancer care is a big problem. The Division of Community Health has manuals for all diseases including cancer but it is condensed There is a gap in translating knowledge into action."*

Methodology

- Activity done between May and August 2021
- The National Cancer Prevention, Screening and Early Diagnosis Technical Working Group led the entire process.
- Multi-disciplinary team of experts convened to develop the curriculum, including:
    - MOH NCCP
    - MOH Division of Community Health

    - NCI-Kenya
    - Civil society
    - Development agencies
    - Professional societies
    - Academia
- Curriculum development expert engaged to provide technical guidance
- Financial support was provided by USAID/PEPFAR
- Due to the COVID-19 pandemic restrictions, the team worked innovatively through virtual meetings
- Desk review done on available training materials
- Identified priority cancers, agreed on the scope of the content, based on available time & budget, and formulated the content.
- Pre-tested initial draft in two counties then
- Refined draft for validation and endorsement by relevant stakeholders
- Finally printing and dissemination

Findings

- The standardized curriculum comprises of 2 units:
    1. Cancer (general)
    2. Cervical cancer
- Both facilitator & participant manuals developed

Each Unit has six lessons focusing on:

1) Definition, Burden and Impact
2) Prevention
3) Screening and Early Diagnosis
4) Management
5) Supporting Survivors
6) CHV Roles and Responsibilities & Action Planning

Each lesson has specific interactive activities, designed for the CHV to internalize the information and gain relevant skills

Conclusions/recommendations

- The comprehensive CHV curriculum will enable CHVs to:
  - Educate their communities on cancer
  - Conduct community referrals
  - Mobilize the community to access services and
  - Support cancer survivors & families
- 300 CHVs in 10 counties trained so far
- Resources are needed to roll out trainings so as to realize full impact

KCL SPONSORED SESSION

TOPIC: RESEARCH FINDINGS OF A COMPREHENSIVE ANALYSIS OF CANCER RESEARCH OUTPUTS IN AFRICA- WHAT DOES THIS MEAN FOR KENYA?

PANELISTS: MIRIAM MUTEBI, NICHOLAS ABINYA, PROF. RICHARD SULLIVAN, JULIE TORODE, VERNA VAN VANDERPUYE, ANN KORIR, ALFRED KARAGU

Background

Research is a critical pillar in national cancer control planning and for improving affordable, equitable outcomes. The status of African cancer research has been the subject of extensive discourse but metrics to benchmark performance across our continent are not available.

Authors of the 2022 Lancet Oncology Commission on Cancer Control in Sub-Saharan Africa noted**:**

"the dearth of evidence-based policies and data to help build a new cancer research ecosystem across the continent"

"prioritisation of research needs and goals can be accomplished through stakeholder-based needs assessment alongside data-driven evidence"

According to the panellists, the study provides;

- Much needed in-depth performance metrics which are context-specific
- A baseline for national, regional cancer research systems strengthening

Enables benchmarking between African countries and to other regions of the world

Rapid report of the bibliometric methodology of this research- Prof. Richard Sullivan MD

Methods – comparative bibliometric analysis

Our aim: national level cancer research trends, portfolio balance, focus, strengths and opportunities for underpinning African research strategies

All African countries, with a specific emphasis on Sub-Saharan Africa

1. Deliberative co-production and needs assessment with stakeholders

- Open call to participate (Sep 2021)
- Six iterative rounds of consultation and consensus meetings (Dec 2021 – April 2022)
- Contributors invited to co-author

2. Bibliometric analysis – 12 years, 2009 - 2020

- 12 Research domains, anatomical sites
- Determined research levels from basic (RL 1.0) to clinical (RL 4.0)
- Impact & influence of African countries research outputs using *mean journal impact factor*
- Sources of acknowledged financing in country groupings and ranked
- Authorship position, sex of African authors

Outputs

We identified 23 679 cancer research papers over the 12 years

- Cancer accounted for 7.9% of all African biomedical research
- See an increase 6.5% (2009-2010) to 8.6% (2019-2020)
- Total numbers of papers increased rapidly with time AAPG rate of 15% vs world average of 7.8%

On a fractional count basis, contribution from African authors 16 201 papers

- 5 North African countries contributed 10 920 (67%) of papers
- Egypt published the most 7781 (48%) of all African output

The 49 SSA-countries contributed 2206 (14%) of all Africa papers

Nigeria had largest output 997 (6%) of all Africa papers (19% of all SSA papers)

Summary

- Most African countries have a dynamic & growing cancer research base with significant annual growth rates in national outputs (SSA range 13-44%)
- There is a general correlation with GDP and disease burden (% all DALYs)
- And countries health expenditure with some outliers
- Significant differences between North African countries and between Sub-Saharan African countries

e.g. Egypt and Morocco publish x3 more cancer research relative to biomedical research than Algeria

South Africa and Nigeria similarly aligned, followed by a group of countries at similar dev. stage, including Kenya, with major opportunities for expansion

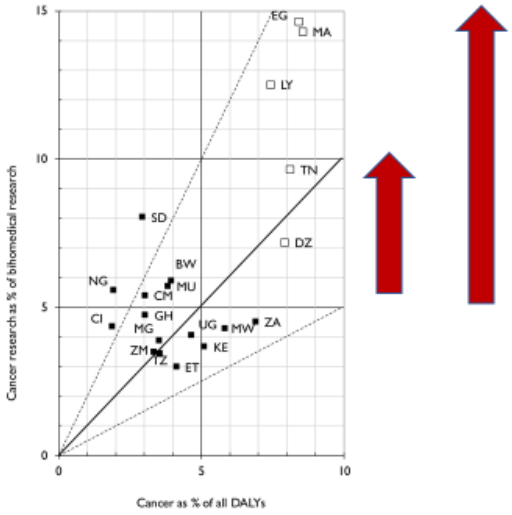
Summary of the key findings: some anticipated, some surprises- Miriam Mutebi MD

"Research locally is dominated by basic research on infectious diseases. Oncology outputs are increasing but definitely much lower than infectious ones. It is not really a funding issue but a dissemination issue as well. How do we move the needle in terms of gets us to the border line beyond infectious diseases research."

As we review the key findings – consider what actions can we take:

i) To shift all countries to bold line – investments in research in-line with cancer burden

ii) To boost investments in research at least to achieve parity with infectious disease



Miriam Mutebi et al. BMJ Glob Health 2022;7:e009849

Key findings

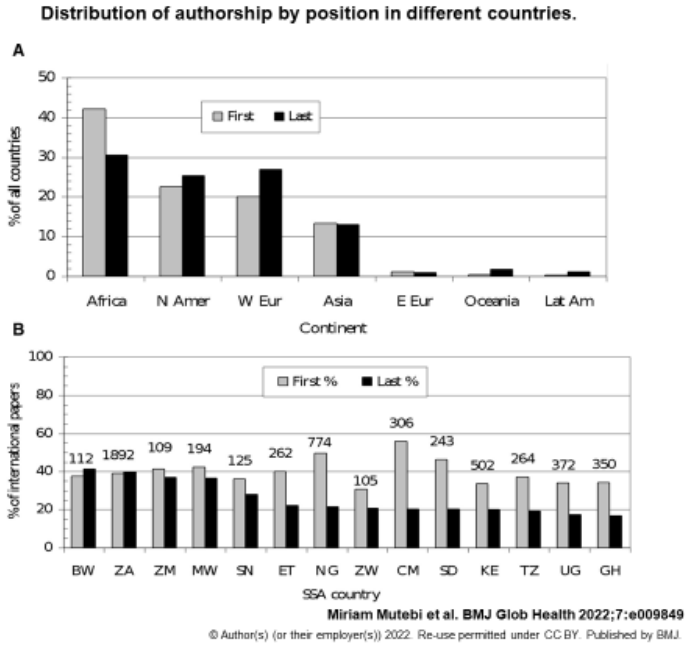
- International collaboration
- Indicators of influence or impact
- Research per anatomical site and research domain
- Sex (or gender) balance in African research
- Funding

International collaboration in African research

- Kenya and Uganda had 6x more internationally authored papers than purely national ones
- Some African collaborations, but mostly Asia, Western Europe and North America

- Francophone North African countries – very little international collaboration, if, then France (MA, TN, DZ)
- Egypt and Sudan collaborations with Saudi Arabia

Nigeria preferred collaboration with Malaysia



Highlights

- North African countries have higher outputs, impact is relatively low
- Three francophone rank lower than all of the top SSA countries
- Research level (a measure of basic thro to clinical) did not shift over the 12 years (average 1.95)
- Research level varied widely by country for both domestic and international papers
- For all of the 17 countries, international papers are more basic than domestic papers (marginal in SA and ZA)

Implications for African research and researchers- Verna Vanderpuye

Key points – where are we going wrong/right

- Africa is a large continent, but our cancer research output contributes only 1.3% to the global knowledge base vs. 2.9% of GDP
- Reflecting an under-investment in science and technology and at 1.1% of the total, a gap in contribution to health research and development expenditure

Challenges:

- Equity - Just 13 of 54 African countries were responsible for approx. 90% of total cancer research
- Priorities - research outputs that are proportionally low relative to their burden across Africa are paediatric, cervical, oesophageal, prostate cancer and
- African research mirrored that of Western countries, too much discovery science and pharmaceutical research.

Good progress:

- The percentages of female researchers in Africa were comparable with, if not better than those elsewhere.

How this study might affect research, practice and policy

It underscores that research insights must inform national cancer control strategies across Africa

Africa must bring impetus to international policy and support for strengthening research capacity and capability

Countries must exhibit autonomy through budgetary allocations for relevant cancer research to their communities

Expected outputs

- Oncology research is underrepresented in terms of the total current investment in biomedical research

➢ Pressing for parity here could provide opportunities for innovation to solve urgent African problems

- Domestic cancer research funding is well below where it should be.

➢ Signifying focus and commitment is key to promoting cancer research

Recommendation

- Closing gap of authorship and peer-peer collaborations - show we have the power to negotiate terms of reference, but … this also has implications on setting the right research agenda and addressing our lack of authorship rules and autonomy

- We can, through e.g. AORTIC, nurture south-south collaborations within Africa and sub-regions to foster continental research skills and promote greater equity

- Develop linkages through the African Union to promote collaborative research across high output regions

- We must look at strengthening reward systems for scientists impacting the national health agenda through research

Reflections

Q. There was a gap what do you think that was?

"Cancer research still limited. When it comes to patient outcome research, I agree we have not done enough. We need to invest more. All of us have a responsibility to do that, set aside time for research, the pathways, survival. We need to follow up patients over time. Documentation is important to follow up patients properly." - Ann Korir-KEMRI

Q. How would you like to see KESHO treat cancer?

"KESHO is taking cancer research very seriously. We started talking about KESHO clinical trials unfortunately the proposals didn't see any funds. NACOSTI had funding and caveat was it had to be a female peer. You send to journals and they ask who funded which sometimes hinders submission they think you have stolen or cooked data. But we are doing our best to do research locally."- Prof. Nicholas Abinya

Q. How do you generate new knowledge in a manner that is supported?

"*We don't document and disseminate our results. KESHO has been looking at collaborative ways of pooling resources and what opportunities are available. How do we build fundamentals? How do we get KESHO to a level where we support young researchers?" Prof. Nicholas Abinya*

Q. What kind of data do we need to show collaboration in Africa?

"Explore if there is a possibility of getting a peer to bring in resources and you do the work. Need to onboard students Masters or PHD to contribute to research by doing papers. Research is business. You want to make sure you attract more customers to your area so prepare your environment to attract interest from others."- Joseph Kipkoech

"How well are we integrating multi-disciplinary approaches? How well are we translating research back to communities for better impact?"

"Intergrading research, training development is key, we need strong academic mindsets among the young, they need to be roped in so that they can bring the needed change."

"Interest from pharmaceuticals cannot be called data mining. We have done work of mutual interest with pharmaceuticals."-Prof. Nicholas Abinya

"We need more implementation research to back up real life experiences. We need international collaborators but we have to call the tune. Training in research is limited and it needs to be improved."-Verna Vanderpuye

RADIATION OCOLOGY 1

TOPIC: ADVANCING CANCER CARE IN AFRICA AND THE ROLE OF IAEA

SPEAKER: MAY ABDEL-WAHAB, MD, PhD

Background

Dr. May Abdel-Wahab who joined the conference remotely, took delegates through the road map to advancing cancer care in Africa. She explained the importance of equipment how that the IAEA supports in various ways including education, training, guidance, research, safety and set up of equipment. There are also opportunities for guidance and publications downloadable form the websites.

Intervention

She highlighted new initiative Wins-Rays of Hope launched at African Union Summit. It supports access through technical management, capacity building, sustainability and innovation (treatment and education).

Dr. Abdel-Wahab also gave a general overview of the research programme at IAEA. There have been 103 coordinated research projects in 25 countries since 2000 with various types of contracts, various types of studies including clinical trials, patterns of care, education and intervention nutrition studies, nuclear medicine and oncology.

IAEA can address challenges through assessment of needs, research opportunities, education and training through support of radiation safety and supporting access.

Call to action

- Designing healthcare systems, annual universal health coverage, improving data acquisition, national cancer registries. *"So here it is done through other UN agency and groups and we work on local projects together with them. There are also resolutions in support of radiotherapy and technology access."*
- Decrease in late presentation for treatment and provision of appropriate treatment, equal access of opioids for cancer patients.
- Oncology training programme, oncology research, increasing health professionals, workforce training

Conclusion

Collaboration is the only way forward.

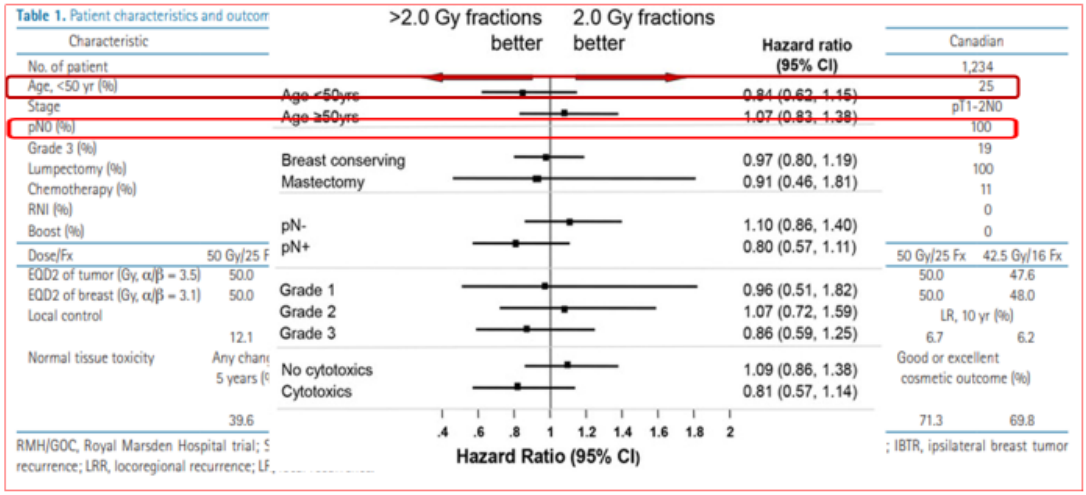
TOPIC: LOCAL CONTROL IN HYPOFRACTIONATED VERSUS CONVENTIONAL RADIOTHERAPY SCHEDULES AFTER BREAST-CONSERVATIVE SURGEY AMONG YOUNG EGYPTIAN BREAST CANCER PATIENTS

SPEAKER: ABEID M. ATHMAN OMAR, MD. MSC. CONSULTANT CLINICAL ONCOLOGIST

Background

Breast Cancer is the most commonly diagnosed malignancy worldwide. It is also the leading cancer in women in most parts of the world. Unlike in the Western world, breast cancer in Sub- Saharan Africa occurs at a much younger age between 35 – 50 years. Early Breast Cancer is managed by multi approach: surgery, radiotherapy (RT), and systemic treatment. Dr. Omar took participants through the Landmark and Fast Forward trials.

Landmark Trials of Hypofractionation RT



Kim 2016, ROJ

Aim and Methodology

ENDPOINTS:

- Locoregional control Rate
- Disease Free Survival

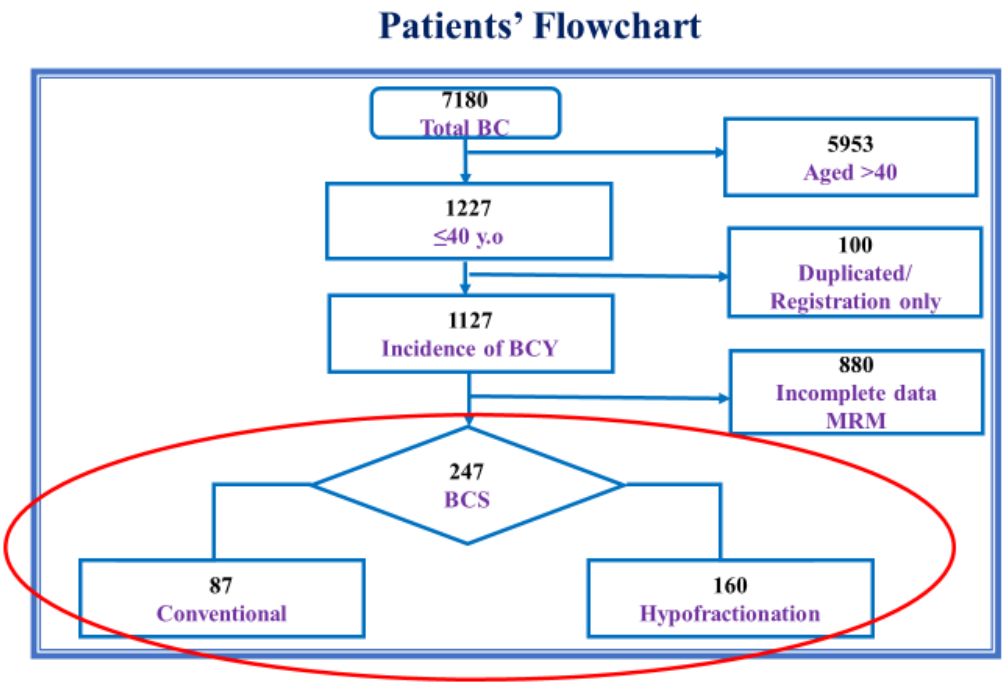
Inclusion Criteria

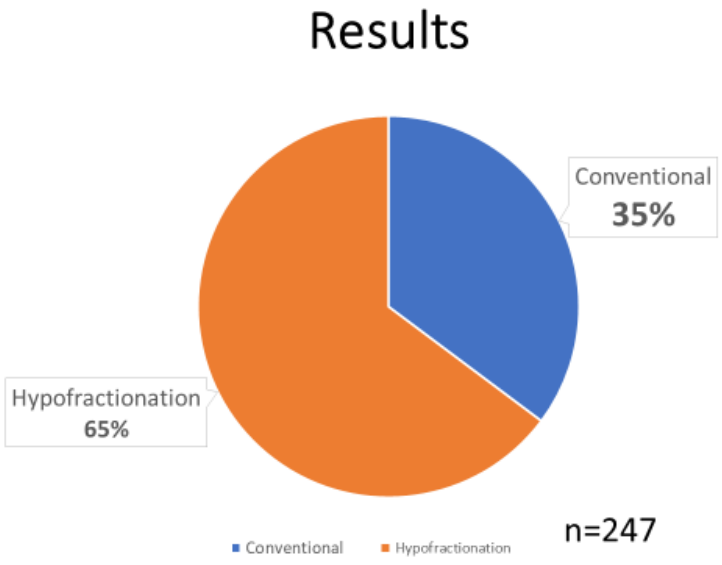
- We analyzed data from two centers in Alexandria, Egypt
- Young women aged 18-40 years
- Diagnosed in 2008 to 2017
- Underwent BCS

Exclusion Criteria

- Underwent MRM

- Incomplete data





Treatment

	Conventional n (%)	Hypofractionation n (%)
Chemo type		
AC/ FAC	39(49)	88 (56)
AC - T	40 (49)	67 (43)
Chemo timing		
Neoadjuvant Only	6 (7)	12 (8)
Adjuvant Only	73 (89)	139 (89)
Both	3 (4)	6 (4)
Radiotherapy dose	50Gy	40.5 – 42.5Gy
Number of fractions	25	15 - 16

Conclusion

- Among young patients, HFRT was not inferior to CFRT
- There was a trend of better locoregional control in HFRT vs CFRT
- In view of few LINACS and more number of patients in SSA, HFRT should be adopted as the SoC even among young patients in our local set up

TOPIC: EXPERT DISCUSSION: IS HYPOFRACTIONATED RADIATION THERAPY STANDARD FOR ALL?

SPEAKER: DR. CATHERINE NYONGESA - RADIATION ONCOLOGIST

Dr, Catherine Nyongesa informed delegates of the benefits of hypofractionated radiation therapy. She cited reduced costs, increased convenience, travel and lodging, increased treatment compliance, acceptance of therapy, improved access to care.

"Hypofractionation has its own radiobiological advantages number one is increased dose per fraction, this increases the tumour kill. There are certain

disadvantages, one is late normal tissue toxicity and we are not sure whether the hypofractionation is biologically equivalent to conventional fractionation."

Dr Nyongesa shared a retrospective review of some patients treated at KNH on routine follow -up. The average age was 48 years while the sample range was 29-71 years.

Findings

Stage two patients were 35%, stage three 58% the others were a bit advanced and 3% were unstaged.

74% treated on cobalt 60 and 17 were treated on linear accelerator.

Follow up was an average of 44 months.

Locoregional 6.3%, 8.5% lost to follow up, 75 % are well with no local recurrence and coming for follow up.

Conclusion

It is safe to offer hypofractionated radio therapy for patients with early breast cancer and locally advanced breast cancer.

It offers both local control and acceptable cosmetic outcomes

It is a feasible option even in centres without a linear accelerator. (It is applicable to all patient groups).

Dr Nyongesa concluded with a question "Is this the new standard of care? She argues it is a reasonable option but more research is needed.

TOPIC: POST EXCISION KELOID TREATMENT USING RADIOTHERAPY.

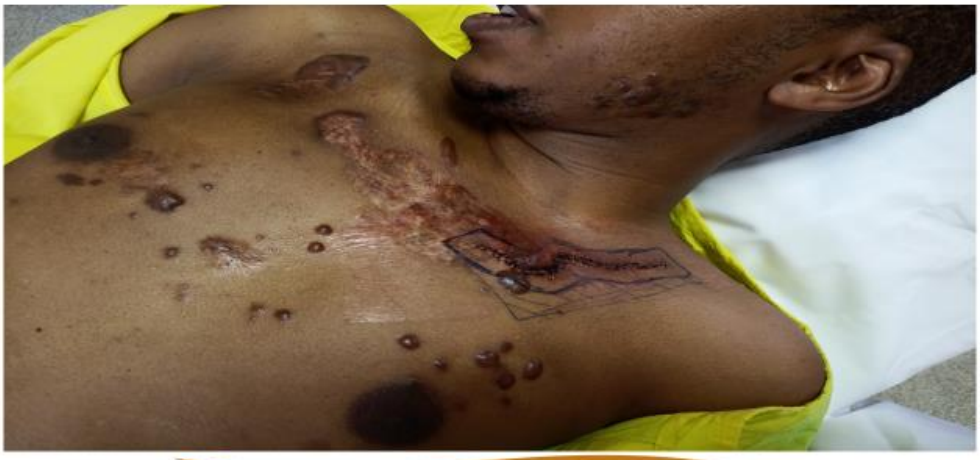
WAKARIMA WERU-RADIOLOGIST, THE NAIROBI HOPSITAL

Background

Studies have shown that keloids are more prevalent in skin with high pigmentation. Africa has some of the highest cases of Keloid formations. There are several ways of preventing keloid formation after keloid excision but one of the most effective scientifically proven ways is to administer superficial radiotherapy to the scar with a slight margin. Superficial radiotherapy can either be administered using an Orthovoltage machine that uses Kilovoltage (KV) to treat the scar or can be treated using electrons generated by a linear accelerator. Radiotherapy following surgical excision of a keloid prevents the reformation of scar tissue. Surgery alone has been shown to have recurrence in more than 80%of cases.

THE NAIROBI HOSPITAL

Patient with heavy genetic link to keloids retreated on 15/02/2017 Repeat tx on 16/03/2021 on 09/11/2022



Wakarima Weru a radiologist at the Nairobi Hospital shared her insights on the condition and its treatment. She illustrated the procedure of administering superficial radiotherapy clarifying that risk of radiation induced carcinogenesis has since been discarded by many studies. *"When we are treating keloids, it is important for us to manage our patient's expectations. Because sometimes they need to understand that there will still be some scar even after treatment."*

Procedure

- Dose, fractions and interval are the factors that will decrease the rate of recurrence and increase the level of satisfaction.
- Application of a tissue equivalent bolus is paramount to maximize skin dose.
- Skin care instructions have to be clearly explained to the patient at TNH we give the patient a pamphlet with information.
- Follow up one month after radiotherapy is mandatory to be able to properly manage any side effects and to begin to evaluate the effect of treatment**.**

Treatment

- Originally: First time presentation: 8Gy or 10 Gy, SS, 1 cm margin all around.
- 30 patients evaluated found 5 pts who were low risk pts, no genetic link recurred.
- Repeat treatment 15Gy in 3#'s, alternating days.

"The most important thing when we are giving our radiotherapy, I the dose that we give. The fractionations whether it's going to be one or several fractions and the intervals between these fractions. Those are the determining factors that will give us a good rate of low recurrence and increase the level of satisfaction in our patients and doctors as well."

Alternatives

- Some studies show that an initial dose of 6Gy in 3# given on three consecutive days to be just as efficient with an even lower rate of recurrence (BeD 30Gy).(4)

New studies looking into the effect of plasma skin regeneration (PSR) and cryotherapy as a possible treatment are still underway.

Conclusion

- The combination therapy of Superficial Radiotherapy post-surgical excision has been proven to be safe and feasible.
- Doses need to be adjusted for children to reduce chances of radiation induced carcinogenesis.
- The higher dose of 12Gy/# SS has proven to be superior to the previous dose of 8Gy- 10Gy in reducing recurrence in low risk patients.
- In the case of a recurrence, a dose of 15Gy given in 3 #'s on alternating days has proven to be sufficient.
- Follow-up 1 month after treatment is paramount.

TOPIC: RADIOTHERAPY IN SSA: WHERE ARE WE NOW?

DR. VERNA VANDERPUYE - MBCHB FWACS CONSULTANT ONCOLOGIST -KORLE BU TEACHING HOSPITAL- GHANA

Background

Dr. Verna Vanderpuye's presentation focused on the availability of radiotherapy services in sub-Saharan Africa. She began by appreciating the role of radio therapy in treatment of cancer the challenges notwithstanding. *"Radiation is a vital component of cancer care. It is highly cost effective. But, a lot of infrastructure is needed. With early detection and screening we are seeing early cancers. The quality of radiotherapy is important. When you see a patient, you should be able to know what treatment is ideal. However, it is important to note more is not better."* She reiterated. Most in Africa belong to the low middle- and low-income countries. Majority don't

have radiotherapy centres. Commenting on the current status in availability of technology and equipment for low- and middle-income countries Dr. Vernderpuye said a number of factors are at play. *"We need a lot of things to come together to improve radiotherapy services in low to middle income countries. The regulatory authority has to be in place, regulation safety, national control plan that depends on, capacity building, future needs, cancer registry, affordable fees among others."*

She analyzed the situation in the Caribbean and specifically Haiti which has no radiotherapy equipment at all meaning there is no equity in access. Dr. Vanderpuye then compared it to a tiny island Newfoundland and Labrador in Canada which is considered high income which has a two-phase establishment a tertiary unit and satellite radiotherapy centre. She lauded Kenya for expanding access to radiotherapy services by equipping the available centres with simple machines.

She observed that it is not about buying machines but also management of the same. She cited innovation, cost of maintenance, licensing costs, insufficient advocacy among others as the gaps in global adaptation of universal healthcare.

Opportunities and recommendations

- Increased formulation of cancer control plans worldwide including low to middle income and uptake as well. Countries should leverage on this to make sure they have radiotherapy centres and expansion plans in place
- Effective dialogue, south to south collaborations, sharing of values and data to promote cancer treatment
- Have bespoke models and realistic resources for expansion
- Develop regions of excellence that will strengthen and expand local training centres

- Harness COVID-19 silver linings like virtue training to learn hypofractionation, triage patients
- Innovate and redesign use of existing equipment
- Collaborate with peers outside Africa to do research, and benchmarking
- Proper adoption of universal healthcare

TOPIC: 6MV VS 10MV PHOTON ENERGIES IN CERVICAL CANCER RADIOTHERAPY PLANNING & TREATMENT

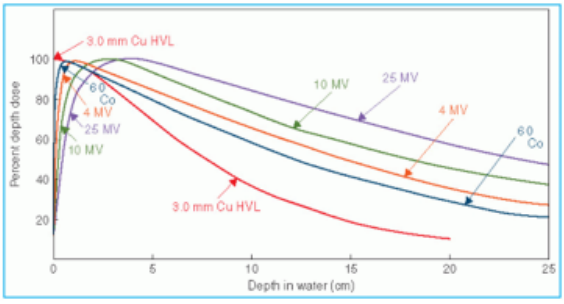
SPEAKER: DR. CHIMWEMWE M.K. BANDA, MALAWI NATIONAL CANCER CENTRE. FORMERLY UNIVERSITY OF ZIMBABWE FACULTY OF HEALTH SCIENCES

Radiotherapy efficacy depends on among other things ability to deliver optimal dose to target volume and sparing normal tissue. Photon energy determines penetrative power. Different techniques, including 3-dimensional conformal radiotherapy (3DCRT) are used to deliver the dose. For 3DCRT, higher photon energies are generally preferred over low photon energies when treating deep tumours

Methodology

Photon energy Penetrative Power

Photon Beam Quality



D-Max & PDD Comparison

Energy(MV)	Field Size (cm^2)	Depth Dose D_{max}(mm)	Dose at 10cm depth D_{10} (%)
6	10 X10	15.99	66.87
10	10 X 10	24.71	74.01

Methodology

- Retrospective analysis of medical records for LACC patients between 1st January 2017 and 31st December 2018.
- Patient's treatment plans stratified into two arms (10MV and 6MV)
- The respective dosimetric and clinical tumour outcomes at three months post-treatment were compared
- Categorical variables summarised using frequency and percentages.
- Continuous data: means and standard deviation or median and range
- Chi-square test - determine association between categorical dependent and independent variables
- T-test - between categorical dependent and continuous independent variables.
- All decisions concluded at 5% level of significance

Findings

- 875 cervical cancer patients were seen during the study period
- 82 met the inclusion criteria and were evaluated, 20(24.4%) and 62(75.6%) were planned and/or treated with 10MV and 6MV photon energy respectively
- Complete clinical tumour response at 3 months post treatment was 95% in the 10 MV arm compared to 91% in the 6 MV arm
- The differences in studied planning parameters are summarised in table

Results:
Treatment Planning Parameters and Energies

Parameter	6MV		10MV		P-Value
	Mean	SD	Mean	SD	6MV vs 10 MV
Minimum Dose Planning Target Volume (PTV)(Gy)	34.36	7.4	39.86	4.5	0.027
Maximum Dose PTV(Gy)	48.27	0.63	48.15	0.65	0.245
Average Dose PTV(Gy)	45.76	1.96	46.00	0.49	0.309
Conformity Index	4.07	2.39	3.33	1.03	0.130
Homogeneity Index	1.40	0.40	1.22	0.16	0.028
Max Dose Rectum	49.0	2.12	47.25	0.87	0.19
Max Dose Bladder	47.86	2.06	48.0	0.86	0.35
Max Dose Femoral Head	46.62	2.5	46.65	0.82	0.42
Max Dose Intestine	40.17	7.9	42.11	6.06	0.16

Conclusion & recommendation

- The dosimetric and clinical tumour outcomes in Ca Cervix patients receiving 3DCRT definitive CCRT using 10MV or 6MV photon energy are comparable
- 6MV can successfully be used where 10MV is not available

  Buy higher energy >10MV if you already have a 6MV?

