35TH ASCOMOS PENANG 2024

Annual Scientific Congress of Malaysian Oncological Society

ABSTRACT BOOK

Bridging The Gap:
Where Science Meets Reality

Malaysian Oncological Society

The Ideal: Comprehensive Oncological Care of the Future- taking a wider view on improving care and outcomes.

Yeoh Kheng Wei

NCCN Guidelines for Hodgkin Lymphoma V.1.2021 – Annual 08/18/20

Guideline Page and Request	Panel Discussion/References	Institution Vote			
		YES	NO	ABSTAIN	ABSENT
HODG-3/HODG-4 Internal request: Comment to consider simplifying the treatment algorithms for early stage classic Hodgkin Lymphoma (CHL).	The panel consensus supported the revisions to the algorithms for early stage favorable and unfavorable CHL.	25	0	0	6
HODG-3/HODG-4/HODG-C Internal request: Comment to consider the removal of Stanford V as a primary treatment option for stage I-II favorable and unfavorable (non-bulky) CHL.	The panel consensus supported the removal of Stanford V as a primary treatment option for stage I-II favorable and unfavorable (non-bulky) CHL.	25	0	0	6

HODG-4 Internal request: Comment to consider the removal of escalated BEACOPP as a primary treatment option for stage I-II (non-bulky) CHL, if GHSG HD14 unfavorable.	The panel consensus supported the removal of escalated BEACOPP as a primary treatment option for stage I-II (non bulky) CHL, if GHSG HD14 unfavorable.	25	0	0	6

NCCN Guidelines for Hodgkin Lymphoma V.1.2021 – Annual 08/18/20

Guideline Page and Request	Panel Discussion/References	Institution Vote			
		YES	NO	ABSTAIN	ABSENT
HODG-11 Internal request: Comment to consider the removal of allotransplant as a category 3 additional therapy option for select patients with relapsed/refractory disease following second-line systemic therapy.	The panel consensus supported the removal of allotransplant as an additional therapy option for select patients with relapsed/refractory disease following second line systemic therapy. The panel consensus supported the continued inclusion of allogeneic transplant as an option to consider for Deauville 5 after second-line systemic therapy, if response to additional therapy with RT or subsequent systemic therapy +/- RT.	16	3	3	9

HODG-C (3 of 5)/HODG-E External request: Submission from Merck & CO., Inc., to request the inclusion of the updated dosing recommendations for pembrolizumab, either 200 mg every 3 weeks or 400 mg every 6 weeks administered as a 30-minute intravenous (IV) infusion until disease progression, unacceptable toxicity, or up to 24 months for the treatment of adult patients with CHL.	Based on a review of the data and discussion, the panel consensus did not support the addition of these specific recommendations in the Guideline. See Submission for references.	0	25	0	6
HODG-C (3 of 5) External request: Submission from Merck & Co., Inc., for pembrolizumab to be added as a category 2A second-line therapy option for eligible adult patients with relapsed or refractory classical Hodgkin lymphoma that have relapsed post autologous stem cell transplant (SCT) or are ineligible for autologous SCT.	Based on a review of the data, and discussion, the panel consensus was to add pembrolizumab as a second-line therapy option for relapsed/refractory CHL, for patients not candidates for transplant. References: Chen R, Zinzani PL, Fanale MA, et al. Phase II study of the efficacy and safety of pembrolizumab for relapsed/refractory classic Hodgkin lymphoma. J Clin Oncol 2017;35(19):2125-2132. • Kuruvilla J, Ramchandren R, Santoro A, et al. KEYNOTE 204: Randomized, open-label, phase III study of pembrolizumab (pembro) versus brentuximab vedotin (BV) in relapsed or refractory	25	0	0	6

	classic Hodgkin lymphoma (R/R cHL). Journal of Clinical Oncology 2020;38:8005-8005.				

NCCN Guidelines for Hodgkin Lymphoma V.1.2021 – Annual 08/18/20

Guideline Page and Request	Panel Discussion/References	Institution Vote			
		YES	NO	ABSTAIN	ABSENT
HODG-C (3 of 5) Internal request: Comment to consider adding the following second-line systemic therapy options for relapsed/refractory nodular lymphocyte predominant Hodgkin lymphoma (NLPHL): • Rituximab (R)-Bendamustine • R-CHOP • R-ABVD • R-CVP	Based on a review of the data, and discussion, the panel consensus was to include the following second-line systemic therapy options for relapsed/refractory NLPHL: • R-Bendamustine • R-CHOP (if not previously used) • R-ABVD (if not previously used) • R-CVP (if not previously used) References: Prusila REI, Haapasaari KM, Marin K, et al. R-Bendamustine in the treatment of nodular lymphocyte-predominant Hodgkin lymphoma. Acta Oncol 2018;57:1265-1267. Fanale MA, Cheah CY, Rich A, et al. Encouraging activity for R-CHOP in advanced stage nodular lymphocyte-predominant Hodgkin	25	0	0	6