- Follow-up prospective studies

TOPIC: BRACHYTHERAPY IN OESOPHAGEAL CANCER: DEFINING ITS ROLE AND INTRODUCING THE TECHNIQUE

SPEAKER: DR. CATHERINE NYONGESA -RADIATION ONCOLOGIST KENYATTA NATIONAL HOSPITAL

Background

In her study on use of Brachytherapy in oesophageal cancer patients Dr. Catherine Nyongesa established that optimal management for palliation of dysphagia in patients with non-curable oesophageal cancer remains a challenge. Stent placement and radiotherapy are the two most commonly used treatment modalities and that EBRT is superior over single-dose BT.

EBRT combined with BT Two RCT

- compared BT *vs*. BT combined with EBRT.
- One RCT, including a limited number of patients (n=59) reported no significant differences in dysphagia scores, survival or adverse events.

EBRT combined with BT

- The other RCT (n=219) showed improved long-term dysphagia scores in the combination therapy group (83% *vs*. 67%, P<0.05) .
- A retrospective study dysphagia free survival scores of EBRT alone were comparable to combination therapy of EBRT and BT,suggesting that adding BT to EBRT did not affect outcome in this study.

EBRT *vs*. BT

- A retrospective cohort study comparing EBRT *vs*. single-dose BT showed no significant difference in dysphagia scores or adverse events between both groups (4)

- Multicenter non-randomized cohort study comparing EBRT *vs*. single-dose BT demonstrated that EBRT was superior in relieving dysphagia (83% *vs*. 64%, P<0.05) (5). Survival rates were not different between both groups. Severe toxicity was more frequently seen in the BT group than the EBRT group (13% *vs*. 3%, P value not reported

Stent placement *vs*. BT Two RCTs

- One study clearly showed improved long-term dysphagia relief in the BT group compared to stent placement .

- Dysphagia in the stent group caused by stent migration, tumour, overgrowth and food-bolus obstruction. As expected, patients treated with a stent had earlier symptom relief.

Stent placement *vs*. BT

- In line with dysphagia scores, short-term quality-of-life (QoL) of patients was also in favor of the stent group, whereas long-term QoL showed a positive trend towards the BT group.

Stent placement combined with BT. Three studies

- A single-arm prospective study on single-dose BT (12 Gy) followed by biodegradable stent placement was prematurely terminated due to an unacceptably high adverse event rate of 89% (9). Adverse events included pain, vomiting, hematemesis and recurrent dysphagia.

Stent placement combined with BT

- Another single-arm prospective study in which SEMS placement was followed by single-dose BT (12 Gy) showed relief of dysphagia without the occurrence of major adverse events.

- The RCT comparing SEMS placement followed by BT to BT alone (3×8 Gy) a significant improvement of dysphagia scores was seen in the combined therapy group after three weeks of treatment (71% *vs*. 39%, P<0.05).

Stent placement *vs*. irradiation stent (9 studies)

- Four of them being RCTs, compared regular SEMS placement with placement of an irradiation stent.
- All studies showed comparable results, including dysphagia relief in both groups.
- A systematic review and meta-analysis suggested that irradiation stents were superior over SEMS in terms of dysphagia relief at three and six months after placement. Non-surprisingly, medical costs were significantly lower in the regular SEMS-treated group,

Procedure

- The patient is starved overnight, Consent signed
- Morphine 1mg/kg and buscopan 20mg are given IM one hour prior to the procedure
- The patient lies supine
- Xylocaine sprayed into the patient's throat to anaesthetize the pharynx
- The doctor places the jellied catheter as patient is asked to swallow
- The epiglottis moves over the trachea, and the tube passes down the esophagus.
- The patient tends to bite on the tube, thus damaging it, a bite block can prevent this

- The treatment time is set according to the length of the treatment area and the dose to be given
- The length is the tumor + 2 cm sup and inf

Findings

- A retrospective chart review on 130 patients attending clinic at TCC from 2019-2022
- Average age 64 year, (29-83). 54% patients were male. Average FU 5.7 months, most lost to follow up
- 47 EC treated with EHDRBT at the TNH @16 Gy in 2
- Fairly well tolerated with an improvement in swallowing by at least one point for most patients
- Fatal complications in 2(4%)

Conclusion

- Although individual patient-related factors should be taken into account when selecting optimal palliative treatment of malignant dysphagia, short cycle EBRT is nowadays the treatment of choice in patients with an expected survival of at least three months.
- SEMS placement might be reserved for patients with severe dysphagia and short life-expectancy (less than three months).
- More studies are needed to give irradiation stents and/or combination therapies an established position in the treatment algorithm.

TOPIC: TREATMENT OUTCOME OF NEOADJUVANT THERAPY IN LOCALLY ADVANCED RECTAL CANCER

SPEAKER: DR. DULCIE WANDA-RESIDENT ONCOLOGIST KENYATTA NATIONAL HOSPITAL

Background

Rectal cancer is among the top ten cancers in Kenya with most patients presenting with locally advanced rectal cancer (LARC). Management requires multimodality treatment including neo-adjuvant therapy and surgery. GLOBOCAN data 2020 shows Colorectal Cancer to be 5th in the number of new cases in 2020, both men and women of all ages. There is limited data on the outcome for patients with LARC from Kenya and the broader region. Dr. Wanda Dulcie's study between January 2016 and January 2022 sought to evaluate outcomes of LARC from a tertiary hospital in Nairobi, Kenya, to identify barriers to care and methods to improve cancer outcomes**.**

Findings

Demographic and clinical characteristics of patients with locally advanced rectal cancer at KNH

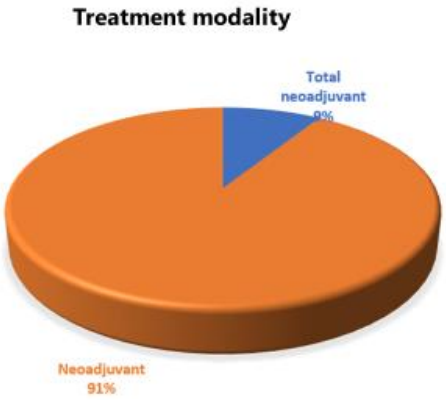
Demographic characteristics	n	%
Age (Mean± SD)	54.2±13.82	
Gender of patient		
Male	86	47.5
Female	95	52.5
Residence		
Urban	43	23.8
Rural	138	76.2
Cigarette smoking		
Yes	47	26.0
No	134	74.0
Average number of packs (Mean ±SD)	3±1	
Alcohol intake		
Yes	47	26.0
No	134	74.0
Family history of cancer		
Yes	33	18.2
No	148	81.8
Presence of comorbidities		
Yes	39	21.5
No	148	78.5

Clinical characteristics	Mean± SD	n	%
Tumor staging			
T2		10	5.5
T3		104	57.5
T4		67	37.0
Lymph node			
N0		47	26.0
N1		97	53.6
N2		37	20.4
Time before diagnosis (months) (Mean ±SD)	14.07±11.9		
Time from diagnosis to start of treatment months (Mean ±SD)	3.64±2.64		

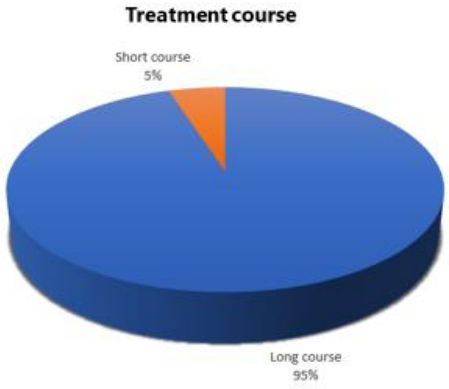
Imaging modality and histology assessment among patients with LARC at KNH

	Frequency	Percent
Imaging		
Chest imaging		
X-ray	6	3.3
CT scan	175	96.7
Abdominal imaging		
CT	181	100.0
Pelvis imaging		
CT Scan	27	14.9
MRI	154	85.1
Histology		
Well differentiated	146	80.7
Moderately differentiated	25	13.8
Poorly differentiated	9	5.0
Undifferentiated	1	0.6
MDT		
Yes	6	3.3
No	175	96.7

The neoadjuvant modalities utilized at the Kenyatta Cancer Treatment Center



Majority of the respondents, 91% (n =165) had neoadjuvant as the treatment modality



Almost all patients, 95% (n =172) were on long course treatment

Conclusion

The Study showed that patients with Rectal Cancer are;

Young, average age of 54.2 years, Female, 52.5%

Tumours confined to the rectum, 57.5% (T3 at diagnosis.)

Only 5% (n =9) underwent post-neoadjuvant surgery

Imaging modality used for staging conformed to the NCCN guidelines

All of the abdominal imaging was done using CT scan.

Multi-disciplinary tumour board was done in 3.3% of cases

Treatment modality - 91% were on neoadjuvant while 9% were on total neoadjuvan. 95% were on long course treatment and 5% on short course

The median progression free survival was 24 months while median overall survival was 36 months.

The presence of comorbidities, tumor staging and duration of symptom before diagnosis were independent predictors of overall survival

Recommendations

- Multidisciplinary Tumour Boards be should be integrated in patient management.
- Timely treatment of patients should be instituted
- Develop a follow up plan to ensure patients already diagnosed with LARC have improved treatment outcomes. This can include strengthening the Navigation Program.
- Create awareness on common symptoms of rectal cancer within the community across both genders

TOPIC: EFFECTIVENEESS OF PROSTRATE SIZE DETERMINATION USING ULTRASOUND GUIDED GRID

SPEAKER: ELLY KOMBO-MEDICAL PHYSICIST THE NAIROBI HOSPITAL

Background

Dr. Elly Kombo shared with the forum a study he conducted at the Nairobi Hospital on nine patients from 2017-2022. He used two procedures to test and establish exactly the condition of the prostrate namely biopsy and brachytherapy. The tracking remained the same as well as the track stepper and radiotherapy software. *"During the brachytherapy procedure we patients the high risk and medium risk patients. Usually those with a life expectancy of 10 years and they did not receive any ADT or Zolodex" .*

Findings

Patients who had a 2-3 months window before brachytherapy had a valuation of less than 20% with the volume of the biopsy being higher than brachytherapy procedure.

For those who took a shorter time it was different, the prostate volume was higher during brachytherapy, deviation was 25% except for patient number two who had a variation of more that 20%. "*This shows something to do with the healing time should we keep patients waiting for 2-3 months before coming back or the procedure to cater for the oedema effects as opposed to psychological impact on the patients who has to wait for a longer time before coming for the brachytherapy procedure?" Another question is 25% significant?"*

Most of the patients who had more samples collected during the biopsies had significantly higher volumes during brachytherapy. "*If we take more biopsy does it impact-fully increase the volume or does it have any alteration on the volume when conducting brachytherapy?"*

More than 80 % who had fewer samples taken the prostate volume during biopsy procedure was higher during brachytherapy procedure with percentages difference being lower than 25%.

Conclusion

Healing time between biopsy and brachytherapy procedures and number of co-biopsies taken likely had a significant impact on prostate volumes determined during brachytherapy likely due to oedema clearance.

Huge standard deviation for some patients may correlate to some factors like the human aspects of contouring or possibility of disease progression. *As a physician, should I guide the physicist to keep the patient waiting for more than two months after biopsy to get a brachytherapy for approximately 20% change of the prostate volume?* My answer would be we need more data to determine if the impact of the number of co-biopsies and time take would have a greater impact. Dr. Kombo concluded.

Dr. Kombo concluded by saying more data is needed to determine if the impact of number of co-biopsies and time taken would have a greater impact.

TOPIC: EFFECT OF PET/CT FUSION IN DXT PLANNING

SPEAKER: WAKARIMA WERU- RADIOLOGIST THE NAIROBI HOSPITAL

Background

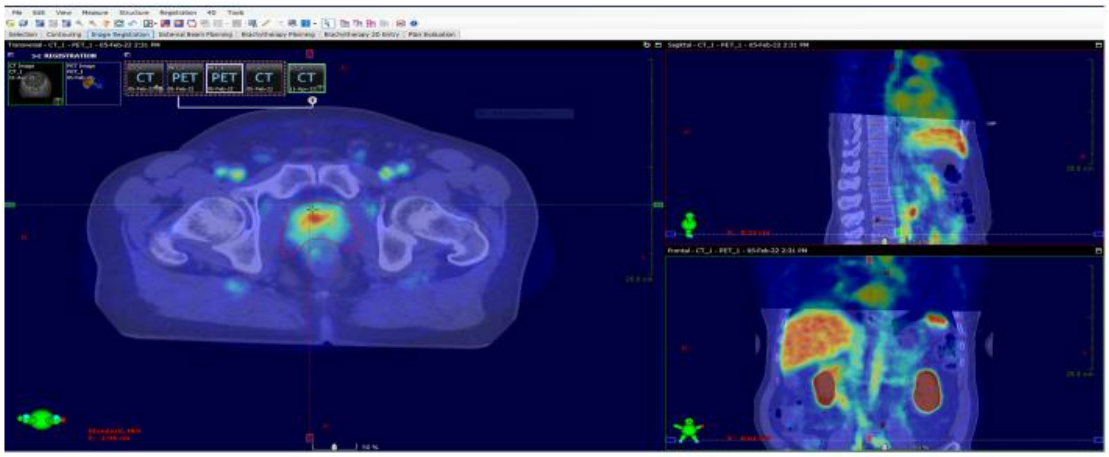
PET-CT was introduced in the Kenyan market in November 2021. It's benefits include;

- Superior diagnostic capabilities
- Applications in Radiotherapy Planning.
- More accurate delineation of target volumes.
- Smaller volumes
- Treatment using advanced modalities such as IMRT or VMAT.
- Reduced side effects of treatment.
- Improved QOL of patients.

According to Wakarima Weru, fusing occurs when the planning CT which is imported from the hospital RIS is fused to the PET CT. She cited patient Positioning as a limitation. It is overcome by using VOI in the treatment region. Treatment volumes can either be drawn after fusion, or before so as to compare the two and see the difference it makes. Clinical applications include Very small tumors, Tumors sitting next to critical organs, Respiratory Gating.

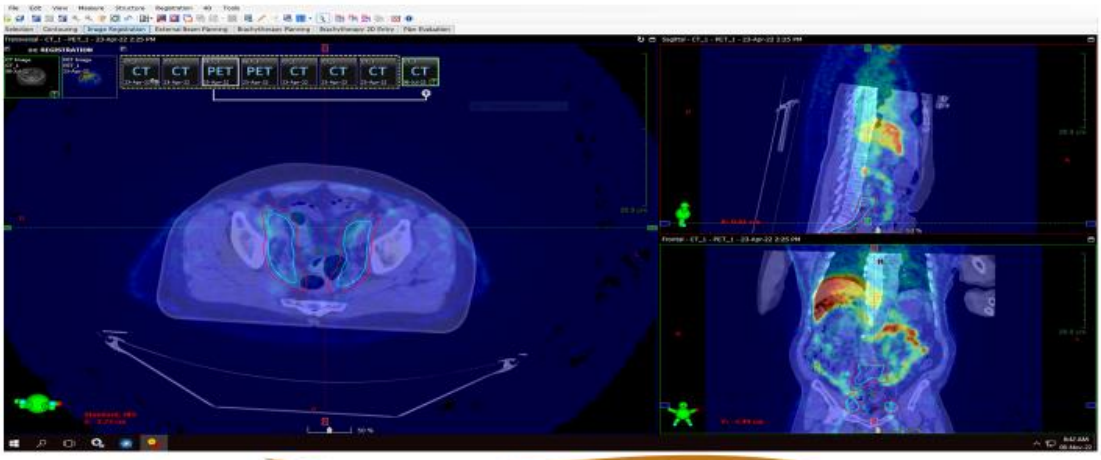
THE NAIROBI HOSPITAL

Prostate fused



THE NAIROBI HOSPITAL

Nodes Fused



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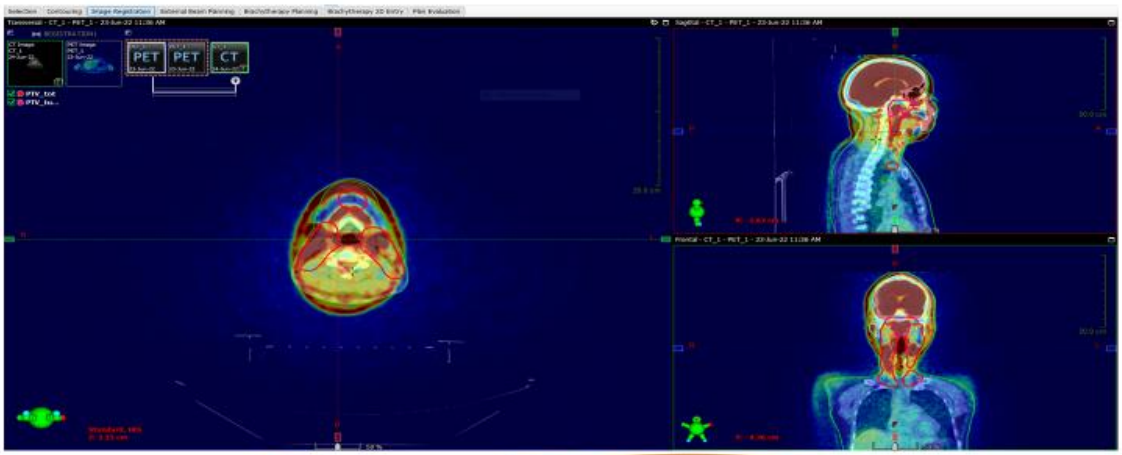
Head and Neck Nodes fused



Conclusion

- PET-CT Improved both diagnostic and therapeutic radiography.
- Allows for advanced modalities of treatment.
- Smaller treatment fields reduce side-effects of RT
- Improves QOL
- Allows for tolerance doses of OARs to be adhered to strictly.
- Need for early diagnosis to be able to achieve above.
- Sensitization on early screening for common cancers needs to be disseminated to our communities.

DAY TWO BREAK OUT SESSIONS- A2

ADVANCEMENTS IN ONCOLOGY (FREE PAPERS/ VARIED PRESENTATIONS/ OPEN COMMUNICATION)

TOPIC: ADMISSION PATTERN AND TREATMENT OF SOLID TUMORS AT TIKUR ANBESSA

SPEAKER: Dr. HAGOS GEBREKRSTOS

Background

During the last two decades the incidence of cancer has increased globally.
The type and pattern of cancer varies in:

- Geographical regions.
  People's life style.
  Socio-economic developmental status of countries

Dr Hagos submits: "The proportion of cases in the developing countries will increase from 56% in 2008 to more than 60% in 2030.Like most Sub Saharan countries, Ethiopia has no national cancer registry."

- This study determined patterns of admission and treatment of solid tumors in relation to address:
  Age
- Gender
- Tumors site and sub site
- Histology
  Group stage and intent of therapy

Objectives of the Study

To assess the admission pattern and treatment intent of solid tumors at TASH RT Center from July 2020 to February 2021.

Methodology

.Study area: TASH RT wards.

.Study period: July 2020 to Feb 2021

.Study design: Institutionalbased cross sectional

.Source data: Oncology Patient Registration System

.Sample size: 343 patients

The following figure shows the Result of admission and treatment patterns of solid tumors at TASH RT wards in Addis Ababa, Ethiopia.

Result of admission and treatment patterns of solid tumors at TASH RT wards, Addis Ababa, Ethiopia.

Variables		Frequency	Percentage (%)	Remark
Gender	Female	219	50.5	
	Male	215	49.5	
Patients address	Addis Ababa City	193	44.5	Top three
	Oromia Region	130	30.0	
	Amhara Region	51	11.8	
Cancer stage	Stage IV	313	72.1	
	Stage III	91	21.0	
	Stage I & II	30	6.9	
Tumor sub sites	Colon-Rectal ca	88	20.3	Top three
	Nasophargeal ca	46	10.6	
	Esophageal ca	43	9.9	
Histology	Adenocarcinoma		38.5	Top three
	SCC		36.9	
	Undifferentiated ca		6.2	
Intent of therapy	Palliative		59.4	
	Neo-adjuvant		23.3	
	Adjuvant		14.3	
	Radical		3.0	

Discussion

"Median age of points in this study (43.0 years) is consistent with a study done at teaching hospital at North west Tanzania where median age of 384 pts was 45 years."

While AA City accounts 4.3% of Ethiopia population, 44.5% of the pts came from the city, this can be due to:

-Pt proximity to TASH RT center.

-Increasing cancer centers providing chemotherapy in regional hospitals.

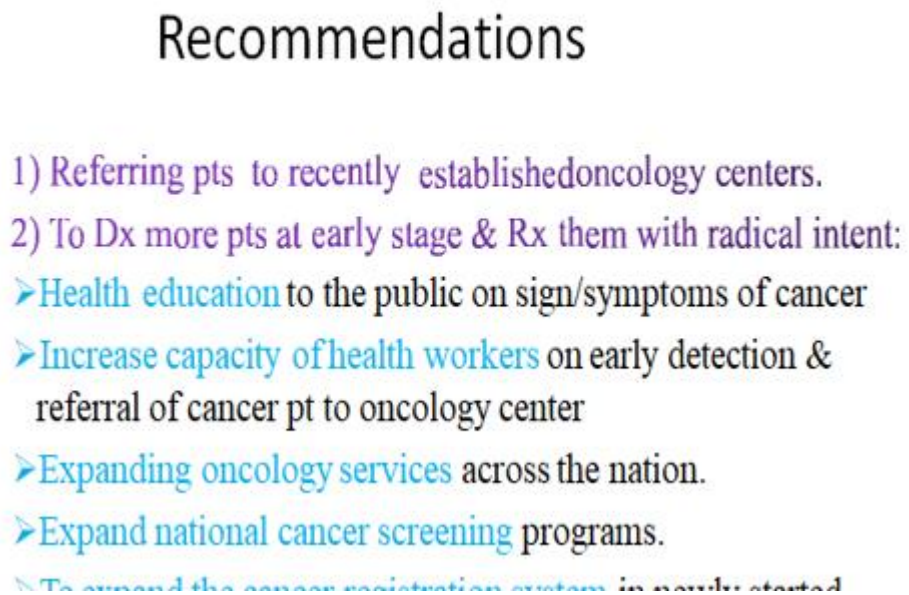
-Probably high health seeking behavior of population of the city.

Majority of our patients treated for palliative intent(59.4%).

This is consistent with the finding on stage of the patients, as advanced diseases are treated with palliative intent.

We tested for possible association between addresses of the patients with group stage and treatment intent, and there is no association among them.

Recommendations



Conclusion

Dr Hagos submitted that: "This study indicated that, most patients admitted to the oncology wards are at advanced stages. This can be due

to either late presentation or long waiting time for oncology treatment. As patients treated with outpatient chemotherapy are not included, a study incorporating this group of patients is indicated."

TOPIC: AN RCT ON STANDARDISED CHEMPTHERAPY EDUCATION VERSUS TRADITIONAL CARE AMONGST CANCER PATIENTS.

SPEAKER: Dr. BEATRICE GATHUA

Background

In Kenya, cancer is the third leading cause of death after cardiovascular diseases and respiratory diseases with nearly 47,887 new cases reported annually according to the GLOBOCAN database and Ministry of Health in Kenya in 2017.

Incidence in Sub-Saharan Africa is set to increase by more than 92 percent by 2040.

There has been a gradual transition of chemotherapy administration from an inpatient setting to outpatient.

Therefore chemotherapy cytotoxic effects which can be distressing to cancer patients are experienced.

Self-care interventions have been cited by World Health Organization as the most promising concept that improves health care by providing opportunities for individuals to carry out informed decisions pertaining their health and healthcare.

However, the quality of chemotherapy education provided by clinicians in Low Middle Income Countries is unstructured with ineffective non standardized approaches to chemotherapy side-effect management.

For that reason, patients with cancer are encouraged to take up active roles in the prevention and management of chemotherapy-related or disease-related symptoms while at home.

Research Questions

What is the difference in level of knowledge gained between a standardized chemotherapy education compared to traditional care in ambulatory cancer patients at MTRH?

What is the effect of a standardized chemotherapy education compared to traditional care on cancer patients' self-care?

Study Objectives

1. To assess the effect of a standardized chemotherapy education intervention compared to traditional care on knowledge of chemotherapy side effects among ambulatory cancer patients at MTRH.
2. To compare standardized chemotherapy education versus traditional care on patients self-care among ambulatory cancer patients at MTRH.

Methodology

Study Design-Parallel arm: open label randomized controlled trial with an allocation ratio of 1:1

Study Area: Oncology Unit, located in the Chandaria Cancer and Chronic Disease Centre at Moi Teaching and Referral Hospital

Target Population: Ambulatory Chemotherapy-naive cancer patients scheduled to undergo chemotherapy treatment at MTRH oncology unit.

Effect of self care behaviour: Correct action taken

Intervention group were able to take correct action on 42.9% of their symptoms compared to the control group who managed to take 33.3% correct actions on their symptoms.

A Wilcoxon rank-sum test done showed that the difference between the two median scores was statistically significant (p=0.0006)

Conclusion

- A well structured and standardized chemotherapy education intervention increases the level of knowledge on side effects from chemotherapy.
- This study has demonstrated that standardized chemotherapy education improves self-care behaviour and practices among patients receiving outpatient chemotherapy.

Study strength and limitations

Strength-The study was an open randomized control trial with a good sample size and diverse types of cancers with different chemotherapy regimens.

Design and implementation of written material and technology (follow-up-calls) to enhance recall of self-care behaviour.

Limitations-Study assumed the general adult population literacy level(81% UNESCO 2018).

The intervention period was short hence was unable to demonstrate cumulative benefits of patients involvement in self-care practices score.

Recommendations

- Need for a well-structured and standardized educational package on chemotherapy and potential adverse effects to ambulatory chemotherapy-naive patients.
- Assessment of cumulative increase in level of knowledge and self-care should be done.

TOPIC: REACHING THE LAST MILE: AN INNOVATIVE MOBILE HPV TESTING AND TREATMENT MODEL

SPEAKER-DR. SAMSON BOYO

Background

The World Health Organization is calling on the International Community to eliminate HPV by 2030.

Dr. Samson Boyo presented an interesting HPV testing treatment model in one of Kenya's counties in Western parts, Kisumu County.

In this model, the healthcare centers have designed a way in which they have come up with mobile clinics where women between the ages of 30-49 can take their samples and give them for HPV testing.

"We have been able to reach thousands of women using this model. In one hour, we are able to screen nearly 94 women and give them results," Boyo said.

After screening, the results are processed and transmitted to them via Short Message Service within an hour. This implies that the system is very efficient and effective.

"In those mobile clinics, there are ports where women can be able to get samples and give them in privacy without anyone watching them," Boyo said.

This picture shows a health worker in one of the Mobile Clinic.

One of the mobile HPV Testing Vans

Challenges

-But there are challenges whereby there is no proper data collection.

-Women who are expectant and those who are six weeks post-delivery are excluded from this screening.

-Nearly 50 percent of women do not show up for screening making it difficult to reach some targeted groups.

Recommendations

-Refining care based on risk stratification using HPV Genotyping data.

-Expand the use of HPV self-sampling in the low resources settings.

-Community based screening should not be restricted to only women living with HIV.

GYNAECOLOGY

TOPIC: ERCC EXPRESSION IN UTERINE CERVICAL CANCER

SPEAKER: Dr STEPHEN KIBENGO

Background

Dr. Kibengo submitted a study where he said that cervical Cancer (CC) is the leading cancer among women in Tanzania and also the leading cause of cancer deaths among women. Excision Repair Cross-Complementation group 1 (ERCC1) is an intracellular protein that contributes to elimination of DNA adducts formed by platinum compounds. Despite concurrent chemo-radiotherapy for CC, persistent disease is still a challenge in management2, ERCC1 over expression has been implicated in platinum

chemotherapy resistance by several studies and this negatively affects treatment outcome in patients with cervical cancer.

Objectives

Broad Objective

To determine the prevalence of ERCC1 protein expression among CC patients at Ocean Road Cancer Institute (ORCI) in the year 2020.

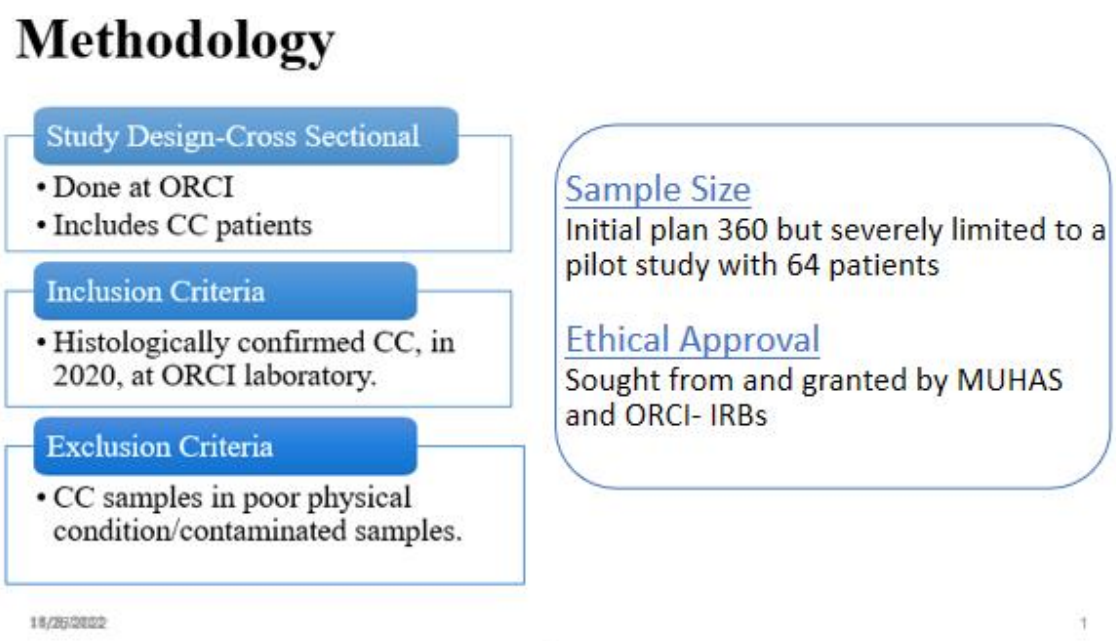
Specific Objectives

.To determine ERCC1 protein expression using IHC, on formalin fixed paraffin embedded CC biopsy samples from the year 2020, at ORCI

.To compare clinical and demographic characteristics of CC patients with high and low ERCC1 expressions

.To compare the treatment response of CC patients with high and low ERCC1 expression in the year 2020 using the RECIST criteria

Methodology



Findings

Results: High ERCC1 expression- 43.8%

Variable	Frequency	Percent
Age (years)		
31-40	9	15.8
41-50	18	31.6
51-60	13	22.8
>60	17	29.8
Unknown	7	10.9
Age mean (SD)	***53.49±14.73 years***	

Variable	Frequency	Percent
Stage (FIGO)		
1B	1	2
2A	6	12.2
2B	30	61.2
3A	5	10.2
3B	3	6.1
4A	2	4.1
4B	2	4.1

11/25/2022 1

Discussions

-Main finding- prevalence of high ERCC1 expression among our CC patients at ORCI is 43.8% -Similar to Ryu et al who studied CC patients in Asia.

-That CC patients in the 51-60years age group had a positive correlation with high ERCC1 expression (p=0.029).

-The HIV prevalence among CC patients was 25%.

-However, they did not find any association between high ERCC1 expression and FIGO stage, histology, HIV status or poor treatment outcomes.

Conclusions and Recommendations

"The significant proportion of high ERCC1 expression among CC patients at ORCI may be negatively affecting treatment outcomes. Farther research needs to be done to quantify the extent. Other similar studies with much bigger sample sizes and for example looking at OS, PFS and DFS need to be done to assess the impact of high ERCC1 expression on CC treatment locally and even regionally," concludes Dr. Kibengo.

TOPIC: IMPROVING ACCESS TO HUMAN PAPILOMA VIRUS BASED ON CERVICAL SCREENING THROUGH REFERRAL STRATEGY: FINDINGS AND RECOMMENDATIONS

SPEAKER: LILIAN GENGA, NATIONAL CANVER CONTROL PROGRAM

Background

"Cervical cancer is the leading cause of cancer deaths in Kenya, with 3,211 deaths in 2020. Women living with HIV have a six-fold higher risk of cervical cancer, compared to HIV-negative women. Financial, logistical and socio-cultural factors hinder population-level screening programs in Sub-Saharan Africa, with HPV-based screening in only 2% of countries," Genga said.

The Kenyan Cancer Screening Guidelines recommend programmatic screening for women aged 25-49 years, with Human Papilloma Virus (HPV) DNA testing as the preferred method for women above 30 years. To explore ways to efficiently roll out HPV-based screening in the country a sample referral strategy in a rapid-results initiative (RRI) in May 2021 was developed.

Objectives

- To explore ways to efficiently roll out HPV-based screening
- The findings from the RRI were reported to make policy recommendations.

Findings

- All the mapped sites were involved in screening
- The overall coverage of the targeted population was 57.3% (10,409/18,165), limited by availability of testing kits
- The overall HPV positivity: 17.0% (1813/10,409)
- Triaged using VIA Of those positive: 75% (1359/1813)
- VIA positive on triaging: 19.8% (269/1359)
- VIA-positive cases received treatment: 88% (236/269)
- The average testing turn-around time (TAT) was two weeks

Conclusions

The national referral laboratories to support a national HPV screening program.Close collaboration with implementing partners improved treatment rates.

TOPIC: CREATING A CONTINUOUS QUALITY IMPROVEMENT PROCESS FOR CERVICAL CANCER SCREENING IN KENYA: ACHIEVEMENT AND LESSONS

SPEAKER: AGNES BETTY NTHUSA, PROGRAM OFFICER, MINISTRY OF HEALTH NATIONAL CANCER CONTROL PROGRAM

Background

"Cervical cancer is caused by Human Papilloma Virus (HPV) infection, Cervical cancer & HIV: Women living with HIV: 6 times more risk . Cervical Cancer is preventable: Global Elimination Agenda."

Kenya is one of the countries with a high burden: 40/100,000 ASR. Screen and treat scale up in 25 counties in Kenya and that quality is fundamental in screening programs.

Objectives

- To establish whether there is a functional Quality Improvement Team in the counties
- To help the counties internalize their indicators and targets
- To come up with a simple screening and treatment commodities inventory
- Establish a effective fail-safe mechanism, that tracks screened clients throughout the cascade
- To encourage integration of breast cancer screening in cervical cancer screening program

Findings

- Target setting has been cascaded up to facility level.

- Quarterly program performance reviews, informed by screening program data.

- Data utilization for decision-making at county/health facility level has been strengthened.

- A QIT formation guideline has been disseminated and the implementation process commenced in the 25 scale-up counties. Most counties have existing QIT at County Health Management Team (CHMT) and level 4 and above facilities but not integrated screening.
  Best practice noted is integration of cervical cancer CQI processes within the Kenya Quality Model for Health (KQMH).
  Formation of cervical cancer Work Improvement Teams (WIT) to be integrated into existing QIT.

Recommendations

- To utilize the provided data summarization template to track the cervical cancer screening and treatment program at facility and county level.
- To form a regular framework of support, mentorship and experience sharing on matters quality and data utilization for decision-making.
- To use the cervical cancer monthly/quarterly/annual monitoring tool/scorecard to guide QITs to effectively track the cervical cancer screening and treatment program during their facility/CHMT meetings.

TOPIC: PATTERNS OF CARE AND OUTCOMES OF LOCALLY ADVANCED CERVICAL CANCER PATIENTS TREATED WITH CURATIVE INTENT IN SOUTH AFRICA

SPEAKER: Dr JULIET MAINA

Background

Worldwide cervical cancer is the fourth most frequently diagnosed and the fourth leading cause of cancer related deaths in women.

In Sub-Saharan Africa for instance, cervical cancer ranks as the leading cause of female cancer deaths.

The incidence and mortality of cervical cancer has declined during the last half a century because of increased availability of Papanicolau (Pap) smear screening programs and decline in fertility rates.
Current guidelines recommend that WLWH have regular Pap smear screening.
Despite these recommendations aimed to reduce their higher risk, cervical cancer screening for WLWH are poor, especially in Sub-Saharan Africa.
Treatment toxicity, response, and outcome depend on many variables, and differ between patient populations.
Many of these factors relate to tumour biology and general health and are potentially influenced by HIV status.

Objective

The aim of this study is to evaluate the patterns of care and outcomes for patients with LACC (Stage IB1 – IVA) treated with curative intent at a tertiary center in South Africa.

Study Design

This is a retrospective study conducted at Groote Schuur Hospital-GSH in Cape Town, South Africa between July 2013 and July 2018.

Overall survival and Disease-Free Survival were evaluated using the Kaplan-Meier Method.

Logistic regression modelling was performed to assess factors associated with chemotherapy receipt and baseline haemoglobin ≥ 10 g/dL.

Statistical significance was considered with a p-value of <0.05.

HIV-POPULATION

Our study indicated no difference in survival between HIV-infected and HIV-uninfected patients (HR 1.13; 95% CI 0.64-1.99, p=0.668)

Conclusion

- The results of our study reinforce the body of evidence confirming that CCRT improves therapeutic outcomes and survival in patients with locally advanced cervical cancer.
- In this study, patients with stage III/IVA treated with curative intent did not receive chemotherapy, which was detrimental to their survival.
- Therefore, if performance status allows, it is essential for all to receive chemotherapy. However, patients with low Hb may require transfusion to necessitate they receive chemotherapy.

HEALTH SYSTEM STRENGTHENING

TOPIC: OVERVIEW OF PATIENT NAVIGATION PROGRAM KENYATTA NATIONAL HOSPITAL IN KENYA

SPEAKER: Dr. CATHERINE NYONGESA- RADIATION ONCOLOGIST, KENYATTA NATIONAL HOSPITAL

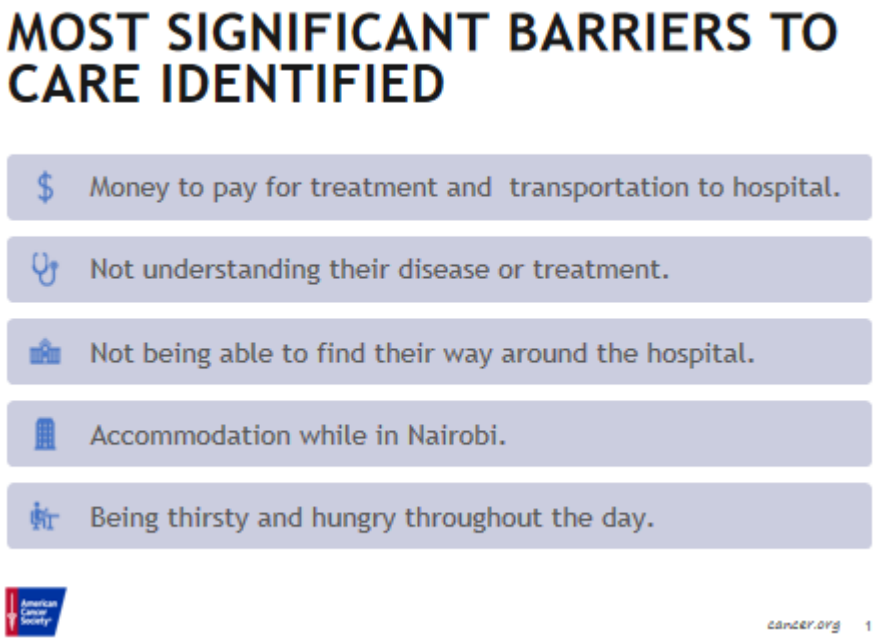
Background

Kenya faces various gaps in cancer control, including but not limited to low awareness on cancer and its risk factors, myths and misconceptions.

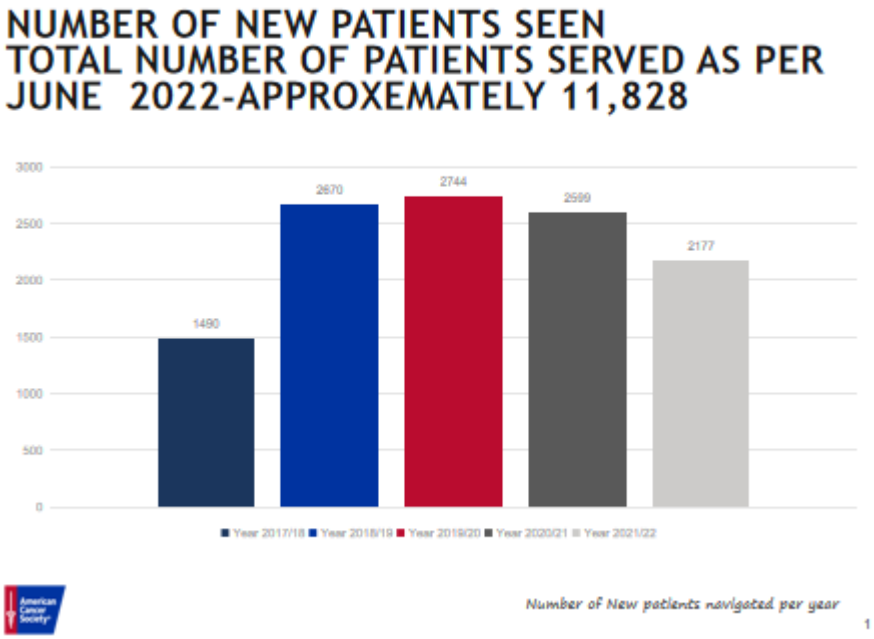
"As in many low- and middle-income countries, most cancer cases in Kenya are diagnosed at an advanced stage, when treatment options are limited and families make huge sacrifices, often with poor results," Dr. Nyongesa submitted.

Households not covered by health insurance frequently grasp for dire financial fixes – borrowing, selling assets – that can plunge them further into insolvency. She added that with less than 20% of the population enrolled in the national health insurance scheme, financial barriers to accessing care remains problematic as many Kenyans only enroll once they become sick.

Barriers to care identified



- **Number of patients served as demonstrated in the graph below**



- **Report Card on Gender and Age**
- In terms of Gender, the report showed most patients seeking cancer services at CTC and other cancer clinics over the years are women with 65%.The program as of the 2021/22 financial year had served 7680 female patients and 4148 male patients.
- Separately the report implied that irrespective of the financial year, the hospital consistently registered highest number of patients above 65 years.

Patient's Story with Cervical Cancer

- *"When I was referred to KNH cancer treatment Centre, I had just been diagnosed with cancer of the cervix and HIV. I was devastated with the news of two major diseases. I felt as if my world had crushed down and that God had really abandoned me. I was actually hopeless and saw death in front of me. I didn't have any income. We had separated with my husband. But when the Navigators assisted me with information about the disease and also in acquiring the ARVS, I*

felt the courage to follow up the treatment. They assisted me register with (NHIF). They also convinced my ex-husband to give me his NHIF card to pay for chemotherapy and radiotherapy before mine matured. I am full of hope now as I write this, my treatment is working. I am happy I will be able to provide for myself and my son again."

Quote from a Breast Cancer Patient

- *"When I learnt that I had cancer, I was very scared. After meeting my navigator, I learnt a lot more about cancer and felt encouraged to seek treatment."*

TOPIC: PATTERNS OF CANCER BURDEN, CHALLENGES AND OPPORTUNITIES FOR FUTURE IMPROVEMENTS-GARISSA CANCER CENTRE

SPEAKER: Dr. OMAR ABDIHAMID, CLINICAL ONCOLOGIST

Background

All patients with cancer and cancer survivors have the absolute right to access optimal cancer care without discrimination. Part of these patients' rights charter includes the right to have access to oncologists and nurses dedicated to their care. They also have the right to affordable and evidence-based treatment.

The following data showed cancer footprint globally, on the African continent and in Kenya in the year 2020:

2020 World Cancer Data

KESHO
Kenya Society of Haematology & Oncology

10+

GLOBOCAN 2020: New Global Cancer Data

Members | Partners | Networks

17 December 2020

IARC released on 14th December the updated Globocan 2020 with new estimates on the global cancer burden, indicating that it has risen to 19.3 million cases and 10 million cancer deaths in 2020.

KESHO
Kenya Society of Haematology & Oncology

AFRO (AFRICA REGION)

WHO Cancer Regional Profile 2020

BURDEN OF CANCER

Total population (2019)

1'091'759'000

Total # cancer cases (2018)

811'138

Total # cancer deaths (2018)

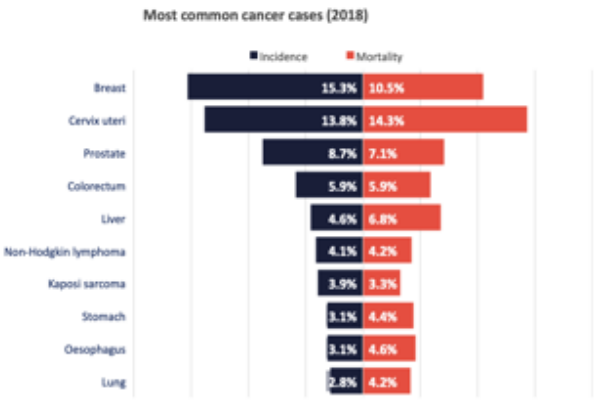
533'877

Premature deaths from NCDs (2016)

1'326'373

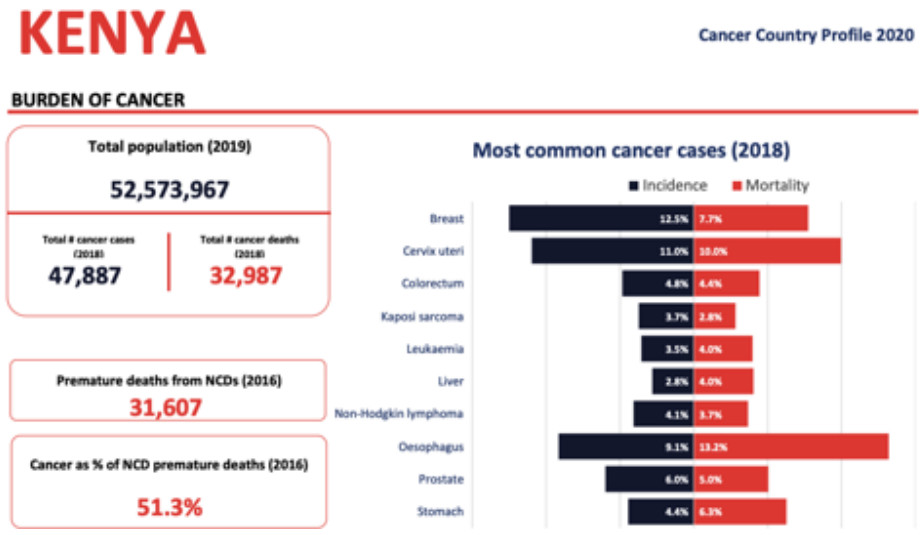
Cancer as % of NCD premature deaths (2016)

25.2%



Globocan Data

KESHO
Kenya Society of Haematology & Oncology



Challenges in Cancer Care in Kenya

- ✓ Cancer awareness/ lack of available nationwide cancer screening programs.
- ✓ Poor health-seeking behaviours: Late presentation (20-30%).
- ✓ Financial toxicity: Exorbitant cost of cancer treatment.
- ✓ Lack of cancer care equity: The death sentence badge for the poor.
- ✓ Stigma/cultural nuances- lack of cultural-based cancer care.
- ✓ Lack of population-based studies- identifying high risk areas/groups.
- ✓ Lack of community- based cancer centres.

✓ Low uptake of health insurance schemes- only 20%of Kenyans is insured. Also complex health care system and poverty and wealth index gaps.

Impact of Cancer on Kenyan economy

- Ever-burgeoning and exorbitantly expensive local private hospitals as an option for the few financially stable patients with cancer.
- Mushrooming of medical tourism to other countries for cancer treatment, costing the patients and the Kenyan government millions of dollars annually.

Challenges at the New Garissa Cancer Center

- Enough Chemotherapy drug supplies
- Poor Uptake of Health insurance
- Pathology services; longer turnaround time
- Stand-alone Laboratory services
- Lack of electronic medical Data
- Research Funds are lacking
- Patient navigation systems
- Counselling and social work

Top ten cancer cases in Garissa (2019-2022)

2021

No	conditions	total	%
1	Esophagus	42	22%
2	prostate	36	18%
3	Hypopharynx	14	7%
4	breast	10	5%
5	Hepatocellular Ca	10	5%
6	leukemia	9	4%
7	lymphoma	9	4%
8	colon	8	4%
9	choriocarcinoma	6	3%
10	tongue	5	2%

Total 195

2022

No	conditions	total	%
1	PROSTATE	44	30%
2	ESOPHAGUS	23	15%
3	BREAST	10	7%
4	OVARY	6	4%
5	COLON	5	3%
6	HYPOPHARYNX	5	3%
7	NHL	5	3%
8	HCC	4	2%
9	GTN	3	2%
10	NEPHROBLASTOMA	3	2%

Total 146

Recommendations

Dr. AbdiHamid said that Garissa cancer center has the potential to close the cancer care gaps by proving the hugely unmet need for cancer services in northern Kenya.

However, it requires concerted efforts to improve its capacity in the thematic areas of pathology, palliative care, research, training, and employment of the core oncology workforce.

Implement the National Cancer Control Action Plan.

Conclusion

It is bad to have cancer and worse to have cancer if you are poor.The gap between rich and poor, highly educated and less educated and the urban-rural divide is substantial and continues to grow.

TOPIC: CANCER REGISTRY DEVELOPMENT OF HOSPITAL BASED CANCER REGISTER

SPEAKER: ELVIS ODENGO, NAIROBI HOSPITAL

Background

In Kenya cancer surveillance studies have been done by two cancer registries (Nairobi and Eldoret PBCR). Data from these registries have been utilized to generate country projections. HBCRs also plays a vital role in collecting data on patients seeking care in the health facilities. Data generated by HBCRs is reliable, accurate, and complete since the registry/records staff are able to interact with patients in real time. "Strengthening the existing HBCR in terms of capacity building,

mentorship, human resource and interdisciplinary collaboration will go a long way towards improving the quality of the data generated in our registries," Ondego submitted. This he added will help the hospital in planning, expansion and all stakeholders involved in cancer control and prevention.

Objectives

-To maintain data that is obtained from all patients visiting hospitals in Kenya.

-The aim is to establish HBCR program that captures hospital data on trends like mortality, recovery among others.

Methodology

-Methods: This was retrospective cohort study on patients accessing care and diagnostic services at the Nairobi Hospital.
-Period: Data collected were confirmed cancer diagnosis from 2017 to 2021 with clearly stated eligibility criteria that include all patients seeking care in the facility in adherence to international classification of oncology diseased (ICDO) and IARC registry guidelines.
-Variables: The data collection was categorized into; patient information, tumor information, treatment information, on concurrent illness information, sources, follow up information.
-**Management tool:** Data management processes, validation and analysis were done using the CANREG-5 tool.
Centralized office to host the hospital cancer data at cancer center under the guidance of KEMRI and NCI- Kenya.

Top 10 cancers in either Gender

Recommendations

TOPIC: IMPROVING ACCESS TO PATIENT CARE IN KENYA THROUGH AN INTEGRATED REGIONAL CANCER CENTRE MODEL

SPEAKER: Dr. MARY NYANGASI, HEAD, NATIONAL CANCER CONTROL POGRAM, MINISTRY OF HEALTH, KENYA

Background

Cancer burden is on the rise globally and locally. According to Kenyan Constitution, every Kenyan has a right to the highest attainable standards of healthcare. In the East African nation, cancer services have previously been provided at two national referral hospitals and a few private hospitals. In 2019, the Government of Kenya decentralized cancer services to 12 regional centres in a venture to increase service accessibility in line with the implementation of the Universal Health Coverage agenda for cancer.

Methodology

"We undertook an initiative to analyze the status of utilization of cancer services at the national and the newly established regional cancer centres," Dr. Nyangasi said.

She added that they analyzed secondary retrospective data from an existing database, the Kenya Health Information System between 2019 and 2021 with the aim of describing the socio-demographic characteristics and stage of presentation of patients, assessing the number of patient visits, the type of treatment modalities received and reasons for referral at the regional cancer centres.

The data was exported into Microsoft Excel sheets, with frequencies presented as absolute values and percentages while categorical data was summarized as graphs, frequency charts, proportions and tables.

Findings

- A total of 29,321 patients visited the regional centres in 2021; the median age was 57 years (IQR 44-68) and 57.3% (16,815) were female.
- Visits to regional centres represented 38.8% (29,321/75,501) of all visits to public cancer centres; new visits accounted for 16.4% (4814/29321), and the rest were follow-up visits. Most patients (71%) had an advanced disease.
- The proportion of male patients with advanced-stage cancer was significantly higher than that of the female patients (74% vs. 69%, $P<0.001$). Of the 15,275 patients who received treatment at regional centres, 69.1% (10,550) received chemotherapy.

Figure 1: Distribution of Patient Visits by Regional Cancer Centers in 2021 (n=29,321)

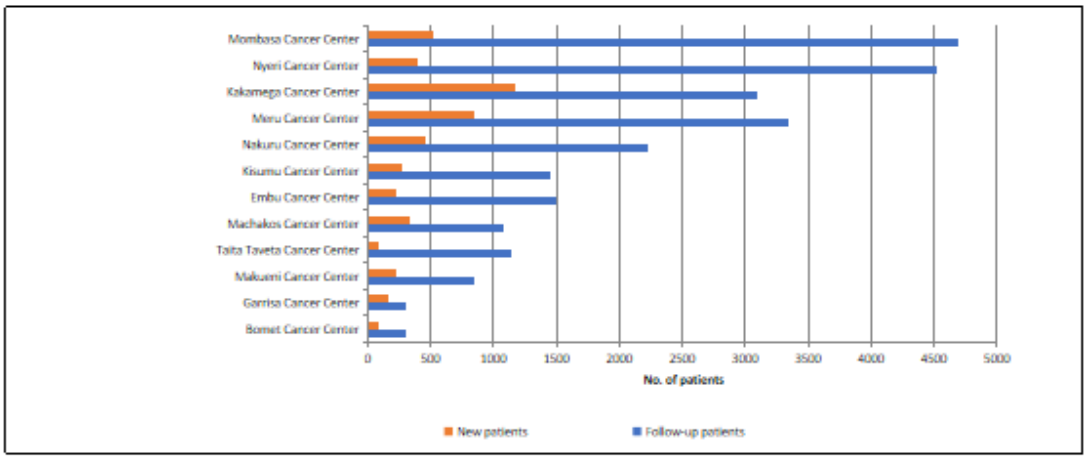
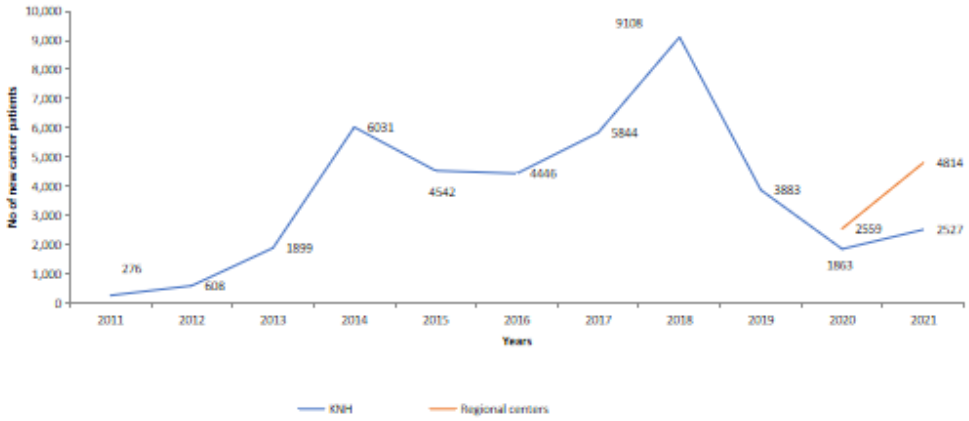


Figure 2: Trends of new cancer patients at the main referral hospital (2011 to 2021) and the regional cancer centers (2020-2021).



Conclusions

- Our findings provide detailed breakdown of service utilization and acceptability in the regional cancer centres with implications for future expansion to improve access to care in the region.

These data can inform national and regional policy making to optimize cancer service delivery as part of efforts to improve cancer outcomes.

TOPIC: USE OF DIGITAL TECHNOLOGIES TO ENHANCE CAPACITY BUILDING IN SUB-SAHARAN AFRICA: THE INTERNATIONAL CANCER INSTITUTE (ICI) MODEL.

SPEAKER: Dr. PAVARAJ CHANA, MEDICAL OFFICER, COMMUNICATIONS OFFICER, ARTIST, WRITER, CHILDHOOD CANCER SURVIVOR & CARETAKER TO TERMINALLY ILL LATE AUNT

Background

Cancer and haematological conditions are public health problems bringing varying levels of morbidity, disability, mortality and economic hardship. As per World Health Organization IARC's Globocan 2020, an estimated 801,392 number of new cases and 520,158 deaths were reported in sub-Saharan Africa (SSA) in 2020.
Globally more than 300,000 children were born with sickle cell disease annually with over 75% in SSA.

According to study done by Vanderpuye et al analysing the AORTIC network, the recommended standard numbers of healthcare providers were low, overworked and this has collateral damages.

Use of Digital Platforms in treatment

USE OF DIGITAL TECHNOLOGY AND PROCESSES

Virtual Tumors Boards-VTBs

Held bi-weekly. There are case and topical discussions with the multi-disciplinary team sharing standards of care for management formulation.

Offer the opportunity for continuous education, networking and mentorship.

Digital Pathology

Not only being used to enhance efficient diagnosis for remote affiliated centres but enhance diagnostic understanding.

Findings

. There was a total of 524 registrants for preceptorships.

.A majority were healthcare workers from different cadres (more than 87%), while others were administrators, advocates, and patients/survivors.

.For preceptorships, more than 90% registered for clinical courses. Close to 60% enrolled through social media pages, web-search engines, emails and portal postings.

Recommendations

"Recommendations were to improve provider-to-patient ratio, and develop new models of capacity building, retention and skill enhancement to strengthen care systems across Africa," submitted Dr. Chana.

He added that, ICI tried to address these, especially the lack of untrained healthcare providers and diagnostics, by offering accredited clinical and non-clinical preceptorship courses; virtual tumor boards (VTBs) and digital pathology, through digital technologies.

Preceptorships - Clinical and non-clinical education/training programs tailored for healthcare professionals, researchers, and health administrators. Additionally, Faculty are specialists from the multi-disciplinary team and from various parts of the Sub-Saharan Africa -SSA region to offer congruent contextual information.

The high cancer burden requires need for innovative ways to address various care and control components that bridge expertise of specialists.

There is still need for consultant supervision and secondary programs.

The study demonstrated feasibility to use digital means, and could serve as a guide and/or baseline for the implementation of other initiatives.