	lymphoma. Blood 2017;130:472- 477. Advani RH, Hoppe RT. How I treat nodular lymphocyte predominant Hodgkin lymphoma. Blood 2013;122 (26):4182- 4188. • Shankar A, Hall GW, Gorde-Grosjean S, et al. Treatment outcome after low intensity chemotherapy [CVP] in children and adolescents with early stage nodular lymphocyte predominant Hodgkin's lymphoma - an Anglo-French collaborative report. Eur J Cancer 2012;48:1700-1706.				
HODG-E (1 of 2) Internal request: Comment to consider the removal of VEPEMB (vinblastine, cyclophosphamide, prednisolone, procarbazine, etoposide, mitoxantrone, and bleomycin) as an option for older adults (age >60) with stage I-II favorable CHL, I-II unfavorable CHL, and stage III-IV CHL.	The panel consensus was to remove of VEPEMB as an option for older adults (age >60) with stage I-II favorable CHL, I-II unfavorable CHL, and stage III-IV CHL due to limited clinical use in this setting.	25	0	0	6

NCCN Guidelines for Hodgkin Lymphoma V.1.2021 – Annual 08/18/20

Guideline Page and Request	Panel Discussion/References	Institution Vote			
		YES	NO	ABSTAIN	ABSENT

HODG-E (1 of 2) Internal request: Comment to consider the removal of PVAG (prednisone, vinblastine, doxorubicin, and gemcitabine) as an option for older adults (age >60) with stage I-II unfavorable CHL, and stage III-IV CHL.	The panel consensus was to remove of PVAG as an option for older adults (age >60) with stage I-II unfavorable CHL, and stage III-IV CHL due to limited clinical use in this setting.	25	0	0	6

Thailand: Cancer Drug Reimbursement in Thailand: Current Landscape and Future Directions.

Chittawan Poonsiri, Thailand

Cancer remains one of the leading causes of death globally. Over recent decades, significant advancements have been made in the development and approval of cancer therapies, including targeted treatments, immunotherapy, and gene therapy. While these innovations have demonstrated improved efficacy and safety, the costs associated with research and development are substantial, often resulting in high market prices. As a consequence, access to these potentially life-saving treatments remains limited for many individuals, despite their effectiveness.

In Thailand, the inclusion of medical technologies in benefit packages is determined through a rigorous evaluation process that takes into account multiple criteria. Key considerations include the burden of disease within the population, the efficacy and effectiveness of the technology in addressing the health condition, and its cost-effectiveness, which assesses the balance between the technology's benefits and its financial implications. Furthermore, health equity is a critical factor, ensuring that technologies are accessible to all segments of the population, particularly marginalized groups. These criteria work in tandem to guide decisions that promote both the sustainability of healthcare systems and the equitable distribution of medical advancements.

Health Technology Assessment (HTA) plays an important role in this process, particularly when it comes to high-cost cancer treatments. HTA has been used to evaluate whether these therapies provide good value for money, ensuring the sustainability of healthcare system. However, despite the essential role of HTA in improving access to cancer care, the process faces significant challenges, such as managing the high costs of innovation while maintaining equity. We are actively working with key stakeholders to address these challenges and ensure that all patients, regardless of their financial status, can access to this cutting-edge cancer therapies.

Malaysia: Where Do We Stand In Malaysia, In Term Of Drug Affordability And National Cancer Drug Reimbursement System?

Mastura Md Yusof

Healthcare in Malaysia is largely subsidized treatment by Ministry of Health treatment facilities. Malaysia spent only 4.38% of its GDP on health care in 2021 and the reported total expenditure on cancer care of about 14 % of the overall health-care budget was among the lowest in the Asia Pacific region.

For cancer, out-of-pocket expenses, private health insurance and employer-sponsored health insurance at private health care facilities are increasingly utilised which may burden the affected patients. The rising cost of innovator treatments, complex and delayed drug approval process for drugs that provide clinically meaningful benefits to patients and inconsistent reimbursement processes as a result of limited regulatory oversight are amongst hurdles compromising drug affordability and access. Cancer care is expensive everywhere in the world but undoubtedly unequitable or non-existent access to optimal cancer care exist in Malaysia and major reform is necessary.

ONCOLOGY TRAINING - What do we need for the future?

Rachel Cooper, United Kingdom

Oncology is one of the most rapidly developing medical specialities. Advances in technology, computing power and artificial intelligence have resulted in a proliferation of new radiotherapy techniques. In parallel a deeper understanding of the molecular biology of cancer has led to an ever-increasing list of systemic anti-cancer therapy (SACT). The latter, coupled with Whole Gene Sequencing opens up the possibility of personalised treatments. All new skills, capabilities and knowledge that need to be considered during training.

However, despite this there are some fundamentals skills, that remain unchanged. Decision making adapted to the evidence and patient. The ability to communicate with patients but also fellow professionals. Understanding resource constraints and how to advocate for the patients we care for whilst still seeing the bigger picture. And finally, nurturing the ability to learn, adapt and apply skills and knowledge throughout their career to ensure there is life-long enthusiasm for learning.

In this address I hope to stimulate some thoughts about how we balance and adapt training for the new knowledge required but maintain the basic skills of an oncologist.

National Postgraduate Medical Curriculum - Training for the Nation.