FREE COMMUNICATION

TOPIC: CAPACITY BUILDING FOR MULTIPLE MYELOMA-A CASE OF THE AMPATH MULTIPLE MYELOMA PROGRAM, ELDORET, KENYA

SPEAKER: DR BEATRICE MELLY, CLINICAL HEMATOLOGIST

Background

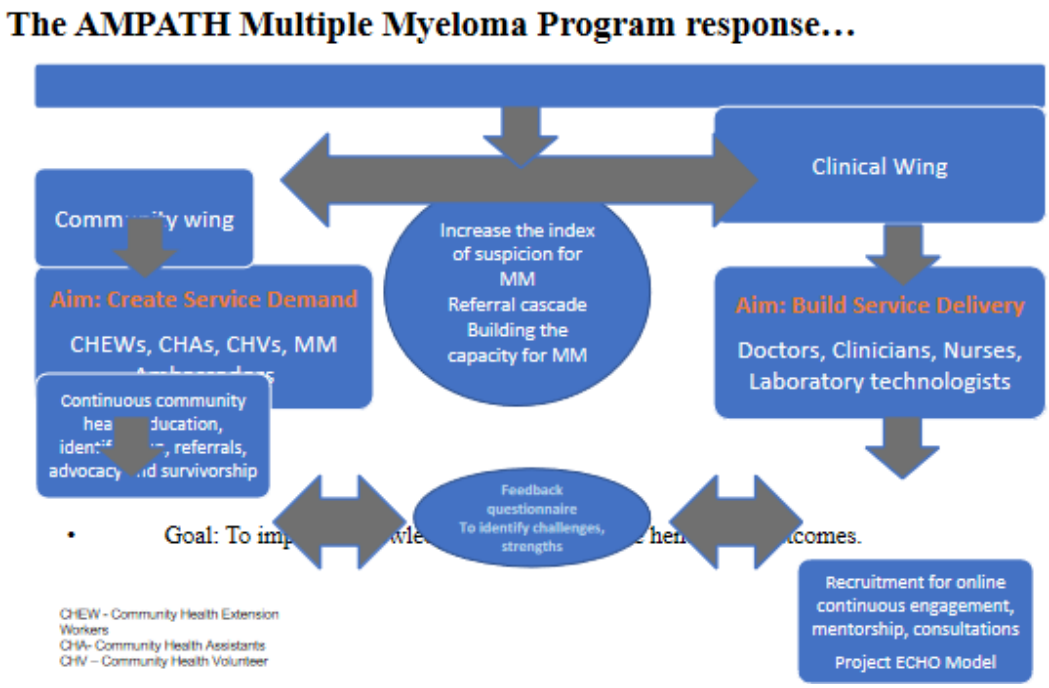
Multiple Myeloma accounts for 10% of hematologic malignancy. Age standardized incidence rate of 1-5.3/100,000. Multiple myeloma care outcomes remain poor in Sub-Saharan Africa with 5 – year survival rates of 9-64%.At diagnosis, a majority of clients usually are unfamiliar with the term "multiple myeloma." Most clients are for the longest time possible treated for myeloma-related symptoms. Medicine and Risk Management Pharmacovigilance reporting.

Study Objectives

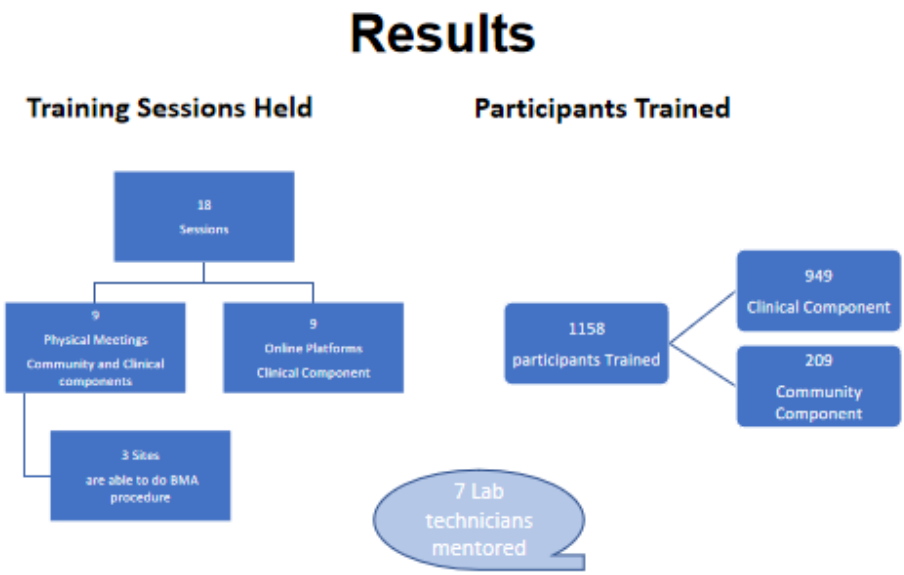
.To create the demand for MM services like screening, diagnosis, treatment, and survivorship at community level.

.To capacity-build the frontline healthcare providers to drive myeloma care services at county health facilities and seamlessly refer as appropriate.

The AMPATH Multiple Myeloma(MM) Program Response



Results Achieved



Conclusion

. The global incidence and outcome of MM shows significant disparities, indicating under-recognition and suboptimal treatment in many parts of the globe. Results also highlight the importance of access to quality health care, and patient education for improving diagnosis and survival of MM patients.

. Developing an accredited multiple myeloma-focused training program for health information dissemination increases the demand and utilization of myeloma care services.

.Expanding the health infrastructure and continuous mentorship as well as adopting the use of myeloma survivors in advocacy is critical in sustainability.

TOPIC: FACTORS ASSOCIATED WITH LTFU AMONGST CML PATIENTS IN KENYA

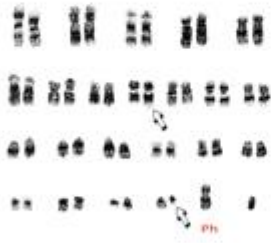
SPEAKER: Dr. OYIRO PETER, LECTURER, DEPT. CLINICAL MEDICINE AND THERAPEUTICS, UNIVERSITY OF NAIROBI

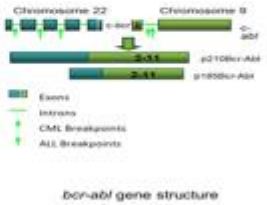
Background

- Patient retention in care is critical
- Retention relates to adherence and survival
- Prognosis is generally good with continuous use tyrosinekinase inhibitors
- However, Loss to follow-up and treatment adherenceremain critical challenge in Kenya.
- Study aim: Prevalence and factors influencing loss tofollow-up

Background

The Philadelphia chromosome (Ph)





bcr-abl gene structure

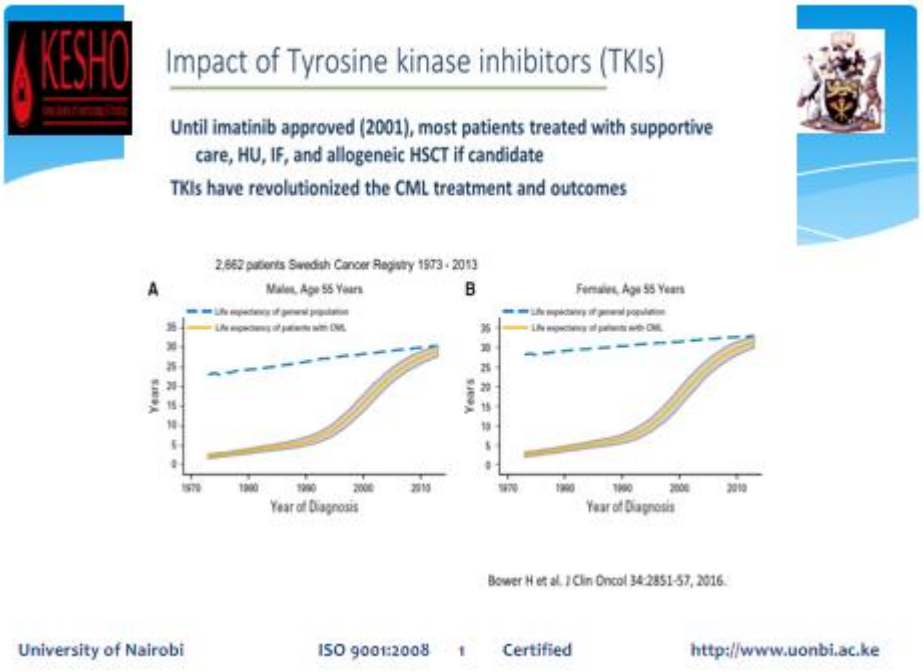
Background

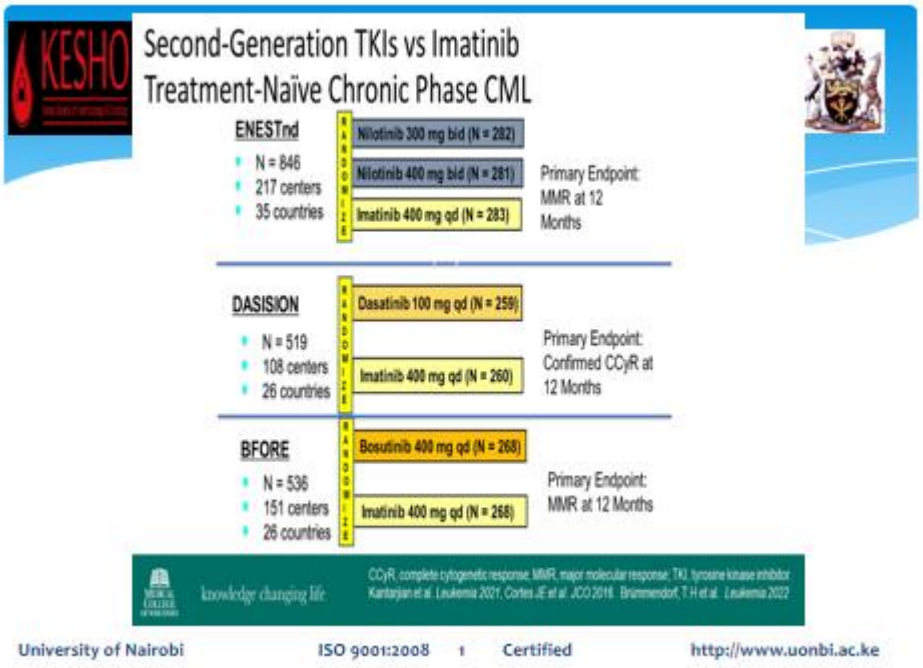
Optimal Frontline therapy:

- Goals of therapy
  - Prolong survival
  - Prevent progression to accelerated or blast phase
  - Treatment free remission
- Co-morbidities
- Risk Score
- Cost/Insurance/patient preference/physician preference

Tyrosine Kinase Inhibitors approved for the treatment of newly diagnosed CML

- Imatinib 400mg daily with food
- Nilotinib 400mg twice daily without food
- Dasatinib 100mg daily without food
- Bosutinib 500mg daily with food





Objectives

-To describe the factors influencing loss to follow-up among CML patients in Kenya

-Question: How can we reduce the number of CML patients lost to follow-up

Methodology

The registry, established under the MAS program, was coordinated by an advisory team, comprising officials from KESHO and NCCP.

A case report form was prepared with core minimum variables and an electronic database created, using Epi Info software (US CDC, Atlanta, GA).

A Cancer registrar abstracted, entered and updated data.
Data analysis was conducted using Stata 17 (Stata Corp. College Station, TX).

"We conducted descriptive epidemiology of CML cases; continuous variables were presented in either mean (S.D) or median (IQR)."

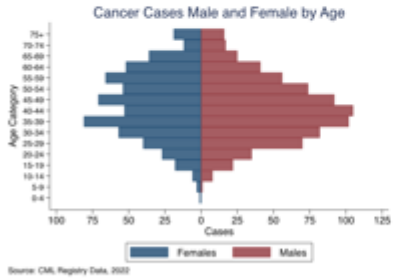
Categorical variables were summarized using percentages.

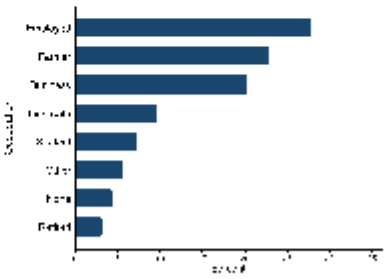
NOTE:

A total of 2000 patients were cumulatively enrolled in the programme since its inception in 2003 at the Nairobi Hospital. An average of 150 patients attended the clinic bi-weekly. The analysis dataset included data from 1347 patients.

Results

Results





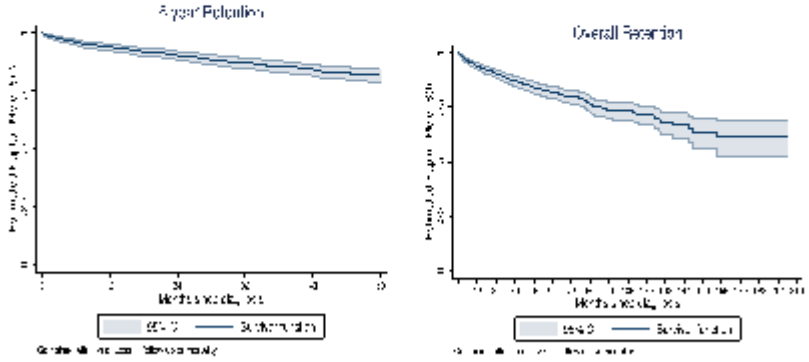
c Characteristics

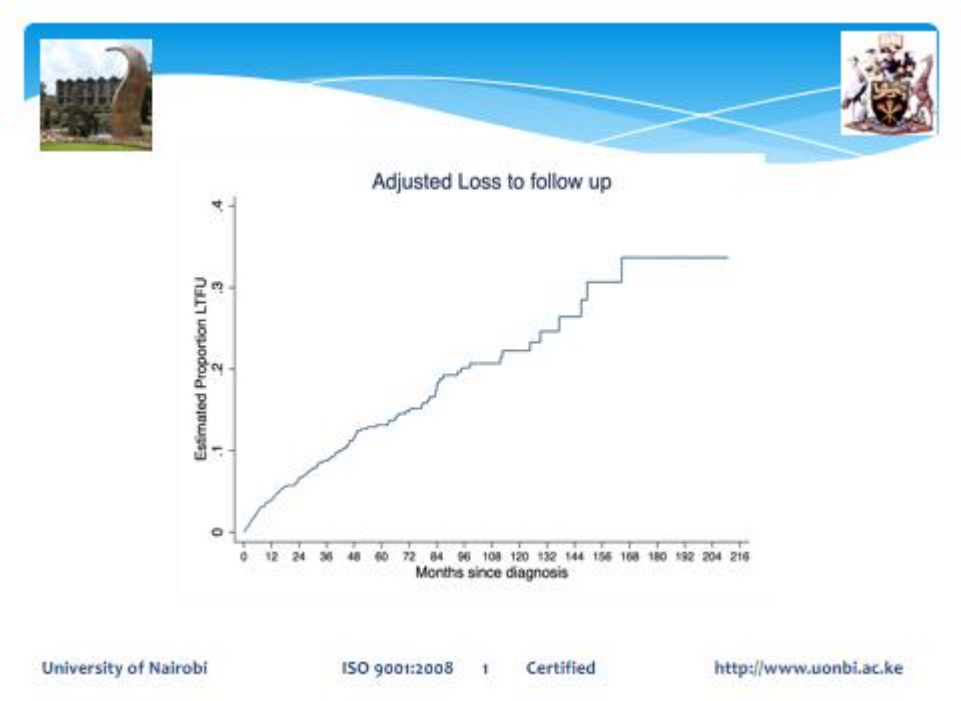
Baseline characteristics

Patient Socio-demographics	Total
n (%)	1347 (100.0)
Age, mean (sd)	44.12 (15.10)
Age category, n (%)	
0-19	59 (4.4)
20-39	494 (36.8)
40-59	571 (42.5)
60 and above	218 (16.2)
Pediatric, n (%)	
Adult	1294 (96.4)
Pediatric	48 (3.6)
Sex, n (%)	
Female	599 (44.5)
Male	748 (55.5)
BMI category, n (%)	
Underweight	70 (9.0)
Normal	433 (55.9)
Overweight	184 (23.7)
Obese	88 (11.4)
Body Surface Area (m^2), mean (sd)	1.75 (0.20)

Reason for starting third line, n (%)	
Adverse drug event	19 (40.4)
Drug stock-out	1 (2.1)
Other	15 (31.9)
Treatment failure	12 (25.5)
Type of TKI initiated as third line, n (%)	
Bosutinib	11 (22.9)
Dasatinib	19 (39.6)
Imatinib	3 (6.2)
Nilotinib	2 (4.2)
Ponatinib	13 (27.1)
Transformation, n (%)	
Missing	534 (39.6)
No	787 (58.4)
Yes	26 (1.9)
Phase of transformation, n (%)	
Accelerated	13 (72.2)
Blastic	5 (27.8)
Blasticcell type, n (%)	
Myeloblastic	4 (80.0)
Lymphoblastic	1 (20.0)
Treatment outcome, n (%)	
Loss to Follow Up	185 (13.7)
Deaths	11 (0.8)
Alive	1151 (85.4)

Patient Retention





Conclusion

Their data suggest a high rate of lost to follow-up. Underweight, unemployment and accelerated phase of disease were associated with higher risk of loss to follow-up.

TOPIC: DIGITAL DISSEMINATION OF CANCERTREATMENT PROTOCOLS-INNOVATIONS AROUND COVID 19

SPEAKER: Dr. JOYFRIDA CHEPCHUMBA, PROGRAM OFFICER IN CHARGE OF TREATMENT, PALLIATIVE CARE AND SURVIVORSHIP, NATIONAL CANCER CONTROL PROGRAM

Background

Burden of Cancer-Approx. 60% of new cancer cases and 70% of all cancer deaths occurin low- and middle-income countries (LMICs).Global cancer incidence is expected to double by 2035, with higherincrease expected in LMICs.

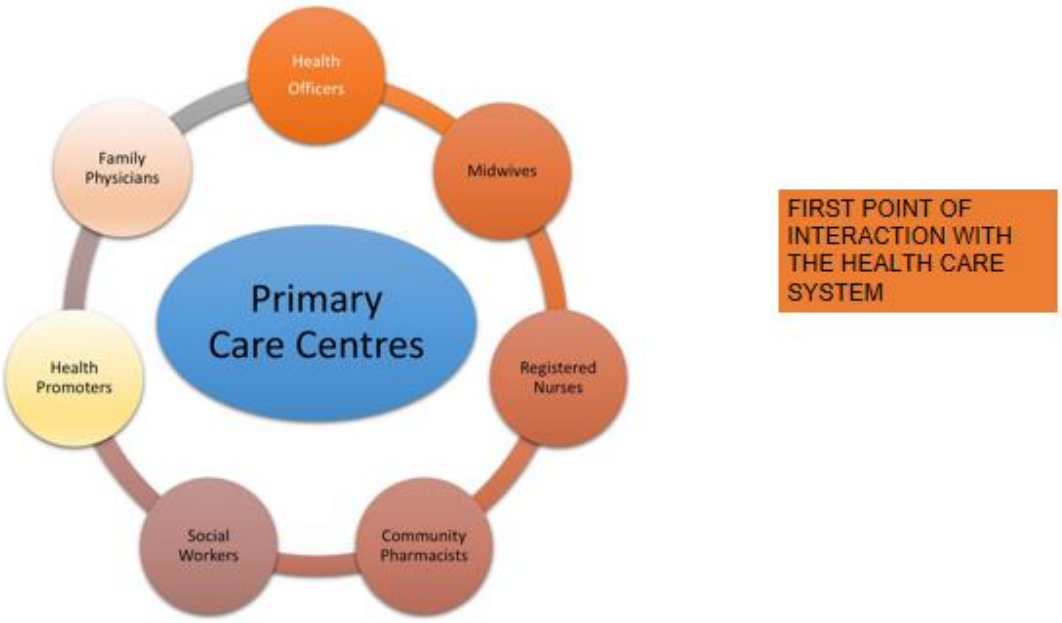
Health systems in most LMICs are unprepared to handlecancer e.g. shortages of cancer treatment specialists.

Rising trend: 14% rise in new cases from 2012 to 2020.

7 out of every 10 cases diagnosed in stage 3 and 4. Reason for this is attributed to low awareness of symptoms and available treatment options. This is in addition to low rate of acceptance and adherence due to geographical access and use of alternative therapy.

Also, Deficient diagnosis and treatment infrastructure, poor referral systems and

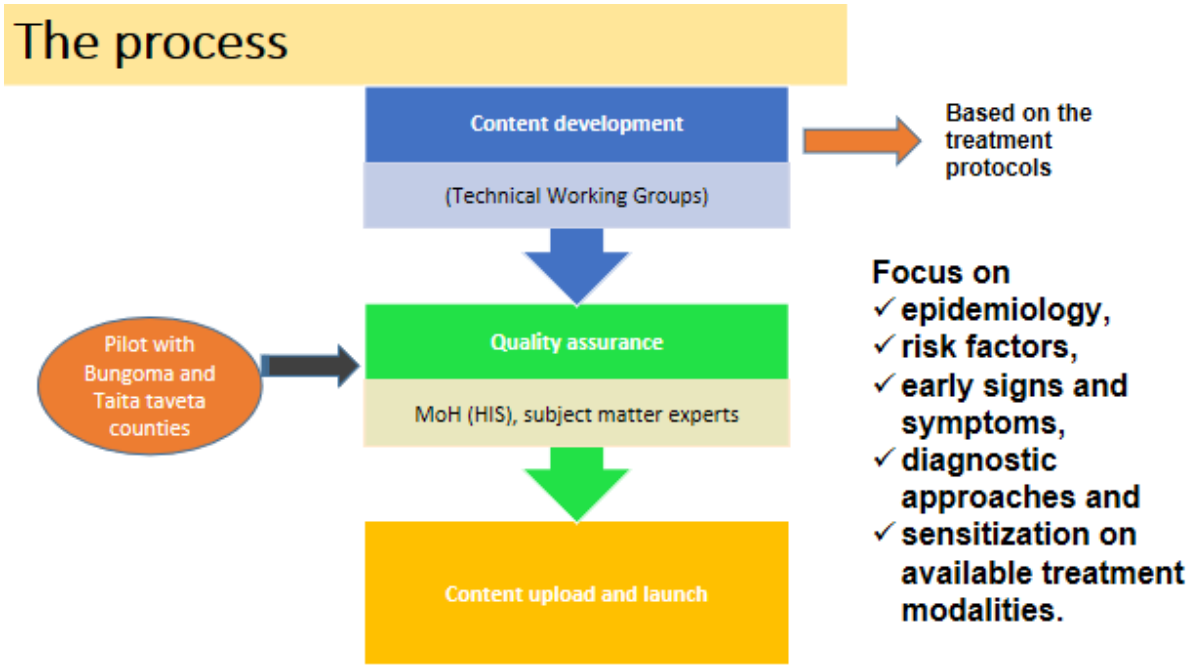
inadequate cancer specialists.



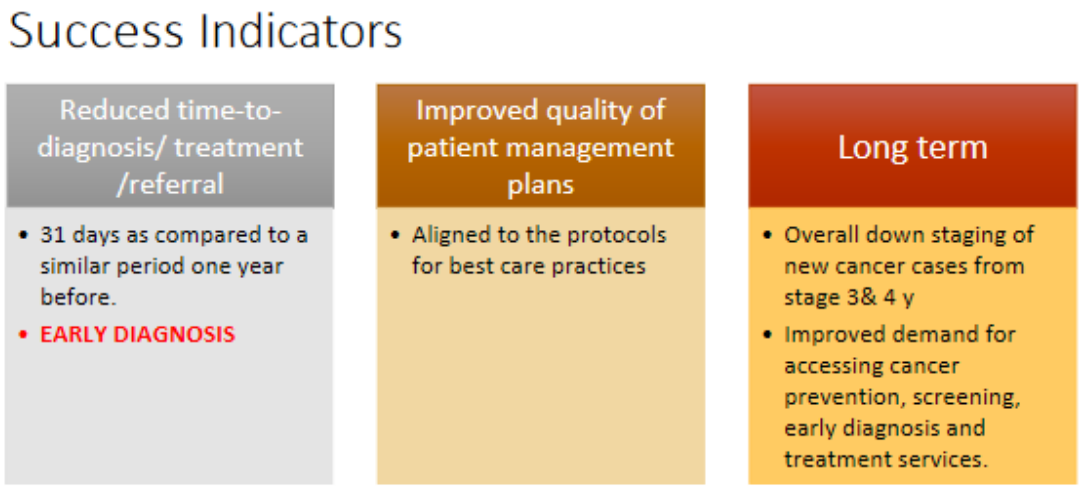
Intervention Processes

National Cancer Treatment Protocols 2019

- Developed by stakeholder in cancer care and treatment
- Outlines the various treatment modalities for each of the priority cancers
- Addresses 10 priority cancers
- COVID-19 pandemic interfered with dissemination of protocols to primary care networks



Success Indicators



Challenges

- ✓ Lack of time for health workers in busy set ups
- ✓ Lack of internet bundles
- ✓ Technological challenges
- ✓ Teething issues

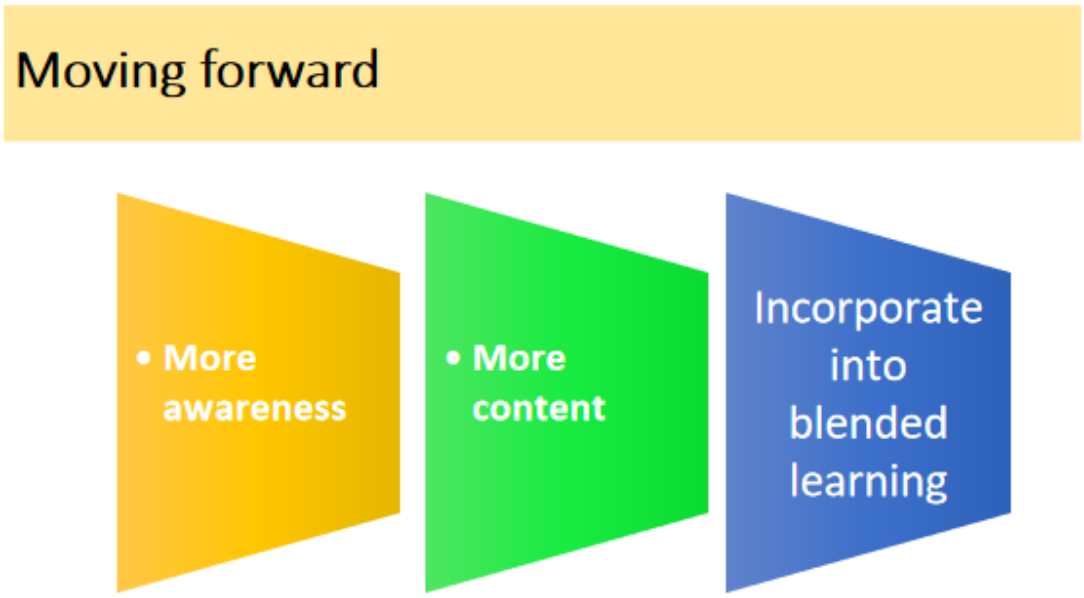
Conclusion

- ✓ These e-learning platforms offer a vibrant and cost-effective method for capacity
  building

- ✓ Necessity is the mother of invention …literally

- ✓ We thank all stakeholders who have contributed in the development of these platforms.

Way Forward



TOPIC: COVID-19 AND ACCESS TO CANCER CARE IN KENYA: PATIENT PERSPECTIVE

SPEAKER: Dr. CATHERINE NYONGESA- RADIATION ONCOLOGIST, KENYATTA NATIONAL HOSPITAL

COVID-19 Impact on access to cancer care

COVID-19 disruptions severely impacted access to health services for non-communicable diseases, including cancer.

The containment measures created new logistical challenges to triage patients in need of urgent care; to already existing barriers to care such as transportation and access to medicines.

These interruptions made cancer patients more vulnerable to both severe COVID-19 and cancer progression.

Few studies have examined patient perspectives of COVID-19- induced barriers to care in low/middle-income countries.

The Survey

A cross-sectional survey was done by Kenyan Network of Cancer Organizations (KENCO) and Kenyatta National Hospital (KNH) in collaboration with the American Cancer Society (ACS).

The aim was to examine the impact of the COVID-19 pandemic on cancer care, specifically among patients in low-resource settings in Kenya.

Conducted between December 2020 and February 2021
Recruitment material was circulated online on various networking platforms.

Used an expert reviewed, approved and pre-tested survey questionnaire; in English and Kiswahili (official languages in Kenya).

Findings

Participants:
In total 314 questionnaires were collected but 284 were found complete.
These were from 28/47 counties in Kenya.
65% participants were women.

Care needs:
48% of survey participants were in active cancer treatment
35% had completed the treatment
only 14% were in the diagnosis/treatment planning phase.
84% of the participants had visited KNH in the course of their cancer diagnosis and/or treatment.
Mean travel time was 2.47 hours from county of residence.

Economic Impact of COVID-19 on People with Cancer:

88% of the survey participants reported a decrease in their household income due to COVID-19.

79% of participants were worried that the financial impact of COVID-19 had made it harder for them to afford the cancer care they needed.

Of those in the diagnosis or treatment planning phase 87%, and of those in active treatment, 89% reported being worried.

Conclusions

Cancer patients are facing the economic and logistical challenges accessing vital cancer care during the pandemic.

The pandemic mitigation policies, such as cash assistance, inter-county travel permits, facilitated transport, patient navigators etc. will be very helpful for patients with cancer in these times.

More research is needed to examine the financial impact of COVID-19 on people with cancer and health care delivery institutions.

TOPIC: AN ECONOMIC EVALUATION OF BREAST AND SURVICAL CANCER INTERVENTIONS IN KENYA

SPEAKER: VALERIAN MWENDA, MD, Msc, NATIONAL CANCER CONTROL PROGRAM

Background

Overall cancer burden in Kenya: Early diagnosis rates are low – Nearly 70% of cancer cases are diagnosed in advanced stages.

Breast and cervical cancer constitute a third of all the disease burden in Kenya with the country lacking population level prevention and early detection programs for both cancers.

Economic Investment Cases

- Cancer services have not generally been prioritized in low-income and lower-middle-income countries by national governments or external funders, despite growing burden:

  -Urgency of other calls on health budgets

  -lack of a coherent economic argument for a range of cancer interventions
- Understanding the resources required to scale up cancer services is essential for negotiations between health and finance ministries on expanding the fiscal space for health, resulting in increasing financing for cancer services.
- An economic investment case for breast and cervical cancer control would guide integration into Universal Health Coverage efforts.

Findings: Cost and Impact

Over 40 years:

-395,000 lives saved (236,000 from breast cancer and 159,000 from cervical cancer.

-The interventions would cost KES 260.8 billion (6% increase over current general health expenditure).
-Net cost benefit: 349 billion
Cost-benefit ratio (CBR): 2.3 (every shilling invested can generate KES 2.3 in return).

-A early diagnosis program followed by scale up of mammogram-led screening saved the most lives, but CBE-led screening was the most cost-effective.

-A school-based HPV delivery platform saved the most lives and was the most cost-effective option over the long term.
-Early diagnosis interventions will down-stage the two cancers.

Conclusions and Recommendations

- Kenya should scale interventions to prevent and facilitate early detection of breast and cervical cancers, saving thousands of lives.
- Establish a breast cancer program that focuses first on early diagnosis before scaling up population-level screening efforts.
- Invest in scaling HPV vaccination efforts and cervical cancer screening.
- Kenya must balance maximizing cost-effectiveness and equity considerations.
- Wide dissemination and advocacy based on the investment case.
- Conduct more investment cases for other priority cancer topics Childhood, colorectal cancers.
- Broader case: Implementation of the National Cancer Control Strategy 2023-2028.

DAY TWO BREAK OUT SESSIONS- A3

ADVANCEMENTS IN ONCOLOGY (FREE PAPERS/ VARIED PRESENTATIONS/ OPEN COMMUNICATION)

TOPIC: PREVALENCE, MORTALITY AND RISK FACTORS OFCANCER IN KARATINS SUB – COUNTY HOSPITAL, NYERI COUNTY, KENYA

(Research Paper by Kenyatta University Students: Edith Kandie, Johnson Kamau, Faith Anne Nyagichuhi, Karen Wangari Njihia, Asmahan Abdulmalik, Sammy Ngaruiya)

SPEAKER: EDITH KANDIE

Background

Healthcare workers at Karatina sub county hospital have reported a large number of GIT cancers especially esophageal cancer. In Kenya, it is the 3rd leading cause of death after cardiovascular and infectious diseases. However, the reality of cancer strikes less as there is limited data per locality or per small geographical areas in the country.

Specific Objectives

- To determine the most common malignancy in Karatina Sub-County Hospital
- To determine the pre-disposing factors to the different malignancies in Karatina Sub- County hospital
- To determine the prevalence and mortality of cancers in Karatina Sub-County Hospital
- To compare the prevalence of the malignancies in both male and female patients

Method

- **Study design –** cross-sectional analytic design.

- **Study area –** Karatina Sub-County Hospital, Nyeri County, Kenya.
- **Study population –** patients who have been managed for cancer in Karatina Sub-County Hospital.
- **Sampling –** The study used a systematic random sampling method to select files and purposive sampling to identify Key Informants and Patients for interviews.
- **The sample size –** was determined using the Fishers et al formula; 150 participants.
- **Ethical approval**

- Kenyatta University Ethical Review Committee.
- Karatina Sub county Hospital Administration.
- The Nyeri County Administration.

Findings

Esophageal cancer is the most common malignancy at Karatina Sub-County Hospital

More prevalent in male farmers who smoked and used alcohol

Most cases had no family history of cancer though this could not be ruled out as over 40% of the patient files were incomplete

Results

Socio-demographic risk factors cancer in Karatina Sub-county hospital

Table 4.1: *Socio-demographic risk factors to cancer among respondents*

Characteristics	n = 150 n (%)
Year of diagnosis	
2020	32 (21.3%)
2021	72 (48.0%)
2022	46 (30.7%)
Sex	
Male	86 (57.3%)
Female	64 (42.7%)
Occupation	
Business	4 (2.7%)
Farmer	53 (35.3%)
Self-employed	4 (2.7%)
Security guard	4 (2.7%)
Others i.e driver, casual work, retired lab tech, formal, housewife	7 (4.7%)
Not applicable	78 (52.0%)
Smoking	
Yes	75 (50.0%)
No	36 (24.0%)
n/a	39 (26.0%)
Alcohol use	
Yes	69 (46.0%)
No	39 (26.0%)
n/a	42 (28.0%)
Family history of cancer	
Yes	12 (8.0%)
No	41 (27.3%)
n/a	97 (64.7%)
Outcome	
Dead	55 (36.7%)
Discharged	53 (35.3%)
No information provided	13 (8.7%)

Results cont'd

Most common malignancy in Karatina Sub-County hospital

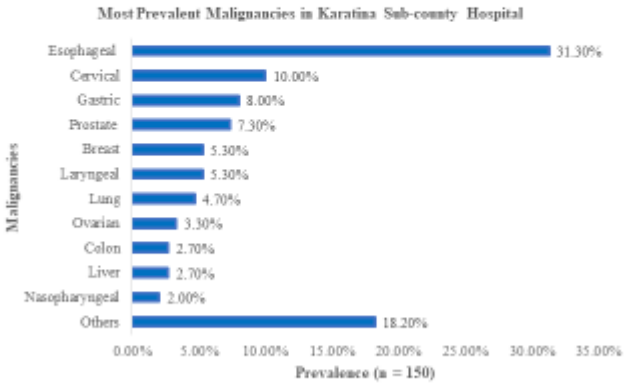


Figure : Most Prevalent Malignancies in Karatina Sub-county Hospital

Results cont'd

The predisposing factors to the different malignancies in Karatina Sub-County hospital

Table 4.2: *predisposing factors of different malignancies the Karatina Sub County hospital*

Determinants	n=150 OR(CI)*	P**
Esophageal cancer		
Smoking (ref: yes)	0.516 [0.246 – 1.083]	0.080
Alcohol use (ref: yes)	0.752 [0.341 – 1.656]	0.479
Family history of cancer (ref: yes)	0.748 [0.748 – 3.270]	0.700
Age	0.978 [0.958-1.001]	0.057
Sex (ref: male)	2.565 [1.216-5.413]	0.013
Cervical cancer		
Family history of cancer (ref: yes)	1.306 [0.150-11.402]	0.809
Age	1.033 [1.003-1.070]	0.033
Prostate cancer		
smoking (ref: yes)	0.231[0.029-1.862]	0.169
Alcohol use (ref: yes)	0.297 [0.037-2.405]	0.255
Age	1.057 [1.006-1.111]	0.030
Gastric cancer		
smoking (ref: yes)	0.532 [0.159-1.779]	0.305
Alcohol use (ref: yes)	0.406 [0.120-1.367]	0.146
Age	1.018 [0.977-1.060]	0.395
Sex (ref: male)	0.245 [0.052-1.161]	0.076
Laryngeal cancer		
smoking (ref: yes)	4.561 [1.040-20.014]	0.044
Alcohol use (ref: yes)	11.200 [2.150-58.333]	0.004
Family history of cancer	2.755 [0.297-25.591]	0.373
Age	1.007 [0.965-1.052]	0.742
Breast cancer		
Family history of cancer (ref: yes)	7.556 [1.253-45.575]	0.027
Age	1.035 [0.992-1.080]	0.109

*OR [CI] stands for odds ratio and their confidence intervals

** Significance level at $p < 0.05$

- Sex ($p = 0.013$) was significantly associated with esophageal cancer whereas smoking ($p = 0.080$), alcohol use ($p = 0.479$), family history of cancer ($p = 0.700$) and age ($p = 0.057$) were not.
- Being a female gave respondents a 2.6 less chance (OR = 2.565, $p = 0.013$) of having esophageal malignancy in comparison to male respondents.
- An increase of age by one unit gave the female respondents a 3.3% higher chance (OR = 1.033, $p = 0.033$) of developing cervical cancer.
- Similarly, with one increase of age by one year the male respondents had 5.7% higher chances (OR = 1.057, $p = 0.030$) of developing prostate cancer.
- The respondents who smoked and used alcohol were 5 and 11 times more likely (OR = 4.561, $p = 0.044$, OR = 11.200, $p = 0.004$, respectively) to develop laryngeal cancer than those who were non-smokers and non-alcohol users.
- Respondents who had a family history of cancer were 8 times more likely to develop breast cancer (OR = 7.556, $p = 0.027$) in comparison with those whose family did not have history of cancer.

Results cont'd

Comparison of prevalence of the malignancies in both male and female patients

Table 4.4: *Comparison of prevalence of the malignancies by gender*

	n =150			
Malignancies	Male n (%)	Female n (%)	X^2	p*
Esophageal cancer	34 (72.3%)	13 (27.7%)	6.302	0.012
Cervical cancer		15 (100.0%)	22.396	<0.001
Prostate cancer	11 (100.0%)		5.470	0.019
Gastric cancer	10 (83.3%)	2 (16.7%)	3.604	0.058
Laryngeal cancer	8 (100.0%)		6.289	0.012
Breast cancer		8 (100.0%)	11.356	0.001

Conclusion & Recommendation:

- The number of patients suffering from cancer has been increasing over the years in Karatina Sub-County.
- The study found that most of the participants suffering from different malignancies were males, farmers, cigarette smokers, and they took alcohol.
- The most common malignancies in Karatina Sub-county Hospital are esophageal cancer (31.3%)
- Prostate cancer had the highest mortality (45.5%).
- Researchers recommend a proper documentation of patients' history to cover the predisposing factors of the various cancers and further studies to clearly identify the predisposing factors to cancer; a cohort study.

TOPIC: METASTATIC COLON CANCER: ADVANCES IN MANAGEMENT

SPEAKER: ANGELA McLIGEYO, MMed, MBChB

Background

Colon cancer is the 5th most prevalent and the 5th deadliest cancer for both sexes, globally. It is caused by both strong environmental associations and genetic factors

- 70% sporadic – linked to environmental factors
- 20% familial clustering
- 10% inherited syndromes (FAP, HNPCC)

Risk factors include

- Personal family history of cancer, adenomatous polyps, polyps with villous or tubulovillous dysplasia
- Inflammatory bowel disease, mainly ulcerative colitis but also Crohn's disease
- Childhood cancer survivors who received abdominal radiation
- Diabetes mellitus/ insulin resistance
- Uncontrolled acromegally
- Weak, increased risk with obesity, red / processed meat, tobacco, alcohol, ADT

Protective factors

- Physical activity, diet (fruit, vegetables, fibre, fish) vitamin-supplements, garlic, ASA, NSAIDS, HRT, statins

Diagnosis and Staging

- CEA
- Colonoscopy/ biopsy/ pathology
    - MSI/ MMR – best validated prognostic and predictive molecular marker
    - KRAS/ BRAF/ HER2 individually or as part of NGS

- Baseline CT scan- chest, abdomen, pelvis with IV and oral contrast is the preferred cost-effective staging imaging
    - MRI may differentiate a low lying sigmoid tumor from a rectal tumor
    - MRI and triple phase imaging improves detection of liver metastasis
- PET not routinely indicated in the pre –operative staging of colon cancer
    - Consider PET for potentially surgically curable M1 disease or if CEA elevated with no evidence of metastatic disease

Management of Colon Cancer

Dr. McLigeyo pointed out that MDT should be on board from the onset for shared clinical decision-making and possibly outcomes

- Oncologists – medical, surgical, clinical
- Gastro-enterologists
- Pathologists
- Radiologists
- Nurses
- Nutritionists
- Stoma specialists
- Palliative service specialists
- Social workers
- Case managers

Systemic therapy for metastatic disease

- Approximately 15-30% of colon cancer patients present with metastasis, and 20-50% with initially localized disease will develop metastasis

- Prognosis of locally advanced non – resectable and metastatic disease poor with media OS 5-6 months
- Goals of treatment
    - Palliation of symptoms
    - Improve QoL
    - Prolong survival (5FU/LV -12 months, 5FU/LV oxalipatin- 24 months and Mabs – 36 and 20% 5Y OS)
- Guided by predictive biomarker (RAS/ BRA and MMR/MSI), primary location, ECOG, co-morities
- At bare minimum, do comprehensive testing of KRAS, NRAS exons 2, 3,4; BRAF V600E; MSI/MMR and HER2 amplification status
    - Done on primary tumor or o the metastatic site
    - In future, there may be trend to full to genomic profile prior to treatment

Systemic Therapy for Metastatic Disease

Drugs	**Examples**
Chemotherapy	Capectitabine, 5FU, Oxaliplatin, Irinotecan, TAS-1-2
Tyrosine Kinase Inhibitors	Regorafenib
Immune Checkpoint Inhibitors	Pembrolizumab, Nivolumab, Ipilimunab
BRAF and MEK inhibitors	Encorafenib, binimetinib
Vascular Endothelial Growth Factor Inhibitors (VEGF)	Bevacizumab, ramucirumab, aflibercept
Epidermal Growth Factor Receprtor (EGFR)	Cetuximab, Panitumumab
NTRK inhibitors	Laroctrectinib, Entrectinib

Recommendations for Potentially resectable mCRC

- If resectable upfront, go ahead
- If not resectable (>3 sites, bilobar dse, synchronous lesions etc):
    - Apply perioperative oxaliplatin based ChT (no molecular tests)
    - Apply anti – EGFR mAbs (cetiximab, panitumumab) in left sided (also right sided) RAS WT for conversion
    - Apply FOLFOXIRI- Bevacizumab (TRIBE) OR doublet- Beva with right sided, RAS mutant dse
    - Surgery carried out 3-4 weeks for chT alone or post Anti-EGFR, 5wk after VEGF
    - If first line of chemo unresponsive, give second line then resect
    - No evidence for benefit of post op chemo
    - In peritoneal mets only, perform complete cytoreductive surgery – HIPEC experimental

Systemic Therapy – Salvage

Several studies have shown benefit

- BRAF/ MEK Inhibitor
    - BEACON TRAIL
- Regorafenib
    - CORRECT
    - CONCUR
- Trifluridine –tipiracil (TAS -102)
    - RECOURSE

Prevention Counselling

- Lifestyle changes
- Obtain and maintain ideal body weight
- Establish active exercise routine
- Minimize alcohol consumption
- Quit smoking
- Screen for psychosocial distress

Treatment Monitoring

- Signs and symptoms
- Screen for somatic symptoms and psychosocial distress
- Adverse event monitoring
- Blood works prior to each cycle
- CT scan monitoring: use RECIST
- CEA every 3-6 mo
- Colonoscopy 1 year after surgery
    - Advanced adenoma- repeat annually
    - No adenoma- repeat in 3 years then 5 years

TOPIC: ADVANCED MANAGEMENT OF CANCER RELATED NEUROPATHIC CANCER PAIN (NCP)

SPEAKER: JOHN WERU, MBCHB, MPC, F-LDI, MAAHPM

"Pain is the most feared yet most under-managed side effect of cancer treatment" – Dr. John Weru

Dr. Weru began his presentation by posing a question to the delegates/ participants:

At what duration should titration of drugs initiated for NCP be considered? (Select One)

1. 72 hours

2. 7-10 days
3. 2-4 weeks
4. 4 weeks

Background

NCP is pain that is caused by damage to the nerve or the Central Nervous System, CNS. Its hallmark is localization to specific dermatones. The prevalence of NCP ranges between 40-60% of cancer patients. It is made up of distinct psychological, social and spiritual domains.

Systemic agents used in the topical form for the management of NCP (T or F)

- Gabapentin
- Amitriptyline
- Carbamazepine
- Pregabalin
- Duloxetine

Etiology

NCP is caused by a number of factors such as

- Direct nerve invasion
- Nerve compression by the cancer
- Neural toxicity
- Chemotherapy
- Radiotherapy
- Paraneoplastic Syndrome

Dr. Weru pointed out that the leading reason why cancer patients go 'doctor shopping' or move from one doctor to another is because pain is

not being adequately addressed by their current doctors or treatment regimen.

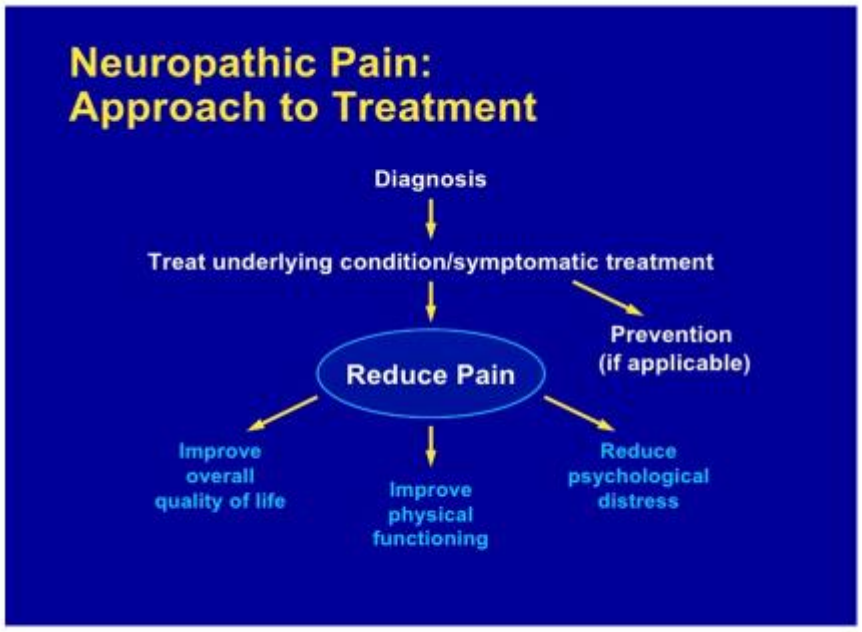
"One of the pitfalls of NCP is that we don't assess it"- Dr. Weru

How does NCP present itself?

NCP presents in two major ways

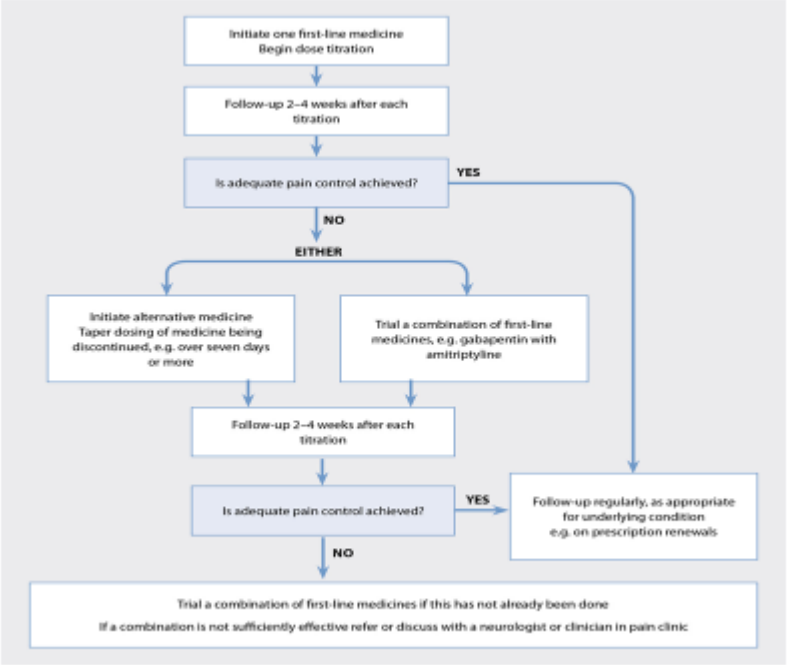
- Hypersensitivity- tingling, burning or electrical sensation
- Hyposensitivity – decreased sensation or muscle weakness

The following data was presented to show approach to treatment of NCP from diagnosis to reduction of pain



The diagrams below were used to show the line of management of NCP as well as the pharmacologic treatment of NCP

Dr. Weru's proposal was to begin low (dosages) and build up with the guiding principle; begin low and build up



Pharmacologic treatment of NCP

Medication	Starting dose	Maximum dose
Carbamazepine	100mg bd	1200mg/day
Amitriptyline	25mg nocte	100mg/day
Duloxetine	60 mg od	60mg
Gabapentin	300mg nocte	1800mg/day
Pregabalin	50mg tds/ 75mg bd	300mg bd

NB:1. All these drugs can be used topically for NCP

:2. Titrate every 7-10 days

Neuropathic Cancer Pain: Emerging Trends

Conclusion

- Comprehensive patient evaluation is essential
- NCP should be sought during initial evaluation
- Individualized approach is important
- Adjuvants- drugs of choice
- Drug titration is key
- Patient education is a must

Dr Weru's closing remark was this quote: "if you change nothing, nothing will change."

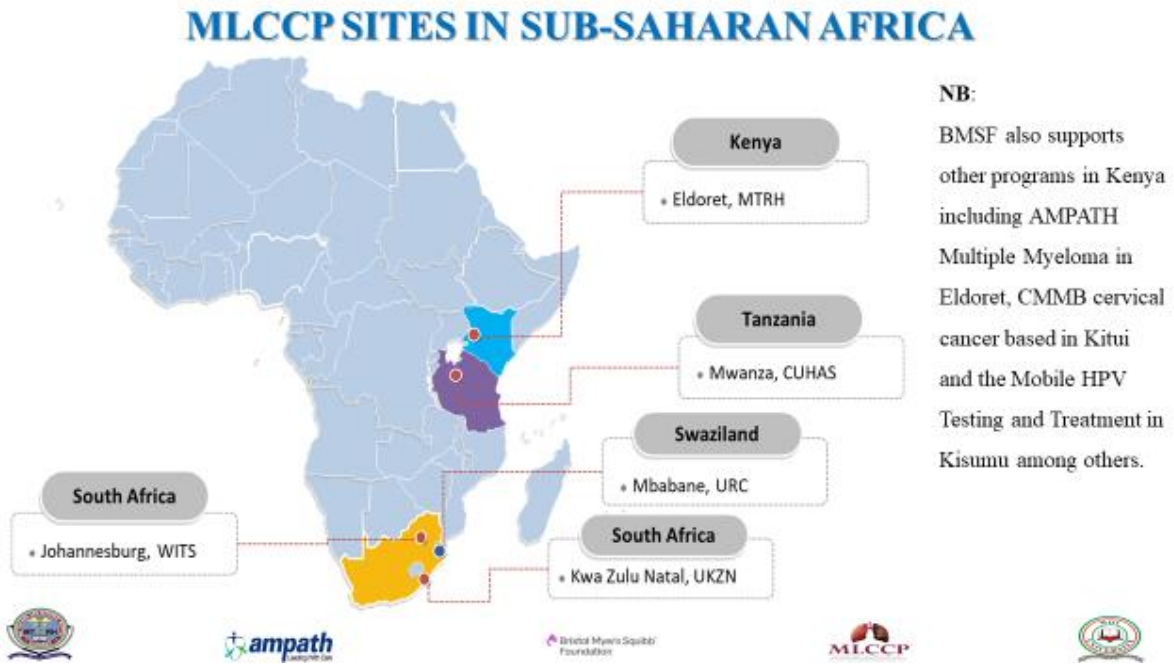
LUNG CANCER/UROLOGY/SARCOMA

TOPIC: OPPORTUNITIES AND CHALLENGES OF LUNG CANCER DIAGNOSIS, CARE AND TREATMENT IN WESTERN KENYA

SPEAKER: DR. NAFTALI BUSAKHALA, MOI UNIVERSITY/ MTRH/ AMPATH

Background

Dr. Naftali began by providing the scope of the programme/ MLCCP sites in Sub Saharan Africa



Lung cancer is not one of the top causes of death in Kenya. There are approximately 700 cases yearly and all are at stage 4. Lung cancer cases, as is the case with other types of cancer are largely underreported.

The idea of the study was to establish if lung cancer cases can be diagnosed at earlier stages in hospitals in Kenya

Strategy for achieving goals

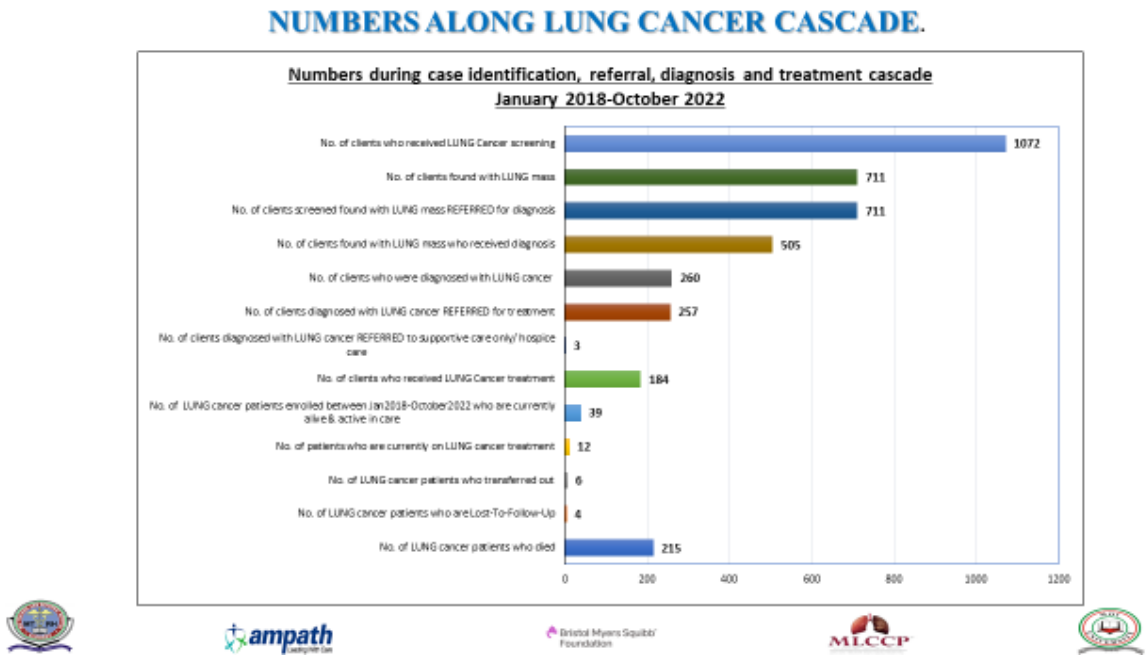
- Collaboration and Partnership

  The program works together with the Ministry of Health (MoH) and the community. One of the main partners is the National and County TB program

Method

- The team of researchers randomly collected a sample of people who had a chronic cough that had lasted longer than 2 weeks. The study was conducted between January 2018 – October 2022
- 1,100 patients were contacted and supported to get CT scans.
- 1,072 received lung cancer screening
- 711 were found with lung mass and referred for diagnosis
- 260 were diagnosed with lung cancer

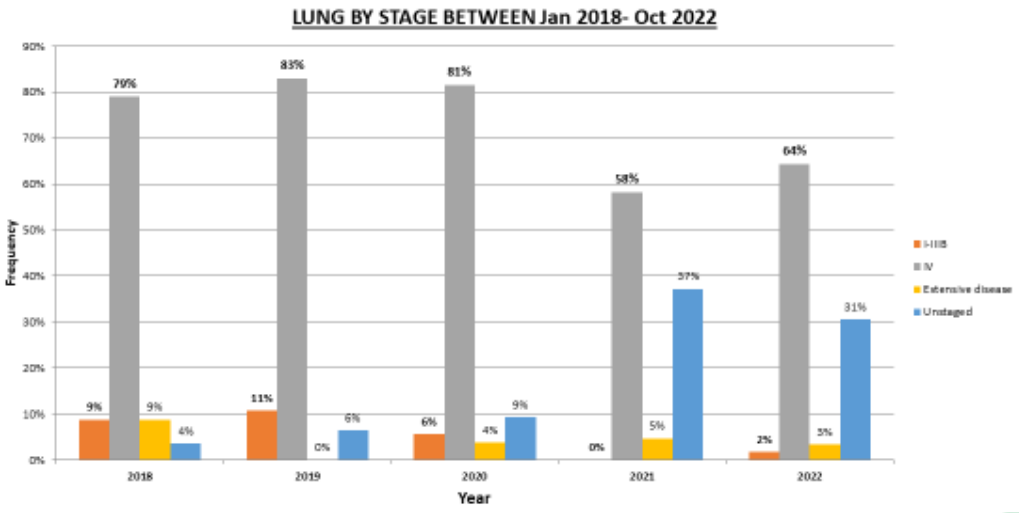
Detailed findings are shown below:



Findings

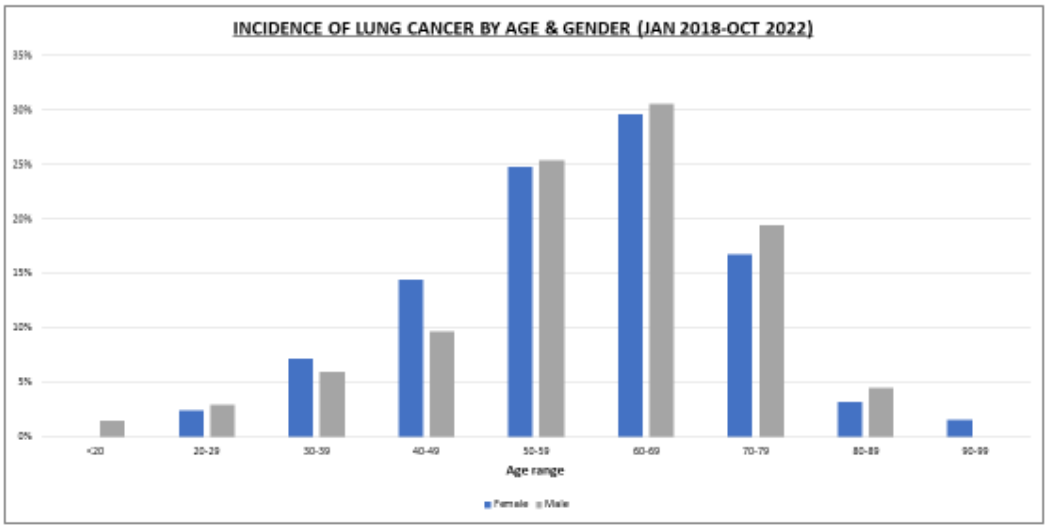
- Almost all cases of lung cancer were diagnosed late, at stage 4 with rising cases of patients succumbing before being staged.

STAGE OF LUNG CANCER AT TIME OF DIAGNOSIS (Jan 2018 to Oct 2022).



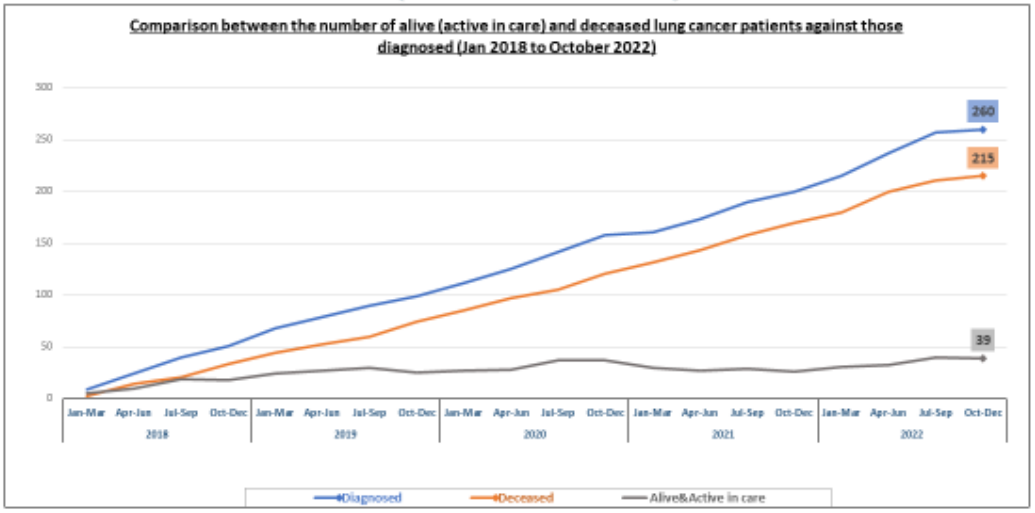
- Although the high risk age of lung cancer was found to be between 50-69, people as young as 20 and as old as 80 were getting confirmed diagnoses of lung cancer
- Lung cancer was diagnosed in almost equal numbers amongst males and females across different age demographics

AGE AND GENDEROF LUNG CANCER (Jan 2018 to Oct 2022)



- It was established that as the number of lung cancer diagnosis increased so did the mortality rate

TRENDS IN LUNG CANCER DIAGNOSIS, DEATH AND ALIVE (Jan 2018 to Oct 2022)



- Cost per patient from diagnosis to treatment was high.