Marniza Bt Saad

Master of Clinical Oncology (MCO) programme by the Universiti Malaya began in 2002 as the inaugural local training programme for Clinical Oncology in Malaysia. Since its inception, the overall number of oncologists in Malaysia has increased by more than five-fold, from just over 30 in 2002 to almost 180 currently, with more than half of the total number being made up by graduates from the programme. As we strive to increase the number, we have a duty to ensure quality of training is enhanced. The National Postgraduate Medical Curriculum (NPMC) was officially launched on 26th August 2021. It aims to unify training, improve quality and standards, and streamline postgraduate specialist training throughout Malaysia. The NPMC Clinical Oncology incorporates both MCO and Fellowship of the Royal College of Radiologists (FRCR) examinations in a unified training pathway. The mission is to produce clinical oncologists who are competent to deliver quality and safe care to patients with cancer. The integration of both MCO and FRCR pathways pulls together not only the training pathways but also the resources to build capacity and strength with a shared vision of providing productive and effective training for the nation.

Early Lung Cancer

Lung Cancer Screening & Smoking Cessation.

Liam Chong Kin

The majority of patients with lung cancer are diagnosed at advanced stages, resulting in an overall 5-year survival of less than 20%. Low-dose computed tomography (LDCT) screening for lung cancer in people at high risk of developing this malignancy helps to identify the disease in earlier stages, enabling curative treatment. Large randomised controlled trials, the US National Lung Screening Trial (NLST) and the Dutch-Belgian Randomised Lung Cancer Screening Trial (NELSON) confirm the value of LDCT screening in reducing lung cancer mortality among high-risk individuals. In contrast to symptom-detected lung cancers, 63% of CT-screen-detected lung cancers in the NLST was stage I. The NLST showed a 20% reduction in lung cancer mortality rate in the LDCT-screened group compared to controls while in the NELSON study, LDCT screening resulted in a 26% reduction in lung cancer deaths in asymptomatic men and a 39% reduction in women compared to controls that were not screened at 10 years of follow-up. Approximately 50% of lung cancer cases in men were detected at stage Ia in the CT screening arm vs approximately 75% at stage III/IV in the control arm. The TALENT trial demonstrates that LDCT screening for lung cancer should also be considered in Asian female never-smokers with risk factors such as a family history of lung cancer. While screening for lung cancer is not a substitute for stopping smoking, CT lung cancer screening for high-risk individuals presents a teachable moment for smoking cessation. The educational opportunity provided in communicating a LDCT screening result, whether positive or negative may favourably alter smoking behaviour of the participant. Delivering smoking cessation treatment with LDCT screening has great potential to reduce tobacco use and smoking-related illness and death in the large population of smokers.

Early Breast Cancer

Anthracyclines - Is It Still Relevant In Early Breast Cancer?

Samuel Ow, Singapore

Anthracyclines have long been considered the backbone of (neo)adjuvant chemotherapy for early stage breast cancer, but are associated with the risk of cardiotoxicity and other long term side effects. With the advent of modern day therapeutics such as anti-HER2 blockade and targeted therapies, anthracycline-sparing regimens have been developed. This session will review the evidence for and against the use of anthracyclines in patients with early stage breast cancer.

Role Of Rt/Axillary Treatment In The Era Of Neoadjuvant Therapy

Mastura Md Yusof

Increased risk of locoregional relapse after neoadjuvant systemic therapy for early breast cancer is associated with factors such as locally advanced stage at diagnosis, triple-negative subtype and an absence of pathological complete response. Adjuvant radiotherapy given after mastectomy or breast-conserving surgery lower the risk of locoregional recurrence, and a reduction in breast cancer mortality risks and overall mortality. Integration of increasing understanding of cancer biology, advanced surgical techniques and enhanced systemic therapy for breast cancer have led to efforts in refining radiotherapy indications post neoadjuvant therapy with the aim to lower the complication rate and increase its therapeutic efficacy. The approach to radiotherapy to the whole breast, chest wall and regional lymph node in patients treated with neoadjuvant systemic therapy will be discussed in this lecture.

Hepatobiliary

Combination Therapy In Intermediate HCC: Where We Stand?

Ghassan Abou Alfa, United States of America

Intermediate hepatocellular carcinoma (HCC) presents a significant challenge in liver cancer management, with conventional treatments often proving inadequate. Recent breakthroughs in combination therapy are creating new opportunities to improve patient outcomes and revolutionize treatment strategies. The EMERALD-1 trial stands at the forefront, exploring the integration of Durvalumab, a prominent immune checkpoint inhibitor, with interventional techniques such as transarterial chemoembolization (TACE). This trial investigates whether combining immunotherapy with locoregional treatments can enhance therapeutic efficacy. Building on this, the EMERALD-3 trial adopts a comprehensive approach by combining Durvalumab, Tremelimumab (STRIDE), and Lenvatinib with TACE. While results are not yet available, the trend in combination therapy suggests that leveraging the synergistic effects of immune modulation and targeted therapy has the potential to offer enhanced efficacy and improved outcomes for patients with intermediate HCC. In addition, competitive trials like CheckMate 74W and LEAP-012 are offering critical insights into alternative combination strategies. CheckMate 74W evaluates the combination of nivolumab with locoregional therapies, while LEAP-012 assesses lenvatinib combined with pembrolizumab. These trials are pivotal in addressing the limitations of current treatments and providing new avenues for managing intermediate HCC. These groundbreaking studies are poised to reshape the current treatment landscape for intermediate HCC, offering fresh perspectives and promising advancements that could significantly enhance patient care and outcomes.

Indications Of SBRT In Hepatobiliary Cancer, Clinical Aspects Of Radiotherapy Planning

Maria Hawkins, United Kingdom

Management of the HCC requires a multidisciplinary approach. Surgical resection and liver transplantation are the gold standard options for defined settings. Stereotactic body radiation therapy (SBRT) has emerged as a promising treatment modality in managing HCC. Current clinical guidelines propose SBRT as a viable alternative to radiofrequency ablation (RFA), transarterial chemoembolization.

Combined data highlights the effectiveness of SBRT in achieving local tumour control while minimising damage to surrounding healthy liver tissue. It shows local control of approximately 80–90% at 3 years.

SBRT in combination with immune-checkpoint inhibitors, has an immune-modulatory effect. Further exploration of immunotherapy and radiotherapy strategies are essential to identify the appropriate time for combination treatments and to optimise dose and fraction regimens. Prospective, randomised studies are imperative to establish SBRT as the primary treatment for HCC.

Management Of Oligometastatic Disease In Lung Cancer
David Lee Dai Wee

Oligometastatic disease (OMD) represents a distinct biological state in metastatic lung cancer, where the patient has a limited number of metastatic lesions, often confined to a single or few organs. This concept has transformed the approach to lung cancer management, offering the potential for curative intent in a subset of patients traditionally considered incurable. With advancements in diagnostic imaging and the increasing role of molecular profiling, accurately identifying patients with OMD has become more feasible, paving the way for aggressive local therapies.

This lecture will provide a comprehensive overview of the evolving management strategies for oligometastatic lung cancer. We will explore the role of metastatic-directed therapy, in the multidisciplinary management of oligometastatic lung cancer. Evidence from key clinical trials, such as the SABR-COMET and its follow-up studies, will be discussed to highlight the potential survival benefits of aggressive local treatment in selected patients.

Post-Progression Management For Advanced NSLCL With Driver Mutation Treated With TKI
Jeffrey Clarke, United States of America

Despite the substantial survival benefit of contemporary targeted therapeutics for driver mutation positive non small cell lung cancer (NSCLC), prognosis following progression on frontline targeted treatments remains poor. The number of driver mutations with effective targeted agents in NSCLC has increased in the past decade and includes EGFR, ALK, ROS1, RET, MET, and BRAF among others. Likewise, the landscape of post progression care for patients has grown more complex. Initial management options following progression on targeted therapies requires individualized approach based on disease-specific clinical and molecular factors. Early strategies include continuation of treatment beyond progression, ablative local therapy, and assessment of actionable resistance mechanisms. Routine utilization of plasma and tissue genotyping is required for evaluation of both on- and off-target genetic alterations conferring resistance, particularly for instances of multifocal disease progression. Novel combinations are frequently considered to treat resistance mechanisms with varying levels of supporting evidence. Emerging data has informed the landscape of effective therapeutics use of chemotherapy and immune checkpoint, bispecific antibody, and antibody drug conjugate agents. A comprehensive approach to individualized patient care, review of emerging trial data and novel therapeutics will be presented.

Cancer Genomics

Riding the Genomic Wave: Medical Genetics and Therapy

Winnie Ong

Precision oncology aims to match the right therapies to the right patients based on molecular status, made possible thanks to the rapid advances of genomic sequencing technologies and discovery of cancer genes. Genetic testing is now increasingly being carried out for therapeutic reasons, as positive results can guide treatment, enable clinical trial enrolment, and empower patient decisions. Integral to genetic testing is the understanding of somatic vs. germline mutations, their differences and implications in the clinical setting. In the past decade, tumour molecular profiling has taken off at a large scale and revolutionized the field of precision oncology. However, variants identified in tumours can be germline – hence the question of when to refer for germline testing. Some guidance on this will be discussed, including the most actionable cancer susceptibility genes, and recommendations for germline testing and returning of results in partnership with genetic counselling.

Drawing insight from the 2 most common hereditary cancer syndromes we see in our clinic - Hereditary breast, ovarian and pancreatic cancer (HBOPC) and Lynch syndrome - this talk will largely highlight the utility and challenges of germline alterations in guiding targeted therapies in cancer. Malignancies associated with *BRCA1/2* and *PALB2* pathogenic variants show genomic instability due to homologous recombination repair deficiencies, and those associated with Lynch syndrome/mismatch repair-deficient tumours show microsatellite instability, characteristics which render them vulnerable for specific treatments like PARP-inhibitors and immune checkpoint inhibitors. Importantly, germline-positive individuals also have a higher predisposition to develop other cancers, with implications not only for themselves but for other at-risk family members, and for cancer risk management and reproductive options. Hence too the importance of multidisciplinary clinical decision-making and care for these patients and families.