Average per patient cost along the cascade.

		Procedure	Price
Diagnostic	1	CT-Scan Chest	8000
	2	IR Assessment	2000
	3	INR	1000
	4	Triple serology	1500
	5	Biopsy Gun	4500
	6	Coaxial needle	3500
	7	Drugs to be used during and after procedure	500
	8	CT- Guided Biopsy	15000
	9	Ultrasound Guided Biopsy	10000
	10	Histology Fee	1500
Staging	11	CT-Abdomen (Staging)	8500
Labs	12	Lab work	
		CBC	500
		UEC	850
		LFT	1500
Treatment	13	Treatment	
		Dexamethasone	400
		Ondansetron	300
		Piriton	10
		Carboplatin	8000
		Paclitaxel	9100
		Supplies	637
		Chemotherapy Administration Fee	600

Note	
For a patient done CT guided biopsy the total cost will be	67897.00
For a patient done Ultrasound guided biopsy the total cost will be	62897.00

- There was increased reporting of lung cancer at the duration of the program

Conclusion

- There is need to separate the rising number of reported lung cancer cases from rising mortality from lung cancer: increased reporting decreased mortality
- Cost/ resource allocation is important for the sustainability of the program/ interventions

TOPIC: DIAGNOSTIC ACCURACY OF F-18 PSMA- 1007 PET CT IDENTIFYING SITES AND PATTERNS OF BIOCHEMICAL RECURRENCE OF PROSTATE CANCER IN SUB-SAHARAN AFRICAN MEN

SPEAKER: SAMUEL NGUKU, AGA-KHAN UNIVERSITY HOSPITAL, NAIROBI- DEPARTMENT OF IMAGING

Background

Prostate cancer is the most common cancer in men and the leading cause of cancer related deaths among Kenyan men. Early stage disease is treated radically with surgery or radiotherapy. PSMA PET is the most sensitive and specific in evaluation of BCF after radical treatment

Objective of the study

To evaluate the patterns of recurrence of prostate cancer on F – 18 PSMA 1007 PET in sub Saharan African men.

Methods

- Cross sectional analytical study at Aga Khan University Hospital Nairobi

- F-18 PSMA-1007 PET CT examinations performed for patients with biochemical recurrence of prostate cancer between June 2020 and June 2022.
- The sites and patterns of biochemical failure were identified

Data was correlated with variables including age, PSA level at baseline, nadir PSA and PSA at time of biochemical recurrence and treatment history.

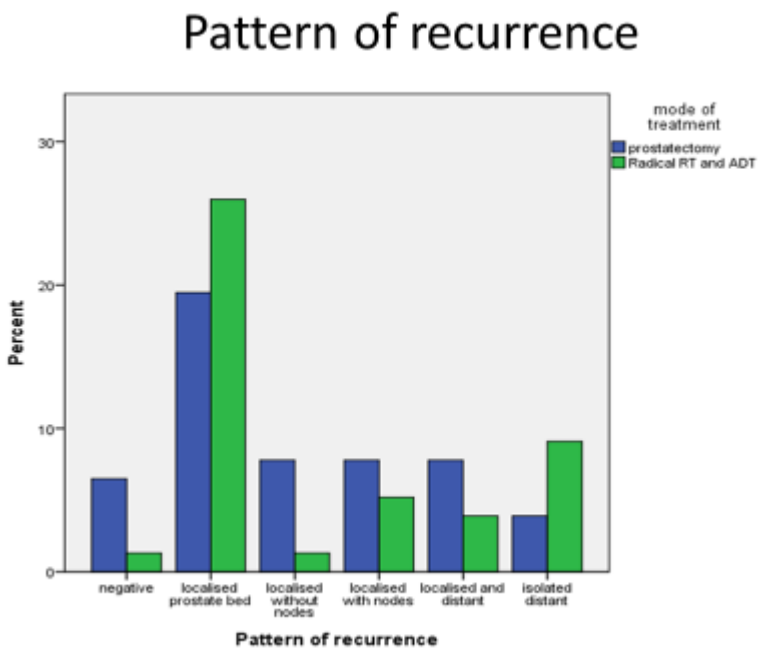
Findings:

- A total of 77 F -18 PSMA-1007 PET CT examinations were performed for evaluation of biochemical failure during the study period
- 41 (53.2%) patients had been treated with radical prostatectomy while the rest had been treated with radiotherapy in addition to androgen deprivation therapy.
- Signs of ligand avid recurrence were identified in 71 (92.2%) of the patients and majority, 52 cases (73%) had recurrence in the pelvis or prostate gland with or without pelvic nodal recurrence.

Results

Baseline characteristics

	Total	Disease recurrence (n=71)	No disease recurrence (n=6)	p-value
Age (mean ± SD)	68.5 ± 7.7	68.85±7.74	64±6.32	0.125
Mode of treatment (n=77)				
Prostatectomy	41 (53.2%)	36(87.8%)	5 (12.2%)	
Radical RT and ADT	36 (46.8%)	35 (97.2%)	1 (2.8%)	0.206
Duration from treatment to recurrence (years)	5.18 ± 4.0	5.12 ± 3.93	5.92 ± 5.55	0.744
Baseline PSA (n=38) median (IQR)	17.1 (11.85,25.5)	17.1 (12.3,28.5)	13.95 (9.9,18)	0.472
Nadir PSA (n=44) median (IQR)	0.05 (0.00,0.75)	0.06 (0.00,0.8)		0.633
PSA at recurrence (n=77) median (IQR)	2.8 (0.93,7.35)	3.3 (0.97, 8)	1.75 (0.55, 2.9)	0.242



Discussion

PSMA PET in BCFPSA rise above nadir after definitive radiotherapy (score9 –appropriate)

Local recurrence is most common

Mestasis directed therapy (MDT)

Conclusion

- F-18 PSMA-1007 PET CT had high sensitivity in identification of sites of BCF.
- Majority of patients had local pelvic recurrence
- Guide further metastasis directed radical treatment.

TOPIC: DETERMINATION OF FACTORS ASSOCIATED WITH SURVIVAL AMONG PATIENTS MANAGED FOR METASTATIC PROSTATE CANCER AS SEEN AT THE NAIROBI HOSPITAL

SPEAKER: DR AMINA K HABIB, MD, MMeD (UoN), FMOnc, MEDICAL ONCOLOGIST, AGA KHAN HOSPITAL, MOMBASA

Background

Prostate cancer is the most common malignancy diagnosed in men worldwide, and in Kenya. About 30% of patients with stage 4 disease will be alive at 5 years after diagnosis. Metastatic prostate cancer is a heterogeneous disease with different factors determining patient outcomes.

Study Scope

Factors that determine the outcomes of patents diagnosed with metastatic prostate cancer as seen in Nairobi Hospital from January 2017 to December 2019.

From the study, Dr. Kidee identified the factors associated with survival as:

- Age –this is however controversial
- Gleason Score – low Gleason score with better survival
- PSA+

    - Baseline
    - Decline
    - Progression
- Laboratory Parameters
    - Testosterone level
    - Alkaline phosphatase
- Base pain score/ requirement of analgesia
- Disease volume
    - Oligo-metastatic disease has better survival profile
    - Liver involvement had the worst prognosis
- Upfront treatment Modality
    - Chemotherapy upfront in high volume disease has better outcome
    - Radiotherapy to primary has better survival

Purpose and Methods

Objectives

Determine the factors associated with survival among patients managed for metastatic prostate cancer at the Nairobi Hospital between 2015 and 2019

Study design

There was a retrospective and descriptive study

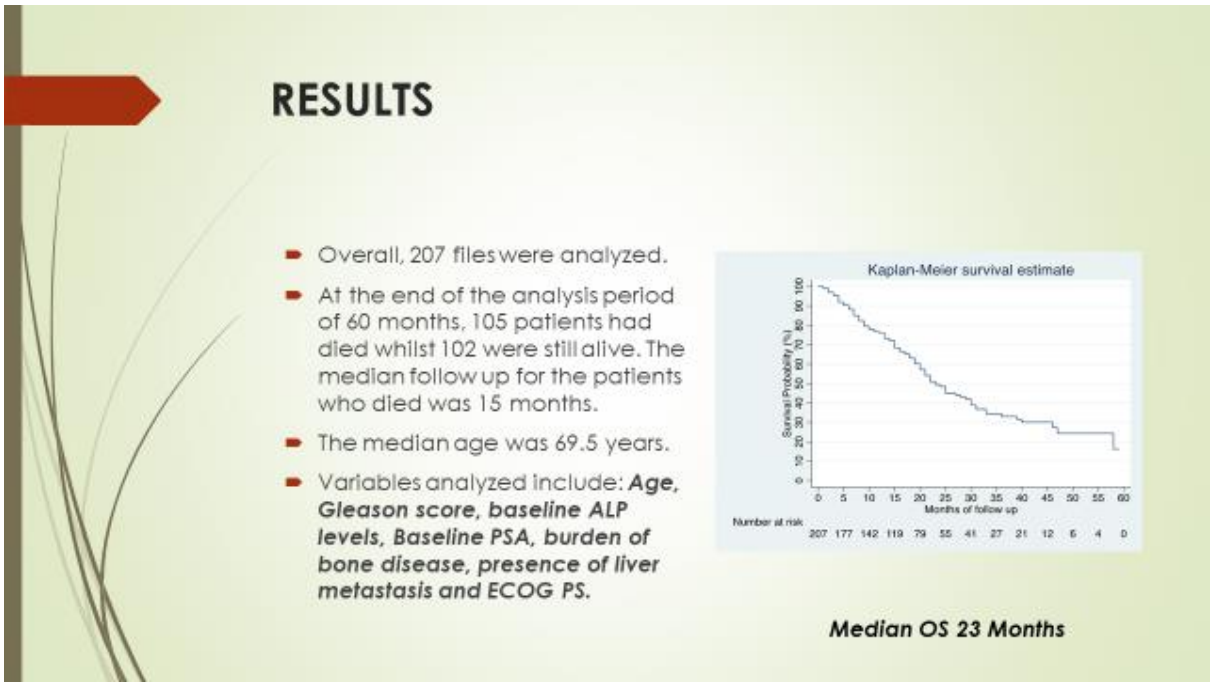
Study site

The study was conducted at The Nairobi Hospital Cancer Center. Files were obtained from the records department and from oncologists offices

Study population

The group of interest was patients diagnosed with stage 4 prostate cancer with histological and imaging studies documenting the same seen between January 2015 and December 2019

- Sample size calculation was based on a multivariable Cox proportional hazards model with several covariaties



Conclusion

- mPca provides a wide spectrum for risk of death from the disease
- this effort was an attempt to seek methods to predict the outcome accurately in individual patients
- A multi – institutional larger study to aid in formulating a prognostic model to define sub-groups of good, intermediate and poor prognosis for individualized patient care

- Study found that age, high Gleason Score and presence of >5bone metastasis has negative impact on survival

ONCOLOGY NURSING

TOPIC: EXPLORING THE DEVELOPMENT OF THE ADVANCED PRACTICE ONCOLOGY NURSE ROLE IN KENYA (VIRTUAL PRESENTATION)

SPEAKER: WINNIE WANJIRU

Background

An Advanced Practice Nurse (APN) is a registered nurse who has acquired the expert knowledge base, complex decision-making kills and clinical competencies for advanced practice, the characteristics of which are shaped by the context and/or country by which he/she is credentialed. A master's degree is recommended for entry- level. Sub specialization in various areas of interest such as child health, oncology, neonatology, critical care, midwifery etc.

Core competencies of APN include

- Clinical research
- Clinical leadership and
- Advanced clinical practice

In Kenya there is a dire shortage of nurses, with majority of highly trained nurse working in management and education positions than clinical practice areas

Method

A scoping review was conducted with search terms such as "Advanced Practice Nurse" "Oncology" "Sub Saharan Africa", "Nurse Practitioner". The

databases searched were Science Direct, PubMed, Google Scholar, Research4Life and hand searches from international council of Nurses.

The scope of the study on the APN role in Africa were Botswana, Ghana, kingdom of Eswatini, Malawi, Nigeria, Liberia, south Africa, Tanzania and Kenya. Of these, only the University School of Nursing and Midwifery in Kenya and the University of Cape Town South Africa have successfully implemented the APN program. Three Kenyan APNs have successfully completed the program through the UCT.

Challenges

The challenges were identified as:

- Lack of ownership
- Lack of legislation to regulate APN practice
- Inability to sustain the program
- Lack of licensure for APNs
- Lack of context-specific to Sub-Saharan Africa
- Lack of APN benchmark curricula

Conclusion

- There is growing evidence that highly trained nurses contribute significantly o better health outcomes
- Oncology nurse practitioners can effectively meet both the medical and nursing needs of patients by functioning in a collaborative model within the MDT in alignment with the legal regulations and licensure to practice in the region
- All African countries should work towards regulating advanced level of practice for nurses and midwives who can implement evidence-based practice and clinical leadership to improve job satisfaction and enhance career growth.

TOPIC: ESOPHAGEAL BRANCHYTHERAPY NURSING CONSIDERATIONS

SPEAKER: GEOFFREY MWANGI

Background

Esophageal cancer is a disease in which malignant (cancer) cells form in the tissues of the esophagus. It is the 8th most common cancer worldwide, besides being the 6th most common cause of cancer death. (GLOBALCAN 2020).

In Kenya, western and central have the highest prevalence rates of esophageal cases. It is more common in males than females. Smoking, heavy use of alcohol and Barrett esophagus can increase the risk of esophageal cancer.

Signs and symptoms of esophageal cancer are weight loss and painful or difficulty in swallowing.

Branchytherapy

This is the delivery of radiation therapy using sealed sources that are placed as close as possible to the site to be treated.

It is applicable for treatment of tumors where a radiation source can be placed within a body cavity e.g cervix, esophagus and prostate. It offers opportunity to deliver high localized dose of radiation to defined a area within the esophagus.

Dr. Mwangi listed the advantages and disadvantages of branchytherapy

Advantages:

- Dose of distribution around a radiation source achieves high concentration of dose immediately around the source and rapid fall of dose away from the source

- Accurate localization of the gross tumor volume and immobilization of the area to be treated.

Disadvantages:

- Needs skilled personnel to access tumor
- Complications
- Esophagitis
- Radiation pneumonitis
- Broncho esophageal fistula

The inclusion and exclusion criteria and nursing considerations were presented as shown in the charts below:

Inclusion criteria	Exclusion criteria
Biopsy-proved esophageal adenocarcinoma or squamous cell carcinoma	Concurrent chemotherapy at the time of brachytherapy treatments
Disease that can be encompassed in the radiotherapy treatment field	Tracheal or bronchial involvement
Women of childbearing potential must practice adequate contraception	Cervical esophagus location
Ability to understand and the willingness to sign a written informed consent document	Stenosis that cannot be bypassed or dilated to allow for applicator placement
	Not willing or unable to provide informed consent
	History of esophageal fistula

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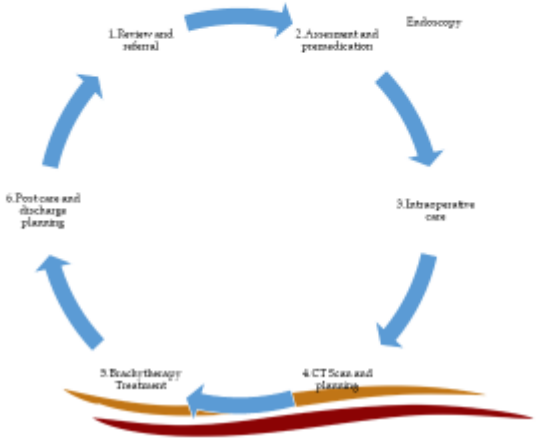
Nursing considerations



Findings

- According to the retrospective study of 19 patients treated in 2020 – 2022;
- Most of the patients are aged between 36-81 years with average age of 63.6
- Males from the sampled population were 13 (68%)
- Females from the sampled population were 6 (32%)

More findings of the study including gender demographics and staging are shown below:

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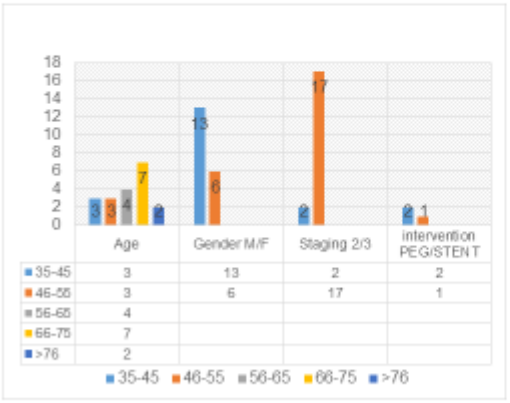
Findings



Discussion

- According to GLOBALCAN 2020, the number of males with CA esophagus were 9.3% and number of females were 3.6%, similar to this study
- In Kenya, 70-80% of cancer cases are diagnosed in late stage. In this particular study, 89% of the patients were in stage III
- Esophageal cancer is more common in people older than 60 years same as the findings of Cleveland Clinic
- Branchytherapy is preferred rather than stent or peg tube since it provides a long term relieve of dysphagia which explains why there were only 3 patients on these interventions
- Study shows there are no nurses trained on esophageal branchytherapy
- Despite lacking official training, all the nurses are knowledgeable and confident in esophageal branchytherapy and rotate around in the branchytherapy unit

Recommendations

- Early screening of patients with recurrent dysphagia and GERD at the community
- More training for nurses on esophageal branchtherapy

TOPIC: KNOWLEDGE ATTITUDE AND PRACTICE IN STOMA CARE AMONG STAFF NURSES AT KILIFI COUNTY REFERRAL HOSPITAL

SPEAKER: LILIAN SAIDI, BSc. NURSING, HIGHER DIP PALLIATIVE CARE NURSING/ STOMA WOUND AND CONTINENCE THERAPIST

"My motivation and interest in stoma care began the day I walked into a ward and found a patient covered in a pool of feces as his father and brother watching helplessly not knowing what to do" **Lilian Saidi**

Background

A stoma is a surgically created opening from the abdomen to the bowel or urinary tract to eliminate either bowel or bladder waste

Ostomy had become a common procedure as 3 surgeries were performed monthly

Statement of the Problem

Construction of a stoma has had an impact on the life of the affected individuals that extend beyond a change in their mode of evacuation. Poor stoma care leads to persistent daily patient distress leading to poor quality of life. Only 53 nurses were trained on stoma care in Africa.

The attainment of the Universal Health Coverage is to ensure every citizen has access to quality health care services without getting into financial difficulties or pushed to poverty.

Objectives of the study

Broad objective

- To assess knowledge, attitude and practice on stoma care among staff nurses at KCRH

Specific Objectives

- To determine knowledge gaps in stoma care among staff nurses at KCRH
- To assess attitude towards stoma care among nurses at KCRH
- To assess current practices on stoma care among staff nurses at KCRH
- To make recommendations to KCRH administration on how to improve stoma care

Significance of the Study

- This study aimed at assessing knowledge, attitude and practice gaps on stoma and its care hence improving the quality of life of patients and their families.
- To help policy makers and health care planners bring positive change on stoma care
- To contribute to the body of knowledge on this subject
- To act as a baseline for further studies

Methodology

- Descriptive cross-sectional survey design could remedy the situation and nurses drawn from all the nursing departments

- . A non-probability convenient sampling technique was used nurses on duty at the time of data collection were selected irrespective of their qualifications.
- . Sampling size was computed using Yamane (1967) formulae for cross-sectional study

Findings/ conclusion

- The study revealed poor knowledge score on stoma and its care of (35%).
- Average attitude score 70%.
- . (9%) staff nurses were trained on stoma care, (2 %) practice.
- Stoma care is a very important service to the patients/family, the staff nurses and the hospital.

Recommendations

- Policy makers should make clear policies and guidelines
- Hospital administration
- Stoma care in the annual work plan
- Organize trainings, workshops, continuous medical education, conferences
- Avail the necessary resources
- Provide supportive supervision

TOPIC: ONCOLOGY NURSING EDUCATION

SPEAKER: DR JUDITH AWINJA, DIRECTOR, NURSING AND MIDWIFERY SERVICES

Background

Globally, cancer causes more deaths than HIV, TB and Malaria combined. 70% of the global cancer burden is in LMICs like Kenya. 30% of cancers are curable if detected early. Cancer is ranked 3rd as the leading cause of death after infectious and cardiovascular conditions.

The rising incidence of cancer is not known but they may be from a combination of unhealthy dietary habits, consumption of tobacco and alcohol, and lack of physical exercise.

Barriers

Leading barriers in cancer control in Kenya is attributed to limited specialized human resource capacity and secondly, delayed presentation and a lack of awareness.

History of Oncology Nursing Education

- In the 1940s, nursing f people with cancer began to change with the introduction of oncolog6y nursing as a specialty in the United States and the creation of specialized education and training for oncology nurses.
- The period between 1950 and 1980 was a time of erratic, but fundamental change in every arena of nursing and The International Society of Nurses in Cancer Care (ISNCC) was founded in 1984 in conjunction with the first cancer nursing journal, in New York.
- In the late 70s and 80s, most nurses in Africa joined in the administration of chemotherapy through on-job trainings.

History of Oncology Nursing Education in Kenya

- The first oncology nursing education and training in Kenya started at the University of Nairobi in the year 2010, with Master in Science in Oncology Nursing (MScN) degree.

- Prior to this a few oncology nurses were trained outside the country but the majority learnt through the on-job training.
- In 2016, the higher national diploma training equivalent to post basic oncology nursing training was commenced
- Oncology nursing education in Kenya is accredited by the Nursing Council of Kenya.

Oncology Nursing in Kenya

- Nurses can play an important role in CA treatment delivery, symptoms and pain management and provide patients with information and much needed psychological support.
- The initiative to train at least 4 nurses per county and deploy continuum professional development course to ensure quality cancer patients' care was commended.
- Partners such as AMREF and Johnson & Johnson are supporting nurses in oncology education
- Currently, the NCK has registered only 193 oncology nurses- both from Higher National Diploma and Masters (159 HND; 34 Masters)
- Scope of practice for both HND and MScN Oncology are available at the NCK to guide and protect the oncology nursing practice at both levels
- Post basic graduates are known as Oncology Generalists, while Master level graduates are Oncology Nurse Specialists
- With the rapidly evolving nature of cancer care, highly skilled specialized oncology nurses to either provide clinical care or conduct research are needed to improve evidence- based practice.

- Most nurses working at the chemotherapy units are offered short courses on chemotherapy safety (Chemo-safe) training by various partners.
- Clear job description of specialized oncology nurses has been spelled out in the current scheme of service under review

Conclusion

- Very few oncology nurses in the country as compared to the data on cancer cases in Kenya
- Kenya National Cancer Control Strategy (NCSS, 2017-2022) reinforced the need to improve the human resources for cancer care
- Oncology training empowers nurses to provide high quality oncology through improved knowledge, increase confidence and updated nursing practice in line with global standard of cancer patients

Recommendations

- Increased cases of cancer call for a larger number of oncology nurses; there is need to train more nurses
- Training institutions should leverage on the NCCS to develop curriculums and initiate training
- A pool of specialized oncology nurses should be developed to enable them empower, educate and train a mass number of oncology nurses
- More research needs to be conducted in order to influence policies and practice around oncology nursing

FREE COMMUNICATION

NAIROBI WEST SPONSORED SESSION

TOPIC: THE ROLE OF BONE MARROW TRANSPLANTS WITH EMPHASIS ON MULTIPLE MYELOMA, THE NAIROBI WEST HOSPITAL EXPERIENCE

SPEAKER: DR. ANDREW KANYI GACHII, CONSULTANT PATHOLOGIST AND FORENSIC SPECIALIST NAIROBI WEST HOSPITAL

Background

Stem cell: population of undifferentiated cells which are able to divide for an indefinite period, to generate a functional progeny of highly specialized cells. There are two types of stem cells:

- Totipotent cells- from fusion of egg and sperm at 4-8 cell stage
- Pleuripotent (EG HSC) – they can divide and make identical copies of themselves over and over again (self renewal)

Hematopoietic Stem Cell Transplantation is a procedure where hematopoietic stem cells of any donor and/or any source are given to a recipient (patient) after eliminating the patient's own hematopoietic and immune system with intention of repopulating of replacing the hematopoietic system in total or in part. There are two types of transplants:

- Autologous BMT where patients receive their own stem cells
- Allogeneic BMT from related or unrelated donor fully matched haploidentical HSCT

The three possible sources of stem cells are

- Bone marrow
- Umbilical cord blood

- PBSC (Peripheral Blood Stem Cell) which is the most common source

Indication for Autograft

In which cases is a BMT prescribed?

- Solid tumors
- Neuroblastoma (HIGH RISK)
- Relapsed/ Refractory Germ Cell Tumor (GCT)
- Multiple Myeloma (Adults) and
- For all other illnesses, allogeneic SCT indicated

Transplant Process

- Recipient and donor evaluation
- Stem cell mobilization
- Stem cell collection
- Cryopreservation of stem cell
- Conditioning of patients
- Stem cell transfusion
- Recovery/ engraftment phase

Dr. Gachii highlighted on the importance of counselling to inform both donor and recipient of the complete procedure and possible complications that may arise such as Engraftment Failure, which is defined as a failure to achieve an absolute neutrophil count of > 200/mm3 by day +21 in Autologous transplant; or absolute neutrophil count of >500/mm3 without evidence of relapse by day +28 post transplant in case of allogenic transplant, irrespective of source of stem cells.

Post HSCT Follow up – 12 weeks includes

- Weekly visits on outpatient basis
- Monitoring levels and side effects of immunosuppression
- Weekly monitoring of LFT, RFT, Electrolytes, CBC
- Preemptive monitoring for viral reactivations
- Chimerism monitoring: day +30, +60, +90, + 6months
- Monitor of GVHD
- Personal hygiene – Neutropenic care and diet

Conclusion

HSCT is a curative option for many disorders both benign and malignant

There have been advances in treatment options like MUD haploidentical stem transplant

HSCT needs dedicated nursing care and a multidisciplinary team to prevent infections and other complications.

TOPIC: PREPARATIONS TOWARDS A SUCCESSFUL BONE MARROW TRANSPLANT PROGRAM IN THE THIRD WORLD – THE NAIROBI WEST EXPERIENCE

SPEAKER: DR KIBET P. SHIKUKU, MEDICAL PROJECTS & DEVELOPMENT MANAGER

Background

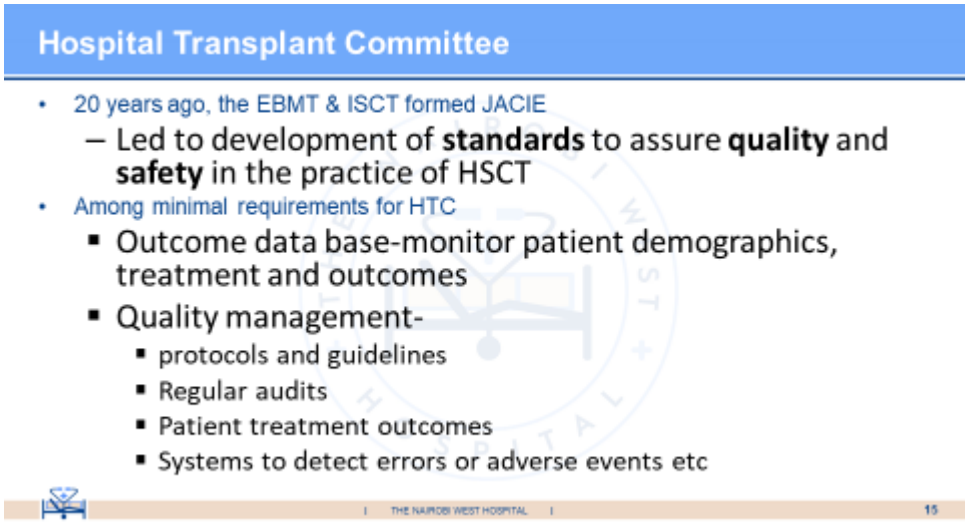
BMT has been in existence for over 60 years. Majority of those who have gone through BMT are outside the African continent. Kenya begun her journey to MBT 6 decades after the first BMT was done. The Bone Marrow Transplant (BMT) journey at the Nairobi West Hospital started 3 years ago and escalated in January 2022. The steering committee established the following needs towards conducting BMT

- Infrastructure
- Personnel
- Support including labs
- Licensing requirements
- Trainings
- Hospital transplant committee's Terms of References and
- Appointment letters
- Requirements for the BMT unit were:
- Efforts from experienced/ technical staff support consisting of
- Trained personnel
- Financial- funding was committed to by management of the hospital
- Legal: legal issues around BMT such as data policy posing challenges for the donor registry. How would data be protected/ what information did the donors need to have?
- Ethical: ethical issues such as who should be given priority for BMT? What was the criteria for selection?
- Institutional support: there was learning from India and Dubai where a lot of capacity building for the local team. The Nairobi West Hospital team also learned from Tanzania, which had done 11 BMTs.

Modes of donor management

- Log books
- Software – damu sasa
- Blood unit Management

Other identified requirements were captured in the following illustration



- The hospital was then able to put up a 6 bed BMT unit: 5 beds for adults and 1 paediatric and became the first hospital in the country to conduct BMT

TOPIC: THE RISKS AND TOXICANTS OF SMOKELESS TOBACCO , ARECA NUT AND KHAT AVAILABLE IN KENYA – KENYANS

CHOOSING ORAL AND NASAL TOXICANT PRODUCTS WITH HIGHER CANCER RISK

SPEAKER: DR. NICK MUTISYA

Background

Chewing tobacco, snuff, areca nut products and khat are the major legal smokeless psychopharmacologically active products in Kenya. The majority of SPPs consumed consumed in Kenya are locally produced, unregulated and unbranded with little or no quality control in terms of levels of toxicants or psychoactive ingredients. There are some branded smokeless tobaccos and areca products on the Kenyan market imported from India and there are epidiemological and toxicant data for some of them.