SATURDAY, 12 OCTOBER 2024

SCIENTIFIC PLENARY (IV) RESEARCH

Overcoming challenges in oncological clinical trials (phase 1-3) in Malaysia

Voon Pei Jye

Historically, the majority of oncology clinical trials have been concentrated in Western Europe and North America. However, with the globalization of drug development, sponsors are increasingly shifting their focus to the Asia-Pacific region. In Malaysia, government policies aimed at promoting clinical trials have been implemented for over a decade, establishing the country as a significant clinical trial hub in this region.

Despite the promising growth in oncology clinical trials, Malaysia still faces several challenges. These include the limited number of early-phase oncology studies, insufficient patient awareness and misconceptions about clinical trials, a lack of patient advocacy, inadequate upstream activities in the drug development value chain, and the need to improve regulatory and ethical approval timelines to match regional peers. Additionally, the country's clinical trial infrastructure requires further strengthening to remain competitive.

To address these challenges, a comprehensive approach is needed. Key strategies include enhancing training and education for both patients and healthcare providers, expanding infrastructure capacities, fostering strategic alliances, and reinforcing upstream activities in the drug development process. Strengthening patient advocacy and ensuring continued support from policymakers are also crucial for building a resilient clinical research ecosystem in Malaysia.
Furthermore, adopting best practices from other countries can help ensure the effective implementation of both current and future initiatives, driving progress in oncology drug development within the country.

Gynecologic Oncology

Endometrial Cancer – Landmark Trials & Biomarker Directed Therapies

John Chia Whay Kuang, Singapore

The treatment of Endometrial cancer has changed more in the recent three years, than for the past thirty. A heterogeneous disease with varying molecular subtypes, endometrial cancer has been traditionally treated with surgery, radiation, and chemotherapy. Recent advancements however, in biomarker classification and biomarker directed therapies have focused on more streamline approaches, particularly in the understanding and frontline use of immunotherapy (in both DMMR and PMMR patient subgroups), use of molecularly targeted therapies including VEGF and FGF inhibitors, and HER2-directed therapies, and the future integration of PARP inhibitors. These novel treatments have and will continue to reshape the therapeutic landscape and improve the prognosis for this complex disease.

Lower GI

Neoadjuvant Strategies For Locally Advanced Rectal Cancer - TNT, How To Implement This In Malaysia

Patricia Shamani Soosainathan

The landscape for management of locally advanced rectal cancer has gone through a paradigm shift with the advent of total neoadjuvant therapy (TNT). This presentation will explore the TNT strategies available and highlight its impact on treatment outcomes for locally advanced rectal cancer. Emerging strategies within TNT include the integration of circulating tumour DNA for monitoring, the role of testing for mismatch-repair-deficient status, and exploration of non-operative management. This talk aims to also address strategies to adopt TNT and enhance treatment outcomes for patients with locally advanced rectal cancer in Malaysia while considering local needs and constraints.

Management of Colorectal Peritoneal Mets: HIPEC is not Hot Air

James Khaw Chern Wern

Colorectal peritoneal metastases (CPM) are observed in 4-15% of patients at initial diagnosis and up to 25% at recurrence. The prognosis for these patients is particularly poor, with limited survival benefits from systemic chemotherapy due to pharmacokinetic barriers and distinct molecular characteristics. Current standard treatments include systemic chemotherapy and cytoreductive surgery (CRS), which can offer a median overall survival (OS) of over 40 months in selected cases. Hyperthermic Intraperitoneal Chemotherapy (HIPEC) has been introduced as a complementary therapy post-CRS to treat residual microscopic disease. HIPEC involves delivering heated chemotherapy directly to the peritoneal cavity, enhancing drug penetration and local cytotoxicity. While HIPEC has shown potential benefits, recent large-scale trials with Oxaliplatin-based regimens failed to demonstrate a survival advantage, leading many centers to switch to alternative drugs like Mitomycin C.

The variability in HIPEC protocols—over 60 different combinations of drug type, concentration, duration, and carrier solutions—makes standardization challenging. The Peritoneal Surface Oncology Group International (PSOGI) is currently working on global consensus guidelines to establish more uniform protocols and identify key areas for further research.

Despite the controversies, HIPEC continues to be offered in specialized centers due to its potential for improved locoregional control. Future efforts are focused on refining patient selection, optimizing perioperative management, and exploring biomarkers that can guide personalized treatment decisions. HIPEC remains a promising option for select patients, and ongoing research is expected to solidify its role in the multidisciplinary management of colorectal peritoneal metastases.

Head & Neck

Transoral Robotic Surgery - Malaysian Experience

Mohd Razif Mohamad Yunus

Transoral robotic surgery (TORS) is a minimally invasive surgical technique that is gaining popularity in Malaysia. Previously, for tumour around the oropharynx and tongue base, the resection is either by endoscopic or open approach. For endoscopic approach, the tongue base area is difficult to resect with good margins as the instruments are rigid. As for the open approach, the morbidity from mandibulotomy and long hours of surgery, makes this option is not favorable. With the current TORS technique, the disadvantages of these two approach can be overcome. However, there are concerns over its cost, practicality, and feasibility in local settings. We will discuss this approach further.

Transoral Robotic Surgery - Malaysian Experience

Ahmad Kusyairi Khalid

The da Vinci® Surgical System is a robotic surgical system designed to assist surgeons using a minimally invasive approach. It was approved by the FDA in 2000 and was initially used for general laparoscopic surgeries. Subsequently its role was explored in head and neck surgeries and after more than a decade, this innovative approach has been increasingly adopted by head and neck surgeons all over the globe for treatment of benign and malignant conditions of the oropharynx and larynx.

In Malaysia, transoral robotic surgery (TORS) is a relatively new approach for otorhinolaryngology and head and neck conditions. This lecture will highlight the advantages and disadvantages of utilizing this robotic technique, the important clinical aspects as well as comparison between this minimally invasive approach and conventional surgical approach. The challenges in setting up and introducing this new innovative surgical technique will also be discussed.

Nursing

Optimal Care Of Vascular Implanted Devices

Punitha A/P Arumohan

Intravascular devices are indispensable in modern healthcare. The main two vascular devices commonly used for oncology patients are PICC and chemoport. PICC are used for short term, over weeks to months. Chemoport are used for months to years. Vascular devices are indicated for IV medications, obtaining blood specimens and blood product transfusions.

A chest x-ray post PICC or chemoport line insertion is crucial to confirm tip placement, detect malposition, to rule out complications such as pneumothorax and kinking. However, the long-term complications are chemoport flipping and pinch of syndrome. Chemoport reservoir rotation or flipped chemoport can be detected when nurses are unable to insert needle at the chamber. It is usually caused by the large pocket size and inadequate fixation of the port in the pocket. Flipping of ports needs re-exploration and positioning. Pinch of syndrome may occur when the catheter is compressed between the first rib and clavicle, causing intermittent mechanical occlusion for both infusion and withdrawal.

Other sources whereby catheters were infected were through extraluminal and intraluminal route. Extraluminal route arising from skin at the catheter insertion site. Intraluminal route arising from the contaminated IV fluids, catheter tubing connections, stopcocks and catheter hub.

Regardless of the type of access devices used, routine maintenance care and the management of potential complications need to be addressed. Nurses need to be educated on Central Venous Catheter (CVC) Bundle care. A daily maintenance care bundle includes hand hygiene, dressing change, maximal barrier precautions with line insertion, optimal catheter site selection and daily review of line necessity is essential to reduce infection.

Although PICC and chemoport are associated with spectrum of complications, proper technique of implantation/insertion and proper maintenance are crucial to prevent life threatening complication.

Optimal Management Of Fungating Breast Wound

Norhashimah Bt Khadir

Breast cancer is the number 1 killer for cancer in women. We will be discussing about the challenges in managing fungating breast cancer. We will also discuss about option of treatment available surgically. Finally, we will be discussing about how do I do the dressing for fungating breast cancer patient.

Nuclear Medicine

Diagnostic Nuclear Medicine For Solid Tumours In Malaysia
Au Mun Yee

The talk will encompass both hybrid SPECT-CT and PET-CT imaging for solid tumours available in Malaysia. For PET-CT imaging, it includes radiotracers beyond F-18 FDG, mainly Ga68 PSMA and Ga68 DOTA as well brief mentioned on Ga68 FAPI.

Radionuclide Therapy in Solid Cancer in Malaysia
Alex Khoo Cheen Hoe

The field of nuclear medicine has grown by leaps and bound since the successful radioiodine-131 therapy for thyroid cancer in 1940's. The interest in nuclear medicine has surged with the development of immunotherapy and of recent times with advent of Ga68-PSMA PET-CT and FDA approval for lutetium-177 PSMA therapy for prostate cancer. This lecture will discuss the available radionuclide therapies in Malaysia such as for thyroid cancer, neuroendocrine tumors, prostate cancer, liver cancer and bone palliation.

CNS

Is There A Role For Targeted Therapy In Gliomas?
Speaker: Sith Sathornsumetee, Thailand

Progress in understanding of genetic and molecular underpinnings of gliomas has provided new therapeutic opportunities in the post-genomic era. A few targeted agents have been approved for subgroups of gliomas such as vorasidenib for CNS WHO grade 2, IDH-mutant astrocytoma and oligodendroglioma following surgery and tovarafenib for recurrent/relapsed pediatric low-grade glioma with BRAF fusion or mutation. However, the number of approved targeted agents for glioma is still far less behind that of other solid cancers despite intense effort in preclinical and clinical studies. Challenges have been identified including but not limited to restricted drug delivery, complex genetic heterogeneity and unique tumor microenvironment. Several strategies have been explored to overcome these challenges to improve outcome.

Management Of G2/3 Glioma Or Case Discussion

Sith Sathornsumetee, Thailand

The 2021 World Health Organization (WHO) classification of CNS tumors characterizes adult-type diffuse gliomas into three categories including astrocytoma, IDH-mutant, oligodendroglioma, IDH-mutant, 1p/19q-codeleted, and glioblastoma, IDH-wild-type. Therefore, lower-grade gliomas (CNS WHO grade 2 and 3) include astrocytoma, IDH- mutant and oligodendroglioma, IDH-mutant, 1p/19q-codeleted. The most malignant grade of astrocytoma, IDH-mutant is CNS WHO grade 4 that is characterized by grade 4 histology and/or homozygous deletion of CDKN2A/B. Treatment of CNS WHO grade 3 astrocytoma and oligodendroglioma consists of radiation and chemotherapy, whereas treatment of CNS WHO grade 2 gliomas remains controversial. In addition, the recent US-FDA approval of vorasidenib, an IDH-inhibitor, has increased a treatment option for CNS WHO grade 2, IDH-mutant gliomas and expanded new clinical trial opportunities in IDH-mutant gliomas.