Objectives of the Study

- This report aimed to consolidate the limited information available on the types of SPPs used in Kenya and make recommendations for future work to clarify the toxicant levels and, hence, the health risks of Kenyan SPPs.

Methodology.

- A systematic review of individual scientific papers, this review has depended heavily on information in various monographs issued by the International Agency for Research on Cancer (IARC).
- Global Adult Tobacco Surveys (GATS), which represents household surveys of smoking and smokeless tobacco use on a country-by-country basis. Surveys of tobacco use include those for Kenya , India and Pakistan

Demographics of products used in Kenya:

- The 2014 Global Adult Tobacco Survey found that among males**, 3.9% use nasal snuff, 1.9% use local chewing tobacco, and 0.3% use imported chewing tobacco**. In contrast, chewing

tobacco (2.3%) was used more than nasal snuff (1.7%) among females.

- Among the urban respondents, **chewing tobacco (1.8%) was more prevalent than the use of oral snuff (1.0%). Rural respondents who used nasal snuff (3.7%) more than chewing tobacco (2.3%).**
- Other forms of tobacco use, such as shisha (water pipe), are much less common, and, in December 2017, the import, manufacture, and sale of shisha was banned by Kenya ministry of health.

Dr. Mutisya used data from a previous study of North America, Sweden, Norway, India and Pakistan to show the risk of oral, pharyngeal and esophageal cancers from the use of STPs

The Risks of oral, pharyngeal, and oesophageal cancers from the use of STPs.

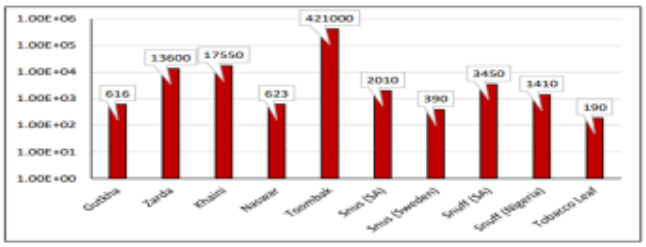
	Oral Cancer (36 studies)			**Pharyngeal Cancer (10 studies)**			**Oesophageal Cancer (13 studies)**		
	Odds Ratio, 95% CI		p	Odds Ratio, 95% CI		p	Odds Ratio, 95% CI		p
North America	0.95	0.70–1.28	0.81	1.59	0.84-3.01	0.15	1.20	0.10-14.4	0.89
Sweden	0.92	0.68-1.25	0.60	1.45	0.34-6.21	10^{-3}	1.26	1.02-1.56	0.03
Norway	1.10	0.50-2.42	0.81				1.40	0.61-3.21	0.43
India	5.32	3.53-8.02	$<10^{-5}$	2.60	1.76-3.85	$<10^{-5}$	2.57	2.20-3.00	$<10^{-5}$
Pakistan	14.5	7.69-27.4	$<10^{-5}$				8.20	2.45-27.5	$<6.10^{-4}$
Overall	3.94	2.70-5.76	$< 10^{-5}$	2.23	1.55-3.20	$<10^{-4}$	2.17	1.70-2.78	$< 10^{-5}$

Levels of nicotine in STPs was illustrated as shown in the following diagram

Nicotine levels in Kenyan STPs (NACADA 2014)

Product	Other names	No of samples	Nicotine (mg/g wwb)
Kuber (branded khaini)	Khaini	14	4.41
Other tobacco branded sachets	Khaini, gutkha	18	3.52
Ndovu	Formulated kuber/tamboo	22	3.49
Chavez	Snuff	22	3.95

- Nitrosamine level in STPs



Conclusion

- SPPs and Smokeless Tobacco Products (STPs) are many different products with different ingredients, different chemistries, and health risks.
- Globally, risks for oral cancer range from extremely low or negligible for Swedish snus, through very low for US chewing tobacco and moist snuff, to high for some Indian products such as khaini and gutkha, and Pakistani naswar, and to very high for Sudanese toombak.
- These risks correlate approximately with the levels of carcinogens, particularly the Tobacco Specific Nitrosamines (TSNAs), in the product.
- The risk is dependent on how the product is used, e.g., frequency of use, amount of product in each dose, and the length of time held in the mouth, as well as exposure to other risk factors such as tobacco smoking, alcohol, and human papilloma viruses.

Recommendations

- Carrying out an in-depth review of quantities and types of imported and locally produced STPs.
- Studying the ingredients used in different STPs.
- Performing toxicant and alkaloid analyses for all types of STP on the market.
- Initiating case-control studies to determine the health risks of using different types of STPs on the market.
- Monitoring for other drugs in local products to confirm anecdotal reports of STPs that have been spiked with illegal drugs.
- Lobby for the government to regulate all smokeless psychopharmacological products.

TOPIC: AFFORDABLE ACCESS TO BIOLOGICS, BIOSIMILAR OR BIOMIMICS?

SPEAKER: DR. WINNIE MWANGI, CLINICAL PHARMACIST (ONCOLOGY), KENYATTA UNIVERSITY TEACHING REFERRAL & RESEARCH HOSPITAL

Background

Biologic drugs play an important role in healthcare and represent $232billion in global revenue which is 25% of the total global pharmaceutical market. Costs of biologics remain high which limits access to patients especially in the low and middle income countries. The patent expiry of most reference products has ushered in the era of biosimilars with the promise of improved access to biologics.

Access to biologics in Africa

- An African survey on implementation of biosimilars carried out in October 2021 with respondents from 8 African countries showed that

67% of funding of biologics was by out of pocket payments by patients from the various institutions.

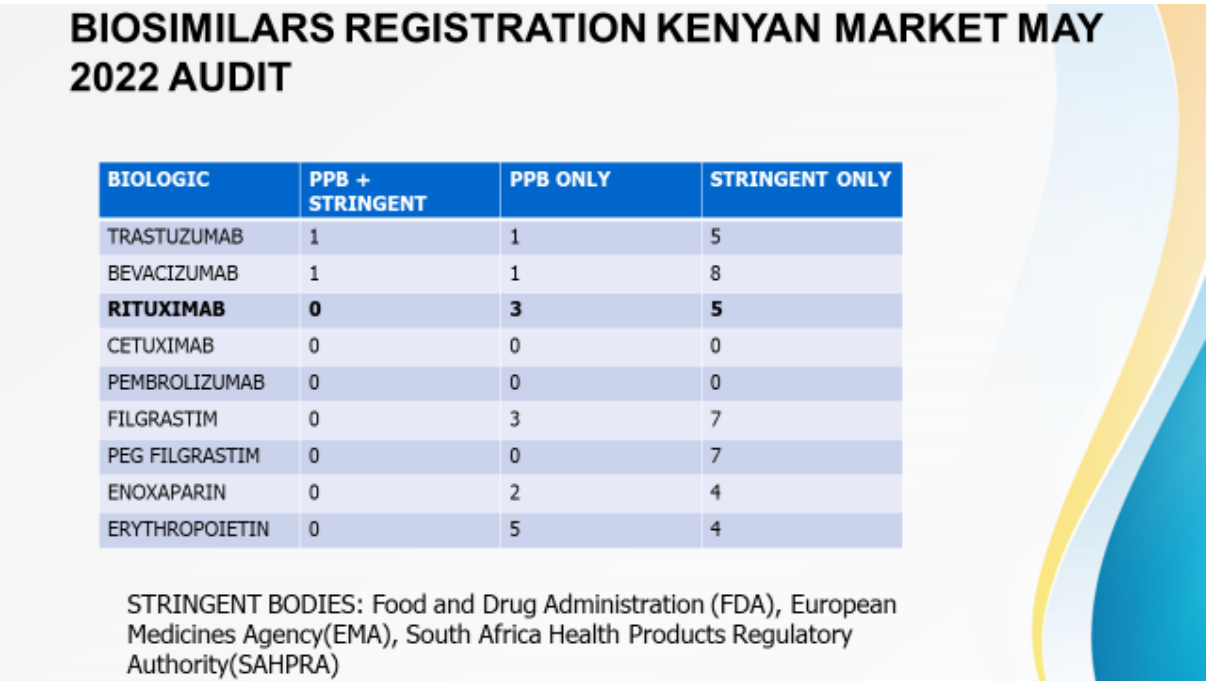
- 53% of the respondents in the survey indicated the lack of licensed products as a major challenge in the implementation of biosimilars.
- 25% of respondents indicated the availability of biomimics in their markets.

Definitions

A biosimilar is a bio therapeutic product which is highly similar in terms of quality, safety and efficacy to an already licensed originator product

Non comparable biologic/ biomimic is an intended replica medicines of bio therapeutic products that do not meet regulatory requirements of biosimilarity to the originator bio therapeutic product

WHO guidelines on Rationale and Current Regulatory Landscape



Conclusion

- The patent expiry of most reference products has ushered in the era of biosimilars.
- The availability of **biomimics in the regional markets** still remains a challenge, the use of which is **discouraged as per the ISOPP global position on use of biosimilars.**
- Selection of safe and effective biologics remains a challenge for institutions this calls for vigilance by practitioners in collaboration with pharmacists that their biologics in use are biosimilars.
- There is need for harmonization and stringent regulation on registration of biosimilars in the African market.

PLENARY SESSIONS DAY 3

TOPIC: FUNDAMENTALS AND GLOBAL CHALLENGES IN PRECISION ONCOLOGY

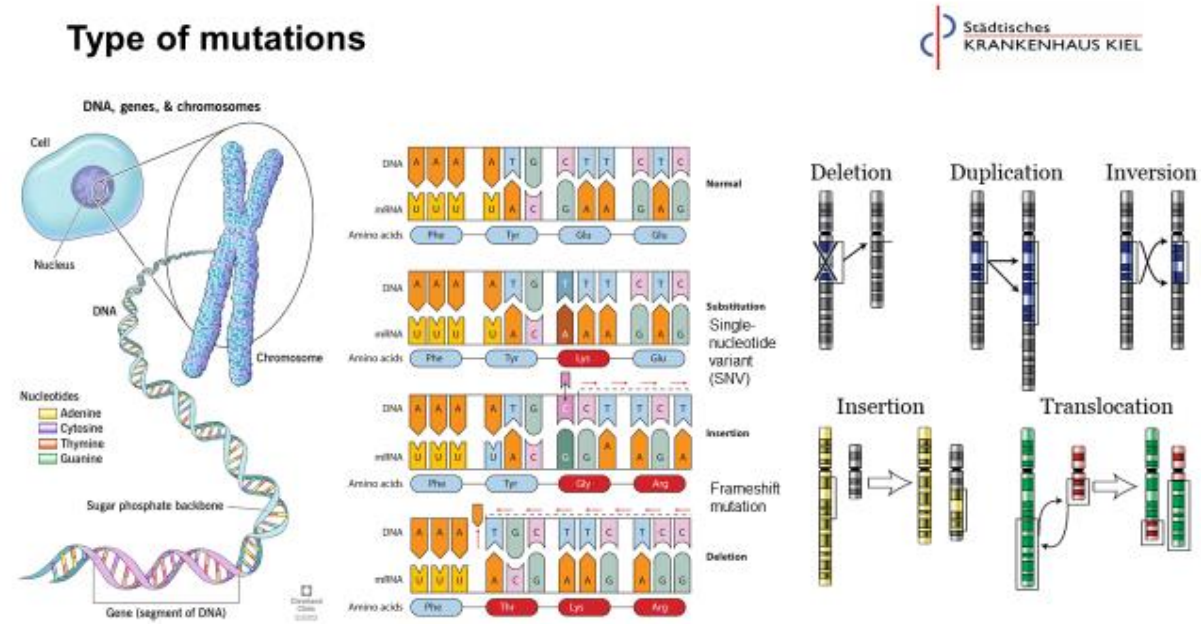
SPEAKER: PROF ROLAND REPP, DEPARTMENT OF HEMATOLOGY AND ONCOLOGY, STADTISCHES KRANKENHAUS KIEL, GERMANY

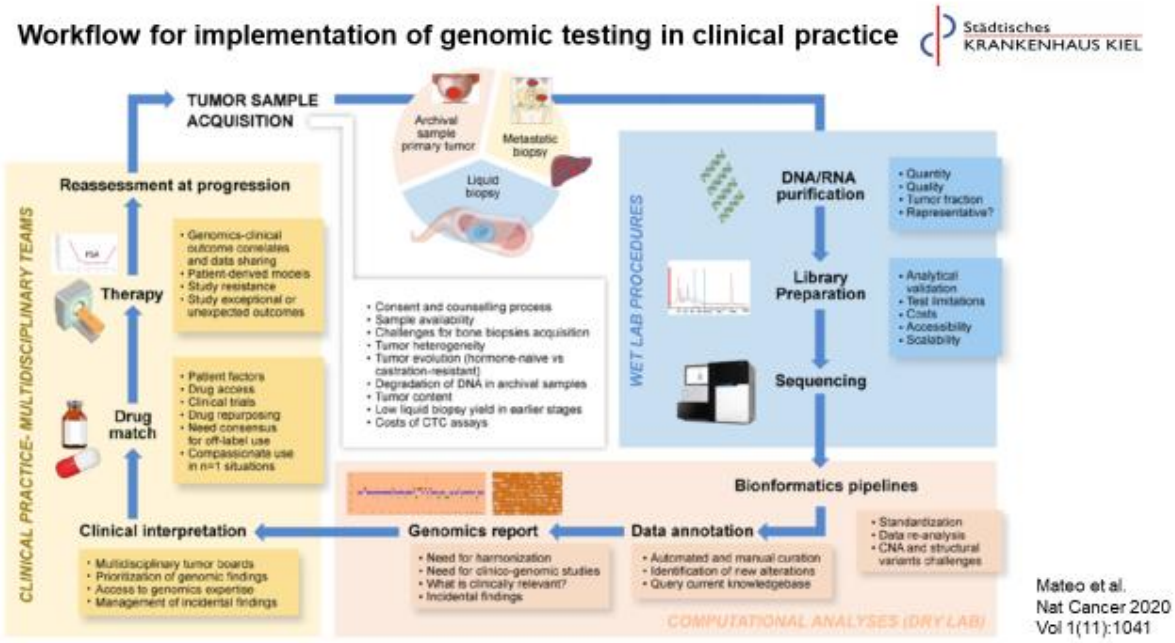
Background

Precision medicine is the personalization of medicine to suit a specific group of people or even an individual patient, based on genetic or molecular profiling. This can be done using genomic, transcriptomic, espigenomic or proteomic information.

Prof. Repp narrowed this to Presicion Oncology which he said is to tailir healthcare to each patient; the right treatment for the right patient at the right time based on a comprehensive molecular, cellular and functional analysis of each patient’s tumor.

The Professor demonstrated the different types of mutations and workflow for implementation of genomic testing in critical practice





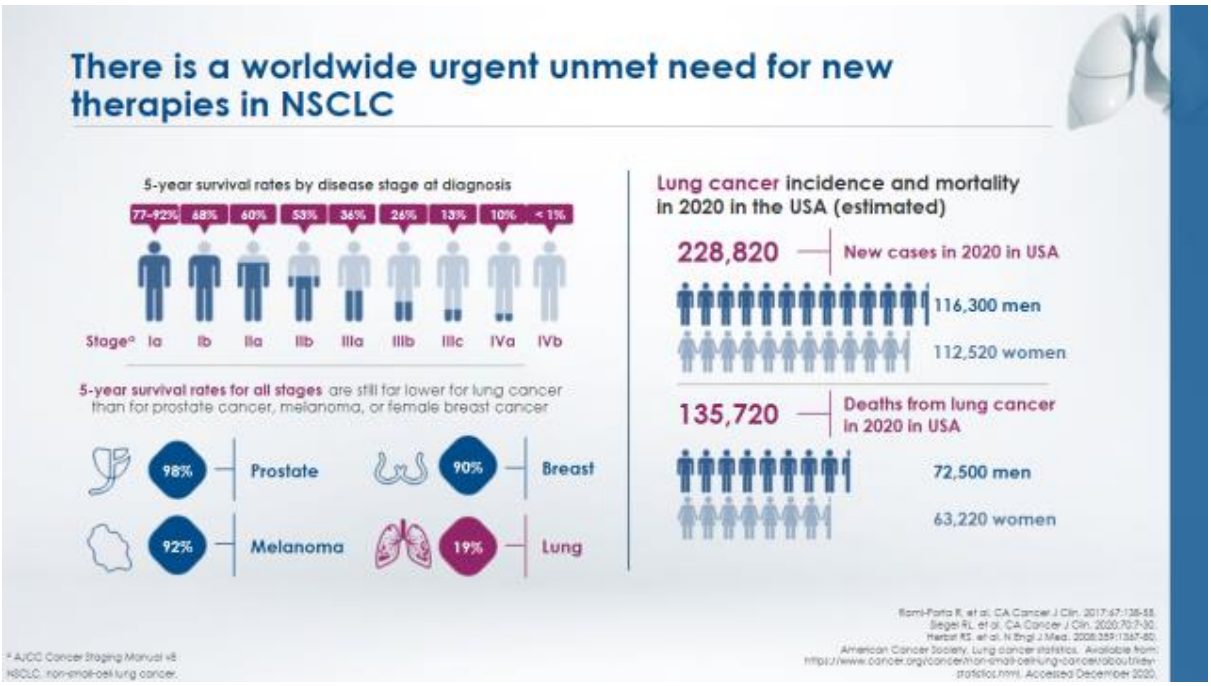
In order to make indvidual therapy decisions, it is helpful to discuss the collected data in a molecular tumor board which should be interdisciplinary and multiprofessional and must include specialists in molecular pathology, molecular biology and bioinformatics.

- **Future Perspectives for Precision Oncology**
- Liquid biopsy
- Multi-omic sequencing
- Third generation sequencing
- Artificial innteligence-enabled biomarker discovery and data analysis
- Innovative clinical trial design

Challenges

One of the major challenges in Precision onclology is cost. Precision oncology is costly and does not benefit all cancer patients.

There is also a worldwide urgent and unmet need for new therapies in NSCLC



Opportunities

Genetic characterization of tumors is made possible by the development of new diagnostic methods such as next generation sequencing and in

certain indications, offers treatment approaches that directly or indirectly influence functionally relevant tumor-specific target molecules or signalling pathways and in this way prevent cancer cells from growing.

Conclusion

Significant obstacles must be overcome before larger groups of cancer patients can even have the chance of improved treatment, a better quality of life and possibly, a cure. These challenges are not scientific in nature and will not be solved by research teams in high tech laboratories, but must be addressed though concerted efforts of policymakers at the national and international levels.

In order to drive the appeal of new, targeted drugs, access to clinical trials is crucial and necessary to significantly improve the conditions for conducting clinical trials in African countries.

It is critically important to consider the tradeoff between precision oncology costs and health benefits.

TOPIC: PRESICION RADIOTHERAPY (VIRTUAL PRESENTATION)

SPEAKER: MARY GASOPODAROWICZ, MD, FRCPC, FRCR (Hon.)

Prof. Gaspodarowicz began with reflections of developments and advancements of the field of radiotherapy; how the practice was very different in the 70s when there were no CT scans, MRIs, PETs, and no tumor markers to the technological and medical advancements today with Precision Radiotherapy

Radiation Therapy (RT) is a powerful component of the cancer treatment armaentarium. Over 50% of all cancer patients derive benefit from radiotherapy. The advances in imaging, computing and robotics over the last three decaded have allowed unprecedented accuracy and precision in radiotherapy targeting and dose delivery

What are the challenges?

- Reduced margins which run the risk of marginal failure
- Potential for increase in late complications if RT id not placed very accurately
- Increased tocicity large dose per fraction if not applied accurately

What are the opportunities?

- This is an online guided system
- Guided intervention and delivery
- Radiation dosage light can be landed right at the specific target
- Improved local tumor control
- Previously technically untreatable conditions can be treated

Modern PRT Practice

- This has brought about new technologies such as IMRT, IGRT, molecular and guided RT
- Improved opportunities for interventions of conditions such as
    - Oligometastatic disease
    - Aggressive management of recurrent cancers
- Increasing demand
- Pressure on human resources

Next Steps

Prof. Gaspodarowicz underscored the need for a change in conversations as we embrace new technologies. For instance

Stop Saying

- Radiotherapy is expensive
- It is complicated
- It is unaffordable
- There is lack of equipment

Start Saying

- It is the best buy for cancer treatment
- It can be simplified
- It is cost effective
- New centres can be built

Conclusion

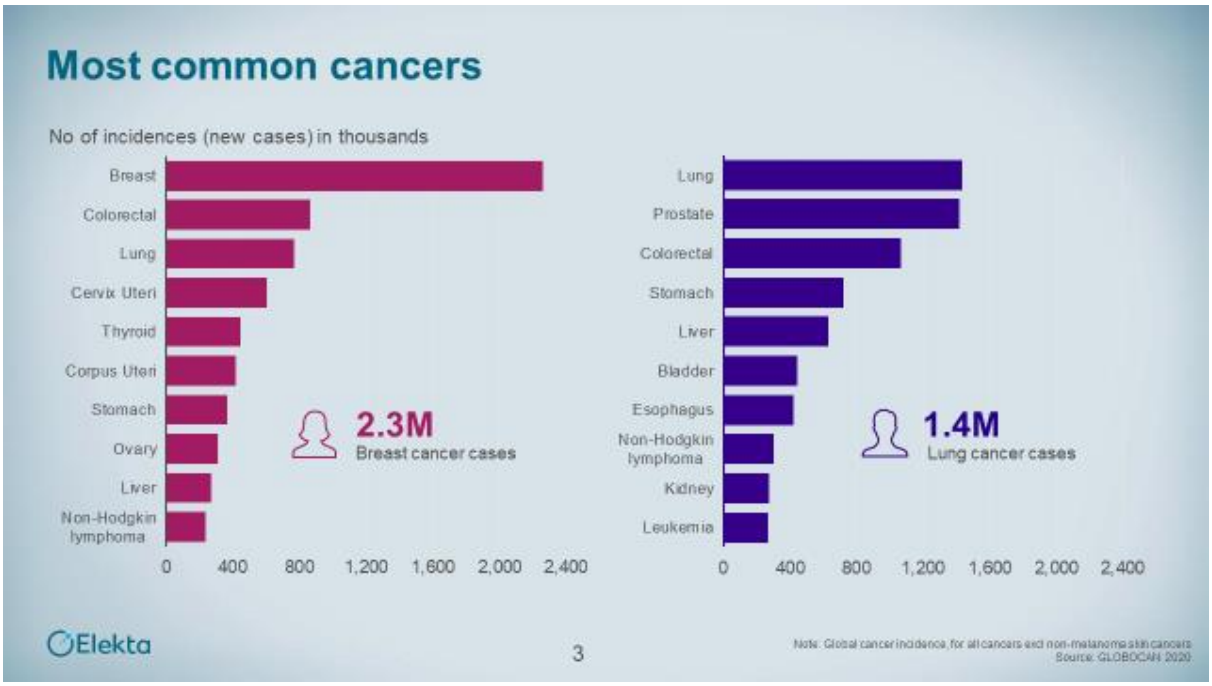
- To create a future of RT possibilities we must embrace the progress in technology and biology.
- Engage in broader sphere of health care and cancer control
- Training must include all relevant professions required to provide high quality RT, preferably based on inter and trans-professional education
- Access to the best available tools will ot only help expand the access to radiotherapy but also allow access to the best quality RT to close the equity gap within and between countries.

TOPIC: NEW TECHNOLOGIES IN RADIATION THERAPY

SPEAKER: OZGUR TEMEL MSc, MEDICAL PHYSICS EXPERT, ONCOLOGY SALES MANAGER/ SSA

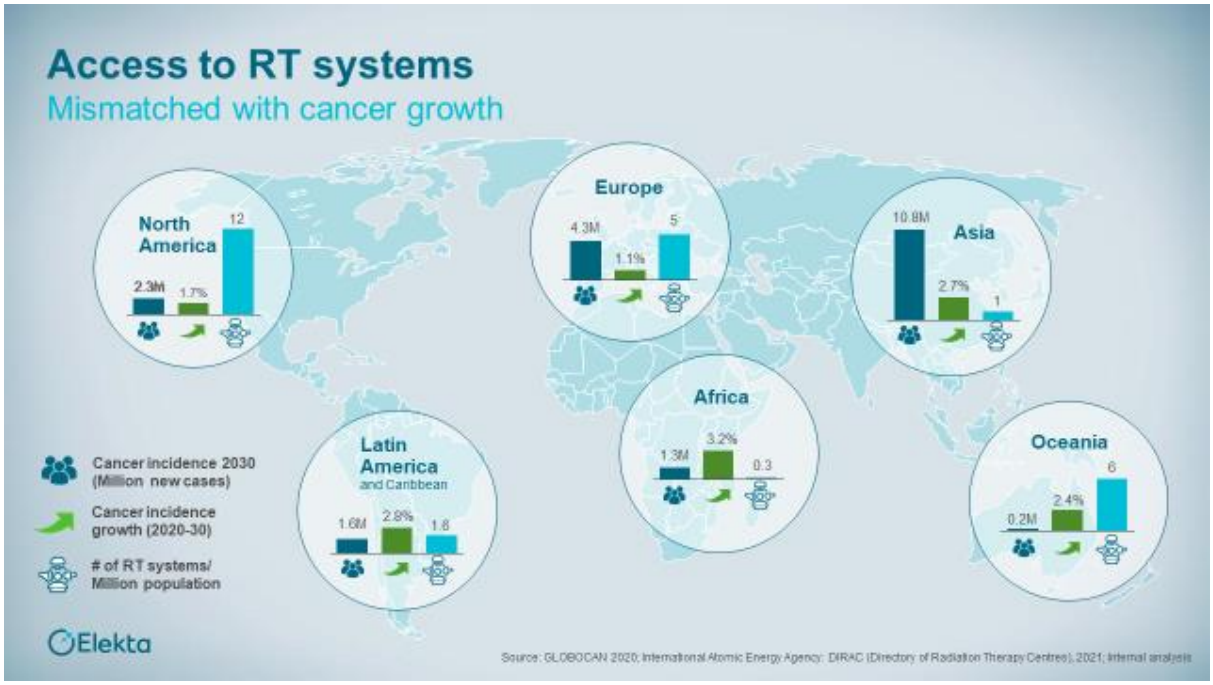
Background

Global cancer incidence is growing at 2% per year, outpacing overall population growth. By the year 2030, there will be 5 million new cancer patients every year and over 10 million new cancer cases per year by 2040. New cancer cases will grow twice as fast as population, increasing the share of people getting diagnosed with cancer.

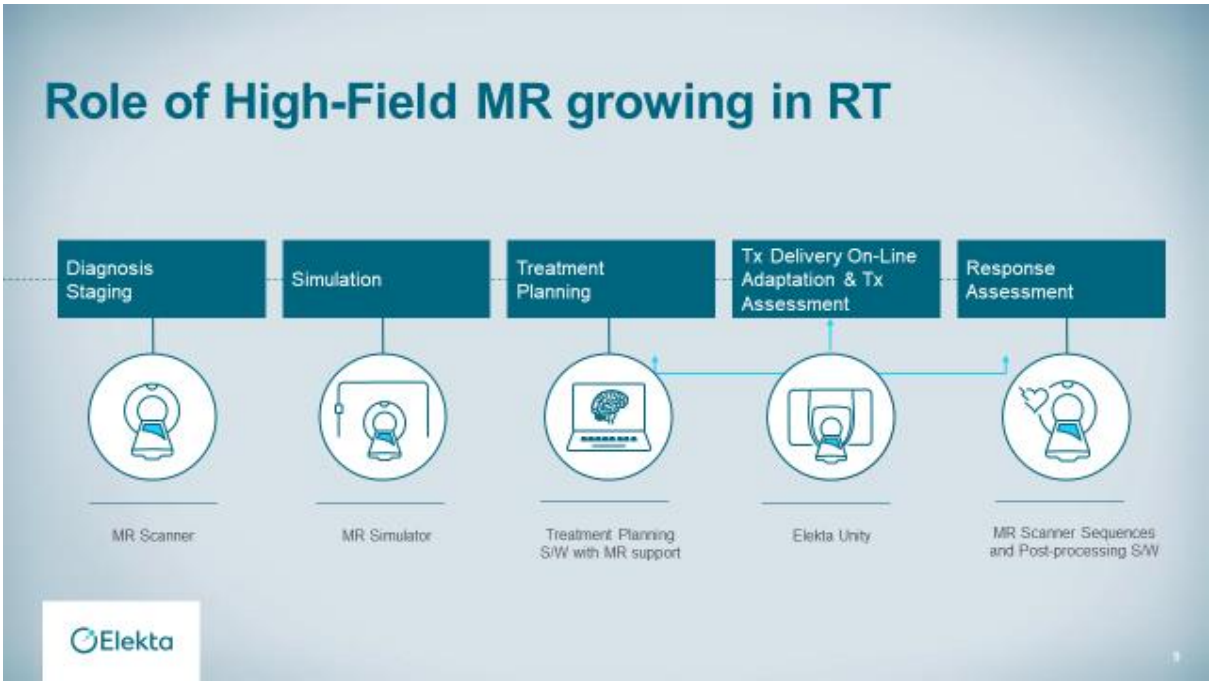
- 

- Radiation therapy remains critical but underutilized in many places. More than 50% of cancer patients would benefit from radiation therapy but only 30% receive it. 7% of cancer budgets in European countries is allocated to radiation therapy. 70% of global Radiation Therapy equipment services are accessible to only 25% of the world’s population. This indicates that access to RT systems remains

mismatched with cancer growth



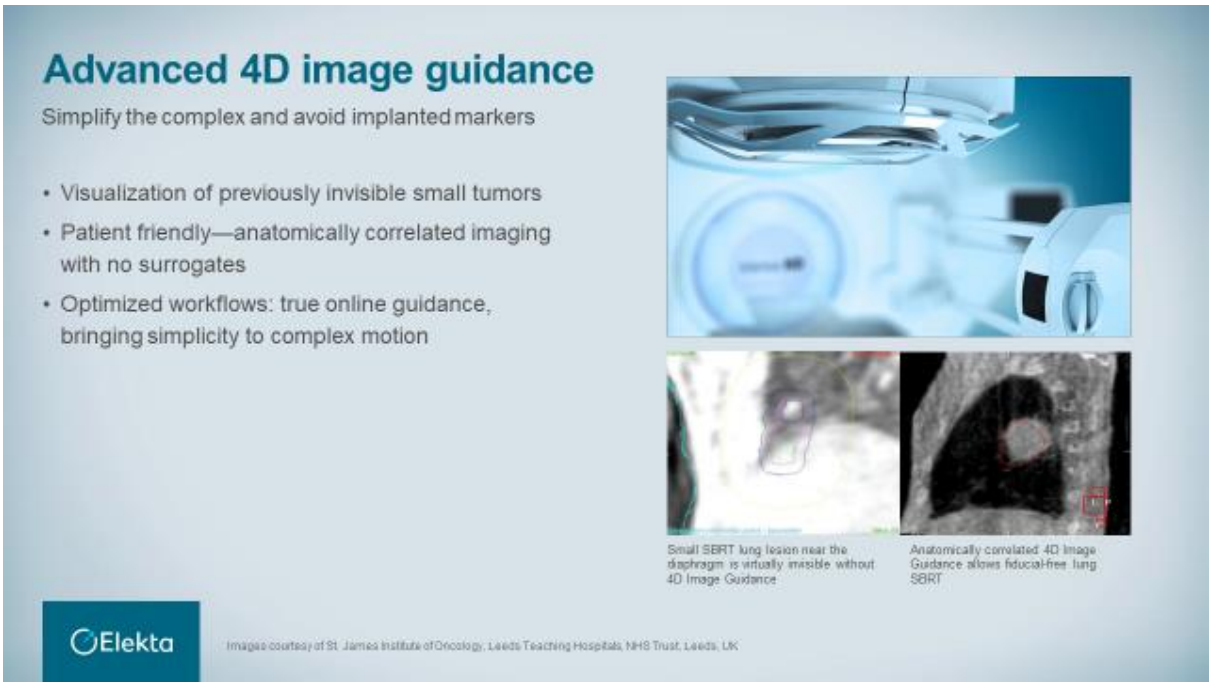
- **Role of High- Field MR growing in RT**
- Today, the challenges of radiotherapy are addressed using MR technology throughout every stage, except during treatment. MR is used in more than 80% of the cases to diagnose cancer, it is used increasingly in simulation and planning and most commonly used after treatment to assess response.
- Ozgur informed the conference that Elekta is now bringing a high quality MR that expands to the domains of online adaptive radiotherapy and online functional assessment.