Bladder

Cost Effective Treatment For Muscle Invasive Bladder Cancer For Developing Countries

Nuradh Joseph, Sri Lanka

Although still potentially curable, muscle invasive bladder cancer (MIBC) carries a poor prognosis with a five-year overall survival rate of approximately 50%. Furthermore, due to its relatively low prevalence conducting robust randomized clinical trials have been challenging in this space and a number of questions remain unanswered. From selecting patients best suited for curative-intent radiotherapy to the choice of radiosensitizer to the optimal fractionation regimen, clinicians are called upon to make these vital decisions based on first principles and analysis of retrospective data. In this background, selecting the most cost-effective option is of paramount importance especially in resource limited settings. In this talk, I will share some insights from the perspective of a clinical oncologist working in low and middle income countries.

Physics/Radiation Therapist

SBRT Liver Motion Management Practice in Malaysia (Radiation Therapist Perspective)

Mohd Khairul b. Mohd Zambri

SABR or SBRT is a common term where with current machine that most center have in Malaysia are capable to exert the technique. SBRT is indicate as the definite irradiation of an image defined

extracranial target using a shorter treatment day of high dose fractionations. Nevertheless, our education system as radiation therapist in Malaysia there are proportionately less exposure for SBRT/SABR technique that has been taught, due to this technique is consider as a highly advanced technique. For information, the first center that introduce SBRT technique was the center that acquire Cyberknife in year 2005. As such not many centers have the capability in applying SBRT technique that we are aware off in the year 2005.

Since early 2016, there are trend where most of the private hospital are trying to introduce their SBRT treatment technique to the public. Where each of the hospital that practice SBRT have their own way of treatment management. The most importance safety aspect as radiation therapist in handling SBRT case is to understand the ICRU guidelines and target definition. Secondly, the effectiveness immobilization device also necessary for a reproducible position in daily treatment. Thirdly, to understand the principle of motion management that required such as free breathing technique using ITV, SGRT, gated-treatment, and abdominal compression. Even with such technology, the extracranial lesions pose further challenges to treatment delivery due to inter- and intra- fraction tumor and critical organ motion. Thus, the number one priority for radiation therapist staffs to handle SBRT cases is to have a good fundamental and technical knowledge. In this study, the pro and cons for each SBRT treatment method that can affect the planning and treatment will be discuss.

Overcoming Challenges in SBRT for The Spine

Zulaikha Jamalludin

Spine stereotactic body radiotherapy (SBRT) has emerged as a highly effective treatment modality for spinal tumors, offering precise dose delivery while minimizing exposure to surrounding healthy tissues. However, the implementation of spine SBRT presents several significant challenges that must be addressed to ensure optimal patient outcomes. This talk, titled " Overcoming Challenges in SBRT for the Spine," will explore the critical issues in the planning and delivery of spine SBRT.

Key challenges include patient setup and immobilization, where the need for reproducible and stable positioning is paramount to avoid intra-fractional motion and ensure accurate dose delivery. The talk will also discuss the technological advancements in treatment delivery, including the use of image-guided radiotherapy (IGRT) and robotic systems, which have significantly improved the precision of spine SBRT.

The complexity of treatment planning is another hurdle, requiring advanced techniques to achieve conformal dose distributions that spare critical structures such as the spinal cord while ensuring adequate target coverage.

Additionally, the talk will address the specific challenges and considerations in reirradiation cases, where prior radiation exposure complicates treatment planning and delivery. Insights from clinical experience and literature will be shared, providing an overview of the current state of spine SBRT

and reirradiation. By bridging the gap between existing challenges and innovative solutions, we can optimize outcomes and advance the field of spine SBRT.

SBRT for Challenging Sites: Intrahepatic, Renal, and Pericardial Lesions
Robin Hill, Australia

Stereotactic body radiotherapy (SBRT) involves the delivery of a high dose of radiation therapy to the tumour volume with very high geometric precision. Typical SABR treatments are usually given in a small number of fractions, make use of advanced planning techniques, modern dose calculation algorithms, require suitable motion management using image guidance and a rigorous and accurate quality assurance testing process. The rapid clinical uptake of SBRT treatments has extended to a wide range of sites but predominantly include lung, liver, spine, prostate nodes and adrenal gland cancer treatments. The use of SBRT for lung treatment is now well established as the standard of care as validated by evidence from clinical trials in comparison to other therapies such as surgery and conventional radiotherapy. The clinical practice of SBRT continues to evolve and much of this relies on new and emerging technologies and techniques which are readily available with modern radiotherapy equipment. There is also demand by patients for the best possible practice for their individualized cancer treatment. The clinical implementation and expansion of SBRT treatments should be framed within developing a safe treatment process and protocols in the local department. This process should involve members across the multidisciplinary team of radiation oncologists, medical physicists, radiation therapy technologists and nurses. However, there are still many challenges to resolve for other sites including intrahepatic, renal, and pericardial lesions. In this talk, I will provide an overview of current clinical practice and published recommendations for SBRT of these challenging cases.