Why MR/RT?

- To be able to see clearly and visualize soft tissue, reduce PTV and ITV margins, improve treatment delivery and reduce total treatment times and fractions
- To be able to track and manage motion in all directions, which will eventually help spare OAR toxicity and improve overall local control
- To continuously adapt and optimize the plan based on the new geometric and dosimetric information that's observed and
- To characterize the tumor's functionality and biology and adapt the treatment plan accordingly
- **Global Healthcare trends**
- There is a trend towards more targeted treatments. With the increase in the use of these complex techniques such as SRS and SRBT, the number of decision points in the planning and treatment process is set to increase 20 fold in the next 10 years

- Ozgur pointed out that Elekta is looking at how their solutions can simplify processes to ease the burden on clinicians and physicists, while ensuring a positive impact on patients.
- **Advanced 4D image guidance**
- Ozgur presented a case study of lung SBRT cases from St. James' Institute of Oncology in Leeds, to show how the Versa HD 4D image guidance allowed what was previously an invisible lung lesion to be seen



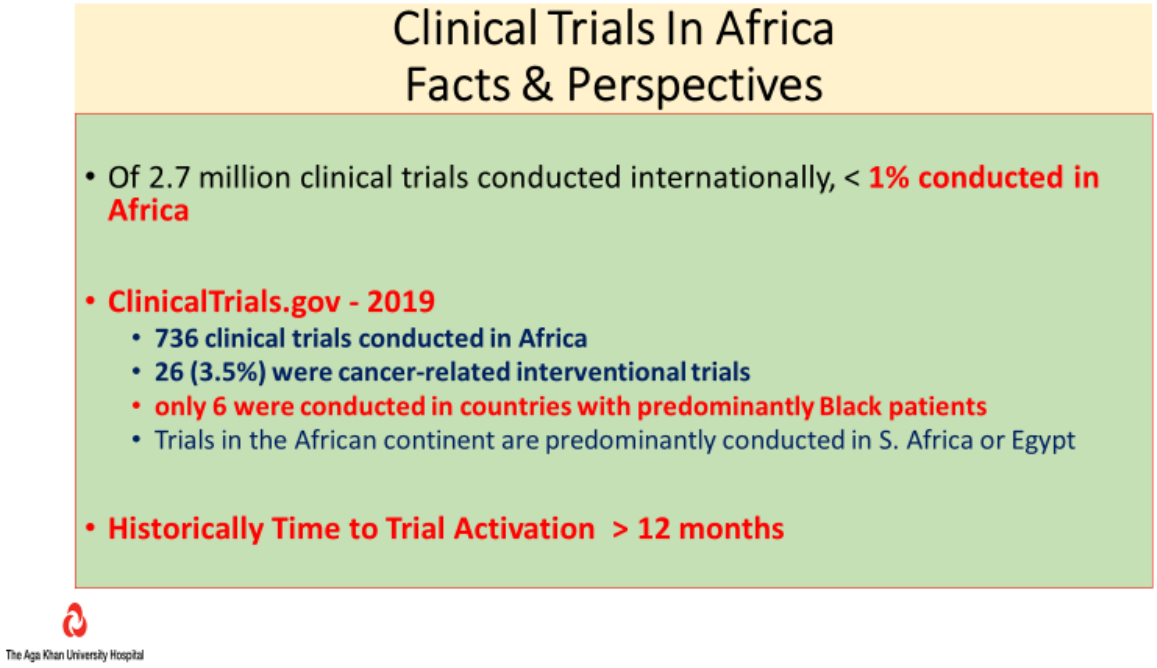
From his presentation, the beauty of this technology is that it allows patients to be treated during free breathing, which is more efficient and comfortable for the patient than gated of breath hold treatments. Free breathing, where appropriate, allows 100% beam utilization (as opposed to switching on and off as for gated treatments) for greater efficiency and faster overall treatments.

TOPIC: ESTABLISHING A CANCER CLINICAL RESEARCH PROGRAM IN SUB SAHARAN AFRICA

SPEAKER: PROF. MANSOOR SALEH- FOUNDING DIRECTOR AKU CANCER CENTRE

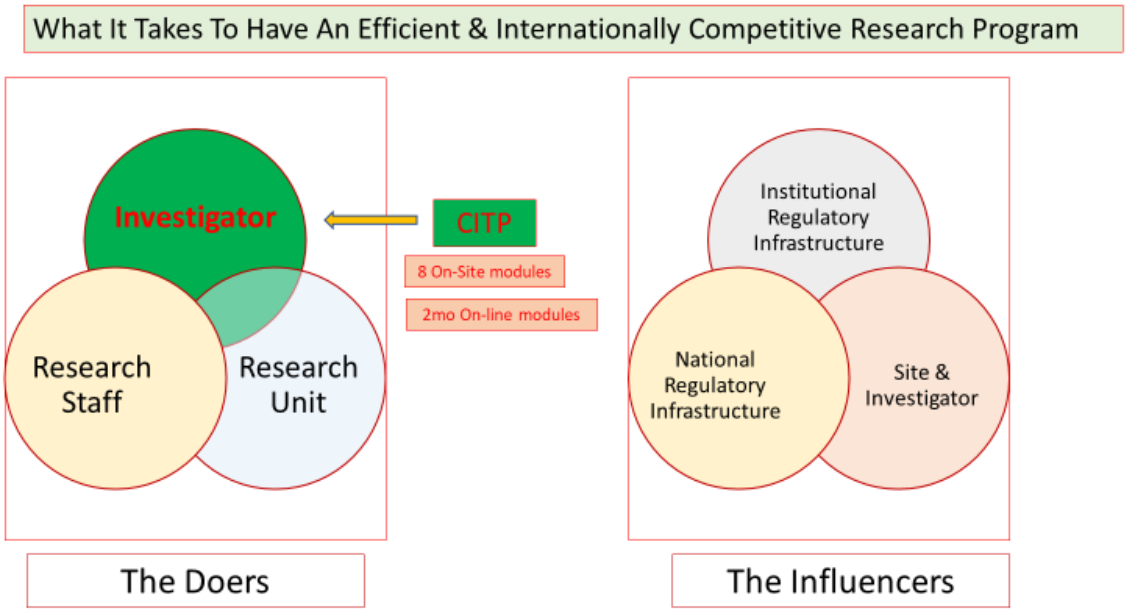
Background

Prof. Mansoor Saleh gave a brief history of the Heart and Cancer Centre at the Aga Khan University hospital. He then went ahead to give a scenario of the state of clinical trials in 2019 revealing that out of 2.7 million clinical trials conducted internationally only 1% are done in Africa. He gave an example of the USA where a TTA is 30 days while in Africa and Kenya specifically it takes 12 months. We have to improve that. "*We have to have a program and team that can do these trials within 3 months. Time to trial activation needs to be shorter.* "

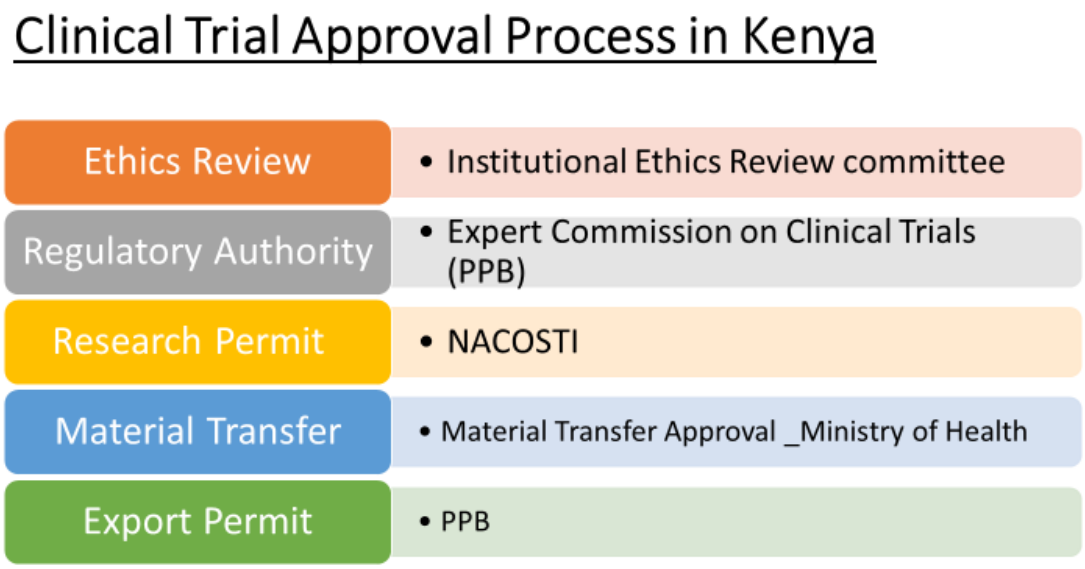


Dr. Saleh emphasized the importance of being part of the global clinical trials network saying patients will have access to novel therapeutic agents and countries will have an opportunity to contribute to global knowledge.

"The key to ensuring that we are competitive in the Clinical Trials arena is a short TTA."



Dr. Saleh highlighted the requirements and process of conducting research in Kenya.



Conclusion

Dr. Saleh reiterated the need to educate the next generation by identifying what should be done to participate in clinical trials. "Are we different than the west? I do believe our patients are different than in other regions. In any clinical trial the weakest link is a physician and strongest link the nurse." He concluded.

TOPIC: CHOOSING CLINICAL TRIALS WISELY: WHAT IS THE BEST CONTROL ARM FOR CANCER RCTs IN LMICs?

BISHAL GYAWALI, MD, PhD- MEDICAL ONCOLOGIST AND AN ASSOCIATE PROFESSOR IN MEDICAL ONCOLOGY AND PUBLIC HEALTH SCIENCES AT QUEEN'S UNIVERSITY

Background

"We all know that cancer problem is a growing problem in low and middle income countries in the world. There is no doubt about that. Although LMICs are going to have a big burden of cancer, the number of trials

going on in LMICs is pretty low. Most trials are done in high income countries." Dr. Bishal Gyawali.

Dr. Gyawali showed participants data from a study that found out that only 13 trials, which were less than a 1% with total participants of 982. The same study showed that over 80% of the trials were from high income countries. What this shows is that almost all the evidence present on how to treat NCDs like cancer comes from HICs.

Participation in Clinical Trials: A Way of improving Access

- LMICs cannot afford to not make cancer control their priority policy agenda because
- Effective policy is data- driven policy
- Data comes through research and trials
- Clinical research and clinical trials should be priorities in LMICs

Dr. Gyawali however cautioned that ***"all trials are not equal"*** emphasizing therefore on the need to choose trials wisely.

Is the control arm appropriate?

A control arm is inappropriate if it is:

- Using a control arm that is already proven inferior in previous RCTs
- Not allowing an effective drug (treatment of physician of choice but they don't allow the use of the specific drug)
- Using a placebo or ineffective drug instead of active or effective comparator

Who Will Control the Control Arm?

The inferior control arm has become a common problem especially in trials that are being run in LMICs. When this issue was raised there were those who felt that because t5hese trials were done in LMICs, at least

some patients got access to the new drug; does that not then make the trial ethical? Dr Bishal's response was that this is not ethical for two reasons:

- The Helsinki Declaration states BEST standard of care, not LOCAL standard of care and
- Most importantly, there is no guarantee of continued access to treatment after the trial is complete for other patients

A paper titled ***Evaluation of Drug Trials in High, Middle and Low income Countries and Local Commercial Availability of Newly Approved Drugs*** found that there was 0% availability of newly approved drugs in LMICs within 1 year of approval and only 22% availability within 5 years of approval, compared to 13% availability in HICs within a year of approval of new drugs and 46% within 5 years of approval.

Appropriateness of the Control Arm does not end when the trial ends

Dr Bishal posed the question "what happens after the trial ends?" The therapies the patients getting after the trials are just as important as the therapies they are getting during the trial.

How frequent are these problematic trials?

Dr. Bishal stated that there has been a systematic study of the same; it is not a couple of trials that are the problem. Looking at approvals by the FDA and the clinical trials that led to those approvals showed that almost 25% RCTs had a substandard control arm and 14% had errors in crossover; yet these were approved trials y FDA which means that just because a drug was approved by the US FDA did not automatically mean that the trial was rightly done.

What can be done moving forward?

Opportunities for trial development

- Clinical trials, including those conducted in LMICs should meet the following criteria of feasibility and post-trial utility:
- They should address a question of important clinical need in the society of that particular country
- The unmet clinical need should e backed by good evidence
- They should assess interventions that could be cost-effective and straightforward to apply if found efficacious
- They should be easy to conduct within the standards settings of care

Can locally developed me-too drugs aid price negotiations?

Dr. Bishal's thoughts were that if LMICs have developed a local me-too drug then that can lead to price negotiations and lower the cost of the drug, which he said would be helpful. He gave the example of cancer therapies in China that have resulted in price reduction of drugs.

Conclusion

Dr Bishal concluded his presentation with a call for cancer groundshot: going global before going to the moon- a philosophy whereby patients should have access to the proven treatments. If patients are not having access to the already proven treatments like radiotherapy and basic chemotherapy it does not make sense to talk about not having access to advanced treatments such as immunotherapy

Bottom line

Clinical trials are important and necessary. However the key questions before conducting trials should be

- How to do right and appropriate groundshot type trials
- What investment is required?

- Is it a priorit6y in a local setting?
    - No point in LMICs doing a phase 1 trial of a cancer drug whose phase 3 will be run elsewhere, approved elsewhere and will be unaffordable

TOPIC: PROSTATE CANCER RADIOTHERAPY EVOLUTION: THE PAST PRESENT AND THE FUTURE

SPEAKER: PROF. MACK ROACH, PROFESSOR RADIATION ONCOLOGY AND UROLOGY- UNIVERSITY OF CARLIFONIA SAN FRANCISCO (UCSF)

Background

Prof. Mack Roach in his presentation delivered virtually gave a history of prostate cancer treatment using radiotherapy. He said Radiotherapy has been used to manage prostate cancer for more than 100 years. *"There is more data to support its use in clinical trials than surgery. The first form of radiotherapy used brachytherapy which is the use of radioactive seeds and in the 60s the linear accelerator was pioneered in the US and the technology became standard care. By the 80s investigators from the University of Michigan had designed the first FDA approved 3D planning system which allowed a beams eye view that made it possible to reconstruct the anatomy in three dimensions using CT scans."*

Prof. Roach also highlighted 14 studies he has been involved in the last 30 years ranging from *Defining ideal margins for 3DCRT* done in 1993 to *The Phoenix Definition developed in 2006* which he said continues to be used as the definition of biochemical failure after radiation. He also shared views on what he believes is in the future for radiotherapy.

Future of radiotherapy involves;

Particles (Protons, carbon)

Predictive markers (e,g AI)'Flash

Grid, spatially fractionated radiotherapy

Other "new biology"

Conclusion and recommendations

Stereotatic Heavy Ions vs Protons vs Photons (SHIPP) is an ongoing research project.

Cancer research is dominated by drugs.

Biological spectrum of radiation is extremely broad and has been minimally explored.

Radiation is extremely cost effective.

There is tremendous potential for radiation to get better, faster and safer.

TOPIC: IN DEPTH ROLE OF MEDIA IN RELAYING INFORMATION TO THE PUBLIC

SPEAKER: DR. GILBERT MORGAN

Background

Social media has provided a great tool for the community of professionals and the masses to interact with each other globally.

Dr. Gilbert Morgan while also using the new media platforms to present virtually during the 7th Edition of Kenya International Conference on Cancer said, Social Media is important to him as an oncologist because it allows him to interact with other oncologists across the globe.

Well Facebook and Twitter have a combined subscription in billions which means a great number of people can pass their messages to the masses using the platforms.

Dr. Morgan said that the medical fraternity was able to get information affecting various groups of people during the COVID-19 pandemic outbreak on Social Media.

"But we have to be very careful on what we say and how we say it because the people we serve are also watching and reading what we discuss on the platforms," Dr. Morgan said.

Conclusions

- Social media can allow us to increase our knowledge and share information with our peers.
- Doctor engagement is increasing on Social Media.
- Education is now only a click away.
- Synergy+ Network=Success
- Go far, Go together

Take Home Message

- Social media in oncology allows us to grow education, everybody has something to contribute. If you want your opinions and voice and research to be heard this is the perfect platform for you to use.

KESHO MENTORSHIP PROGRAM

SPEAKER: MOHAMMED EZZI, CHAIR, KESHO EDUCATION AND TRAINING SUB-COMMITTEE

Introduction

Mentorship is a developmental relationship that serves a cornerstone of professional development and career satisfaction.

Mentorship is critical to the professional development of our colleagues.

Good mentorship is guiding and steering others towards the paths of success.

Self- motivation is the hallmark of the successful mentee.

KESHO MENTORSHIP SURVEY

75% are NOT in any mentor- mentee program

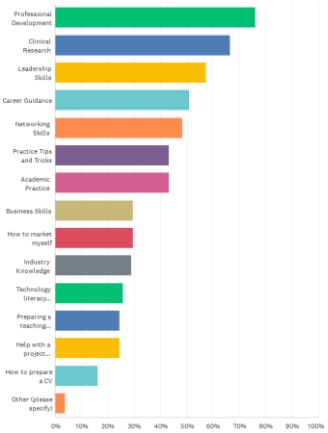
96% are interested in participating in a mentorship program

65% want a well- defined, time specific, relationship with outlined goals and objectives and defined interactions

80% responded that mentorship will help them to excel

AREAS OF INTEREST

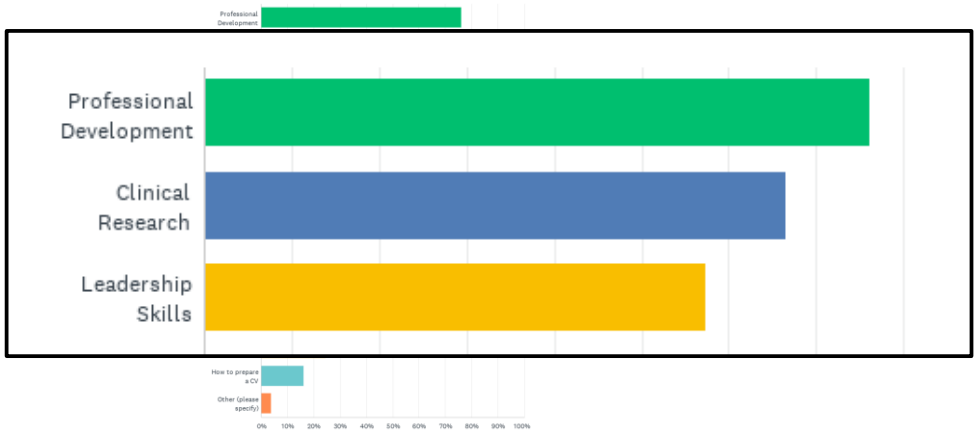
Q17 As a Mentee, please describe what area(s) of professional development you would like to explore in the Mentor / Mentee relationship?



KESHO
Kenya Society of Haematology & Oncology

AREAS OF INTEREST

Q17 As a Mentee, please describe what area(s) of professional development you would like to explore in the Mentor / Mentee relationship?



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HIGHLIGHTS

- One year mentorship
- Twice yearly matching (2 cohorts per year)
- Compatible matching – interest, preference, skillset
- Interspersed training, modules, webinars
- Dynamic – mentee can become future mentors

MEET OUR MENTORS (COHORT 1)

ABDI HAKIM MOHAMED
SURGICAL ONCOLOGIST

ANDREW ODHIAMBO
MEDICAL ONCOLOGIST

ANGELA MCLIGEYO
MEDICAL ONCOLOGIST

ANNE MWIRIGI
CLINICAL HEMATOLOGIST

BENDA KITAHAKA
HEALTH ADVOCATE

CATHERINE NYONGESA
CLINCAL ONCOLOGIST

DEBORAH OMEDDO
PEDIATRIC ONCOLOGIST

ESTHER NAFULA
PALLIATIVE CARE SPECIALIST

KESHO
Kenya Society of Haematology & Oncology

MEET OUR MENTORS (COHORT 1)

FATMA ABDALLAH
HEMATO-PATHOLOGIST

GITOBU MBURUGU
UROLOGIST

GLADWELL KIARIE
MEDICAL ONCOLOGIST

GLADYS NDUKU
PALLIATIVE NURSE SPECIALIST

HELENA MUSAU
CLINICAL ONCOLOGIST

JOHN WERU
PALLIATIVE CARE SPECIALIST

KHADIJA WARFA
GYNAECOLOGICAL ONCOLOGIST

MACKULINE OTIENO
PALLIATIVE NURSE SPECIALIST

KESHO
Kenya Society of Haematology & Oncology

MEET OUR MENTORS (COHORT 1)

MATILDA ONGONDI
CLINICAL HEMATOLOGIST

MIRIAM MUTEBI
SURGICAL ONCOLOGIST

NAZIK HAMMAD
MEDICAL ONCOLOGIST

NJOKI NJIRAINI
CLINICAL ONCOLOGIST

PETER OYIRO
MEDICAL ONCOLOGIST

ROHIT RADIA
MEDICAL ONCOLOGIST

SARAH MUMA
PEDIATRIC ONCOLOGIST

ZIPPORAH ALI
PALLIATIVE CARE SPECIALIST

KESHO
Kenya Society of Haematology & Oncology

Mentorship is a two-way street that requires clear expectations on both the mentee and mentor's parts, open communication, dedication and feedback along the journey.

OFFICIAL CLOSING CEREMONY

TOPIC: ROLE OF COUNTY GOVERNMENTS IN ADVANCING CANCER CARE

SPEAKER: PROF. ANYANG' NYONG'O, KISUMU COUNTY GOVERNOR

Kisumu Governor Professor Anyang' Nyong'o in his keynote speech on the implications of cancer across the country said funding health services was a priority in his devolved unit and that he was keen on upgrading and expanding the cancer infrastructure in the lakeside City of Kisumu.

Ladies and gentlemen

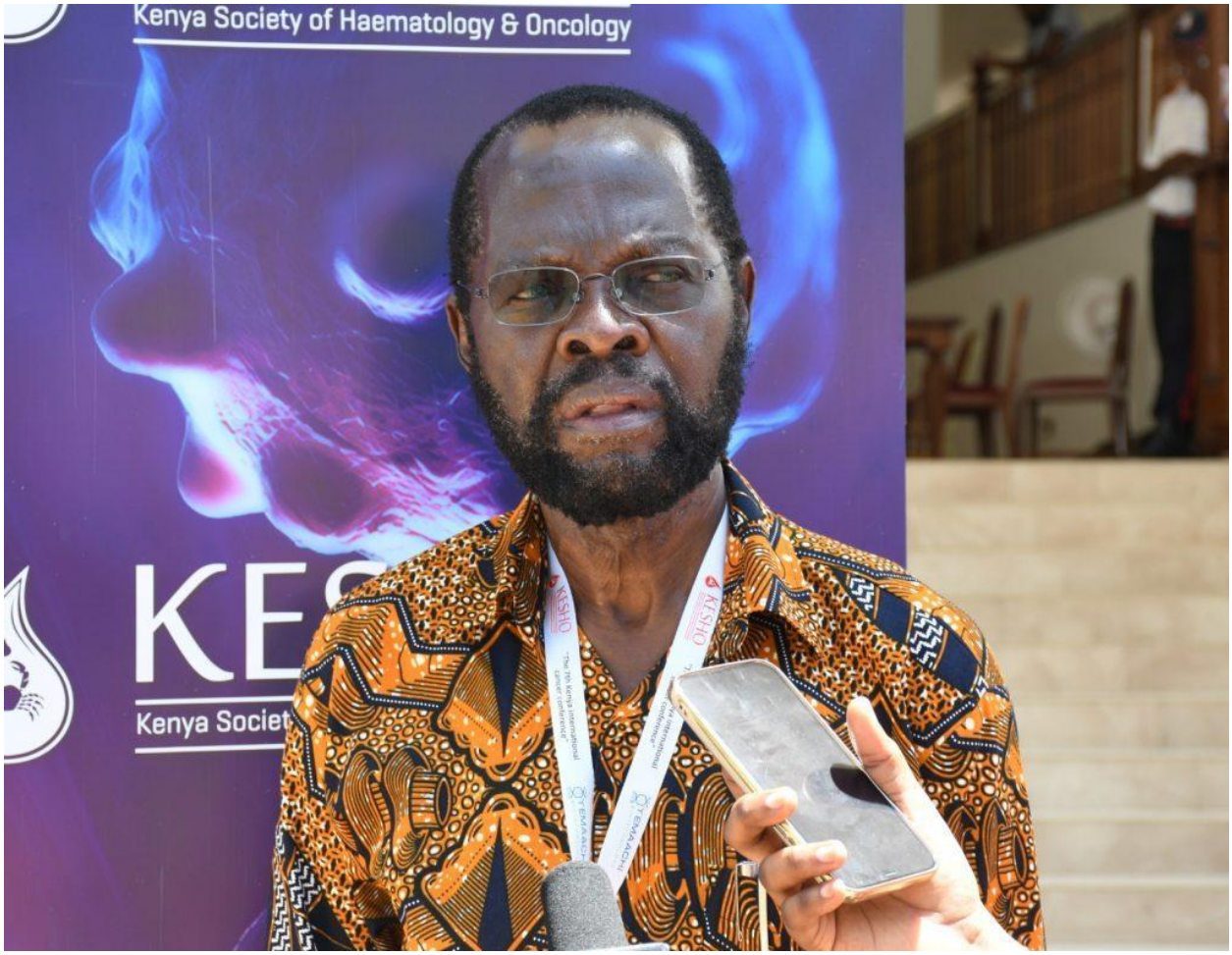
"Thank you for the invitation and opportunity to talk on a topic that is very dear to me for many reasons at a personal and a leadership level."

"As I begin, let me state that worldwide, substantial gains have been made in economic growth, health, and living standards in the past century. The East African Region for example witnessed a dramatic increase in life from 51 years in 2005 to 61 years in 2016, a progress that comes with new challenges of growing burden of non-communicable diseases such as high blood pressure, diabetes and cancers.

Notwithstanding, the burden of communicable diseases such as HIV/AIDS, Malaria and Tuberculosis; have remained stubbornly high. This is why the World Health Organization (WHO) and other organizations are concerned about the integration of cancer prevention, early detection, treatment and palliative care within the context of prevention and control activities at the level of national and local governments."

Prof. Nyong'o pledged to support initiatives aimed at ring-fencing a dedicated fund for research on cancer, at the Council of Governors level as well as other platforms he serves.

He challenged the medical care givers, oncology experts and supportive staff to push the agenda for increased finances to primary healthcare and preventive initiatives both at the county and national governments level.



"The cancer figures at the county level are so huge when compared to the meager resources allocated for attending to them. In fact, infrastructure and human resources are the key challenges faced by counties in their fight against cancer," the Kisumu County Governor said. "Given the projection of cancer numbers, we should all support counties in putting in place infrastructure for cancer screening and other early detection measures."

Prof. Nyong'o challenged Kisumu County residents and Kenyans at large to embrace cancer screening to help in the war against cancer.

According to him, men are not good communicators and they should be targeted in their spaces in order to drum up messages about cancer.

He challenged stakeholders to change their approach to cancer screening to places where the targeted are. “If you are targeting men, for instance, why can’t you do such things [cancer screening] in bars and football pitches,” he posed.

The government has been expanding cancer infrastructure at the National Referral Hospitals and decentralizing radiotherapy services to regional cancer centres to expand availability and access to quality, affordable diagnostic, treatment and palliative cancer care services.

With regards to the National Hospital Insurance Fund-NHIF, he reiterated the need for the national healthcare provider to put much emphasis on awareness and prevention of cancer rather than focusing on treatment.

Currently, chemotherapy and surgical services are offered at 11 regional cancer centres in Kisumu, Mombasa, Nakuru, Meru, Nyeri, Embu, Garissa, Bomet, Machakos, Kakamega and Makueni.

In Kenya, cancer currently accounts for 10% of all disease mortalities, with over 42,000 new cancer cases and 28,000 deaths reported annually.

AWARD CEREMONY FOR ABSTRACT COMPETITION WINNERS

FACILITATOR: DR MOHAMMED EZZI

A total of 130 entries were received.

BEST POSTERS

1. Dr Karen Mbaabu - Malignant Melanoma in the breast, an unusual presentation

2. Dr Mary Wangai - Comparing patient related factors with choice of cancer treatment Centre in Kenya or abroad

3. Dr Carol Kinyua - Outcome of patients with Nasopharyngeal carcinoma treated with chemoradiotherapy

BEST ORAL ABSTRACTS

1. Wakarima Weru - RTT, TNH - Role of PET in RT and Post excision of Keloid RT

2.Edith Kandie - MBChB V, KU - Prevalence, mortality and risk factors of cancers in Karatina

3. Wangari Kinyanjui - MBCHB V, UoN - Warrior Glow, a supportive care initiative for cancer patients by medical students