Research

Implementing Radiotherapy Related Research in a Developing Country
Nuradh Joseph, Sri Lanka

Globally, there is relative underfunding of radiotherapy related research, with a lot of work being done at academic departments devoid of any meaningful funding by the pharmaceutical industry. Even when such research is conducted, emphasis is placed on novel technological advances such as particle therapy, magnetic resonance imaging based linear accelerator (MR-Linac) units or the combination of expensive immunotherapy drugs where the actual clinical benefit to the patient is often uncertain and unproved in the setting of a randomized controlled clinical trial.

In the developing world the challenges faced by radiation and clinical oncologists are entirely different - ensuring timely access to high quality radiotherapy in the setting of severe resource constraints. Clinical oncologists working in low and middle income countries cannot relegate the

responsibility of seeking answers to their unmet clinical needs to their counterparts in the developed world. From the challenges of implementing ultra-hypofractionation to novel fractionation strategies to investigating cheap and cost-effective radiosensitizers, the potential for clinical research is huge in this space. In this talk, I would focus on overcoming the challenges of setting up a radiotherapy research programme in a resource limited setting.

Delivering Support for a Successful Investigator Initiated Research in Oncology

Yoon Chee Kin

This presentation will provide an overview of the research services offered by the Clinical Research Centre (CRC) and Clinical Research Malaysia (CRM). It will also introduce the Malaysia Research Grant (MRG) and discuss the role of the Scientific Review Board in the grant application process. A short video will be shown that provides an overview of the MRG application process.

Immunotherapy

Updates in Predictive Markers for Immunotherapy and Treatment of Solid Tumours

Lee Fong Wan

Nowadays, the integration of cancer biomarkers into oncology has revolutionized cancer treatment, yielding remarkable advancements in cancer therapeutics and the prognosis of cancer patients. The development of personalized medicine represents a new paradigm in cancer management, as biomarkers enable oncologists to tailor treatments based on the unique molecular profile of each patient's tumor. A biomarker is predictive if the treatment effect is different for biomarker-positive and biomarker-negative. Whereas, a prognostic biomarker informs about a likely cancer outcome.

After the diagnosis of the cancer is ascertained, pathologists use techniques like immunohistochemistry (IHC), in situ hybridization (ISH), and next-generation sequencing (NGS) to identify and validate predictive markers. These methods help in understanding the expression of specific proteins or genetic mutations that can predict response to targeted therapies. For example, the expression of PD-L1 (Programmed Death-Ligand 1) can predict the efficacy of PD-1/PD-L1 inhibitors, a class of immune checkpoint inhibitors used in cancer immunotherapy. On the other hand, next-generation sequencing (NGS) is used to identify genetic mutations, alterations, and biomarkers that are relevant for targeted therapies and immunotherapies. For instance, mutations in genes like KRAS, BRAF, or HER2 can guide targeted treatment approaches. Other features of the tumour, including the tumour microenvironement, eg tumour infiltrating

lymphocytes (TILs) and tumour mutational burden (TMB) which number of mutations within the tumor genome may also be studied; to provide additional information in the management of patient.

Pathology is integral to the practice of personalized medicine. Hence, pathologists need to work closely with oncologists, geneticists, and other specialists to integrate predictive marker data into a comprehensive treatment strategy. This collaboration ensures that all aspects of a patient's condition are considered when selecting a therapy.

Recognising Rare and Lethal Immunotherapy Related Adverse Events and Management

Tan Hsio Ching

Immunotherapy is rapidly evolving secondary to the advent of newer immunotherapeutic agents and increasing approval to treat a wide spectrum of cancers. Recognizing the potential side effects related to immunotherapy is very important. Although most of the side effects from immunotherapy are manageable, some can be severe and potentially life-threatening. Clinicians should be aware of the various side effects of these agents and recommendations for management of these side effects in order to facilitate improved outcomes for patients. This presentation will share a few cases related to immune related adverse events.

SUNDAY, 13 OCTOBER 2024

SCIENTIFIC PLENARY (III)

ARTIFICIAL INTELLIGENCE: Improving Cancer Diagnostics and Therapeutics Using Artificial Intelligence - Current State of Affair and Future Potentials

Junya Fukuoka, Japan

The advancement of digital pathology (DP) has brought revolutionary changes to pathological diagnosis, and the application of AI has the potential to significantly transform the future of diagnosis, including in cancer care. For AI to be effectively implemented, the digitization of pathology images is essential; however, in Asia, the delay in digitalization remains a challenge.

On the other hand, AI technology has rapidly progressed, with various applications in cancer diagnosis becoming more prominent. For example, AI models that detect and outline lesions, suggest diagnosis with differential diagnosis, highlight findings that are difficult to detect, support immunostaining evaluation, and calculate tumor cellularity have gained attention as tools that enhance efficiency and accuracy, which were previously dependent on manual measurements. Additionally, in areas of pathology where inter-observer variability is an issue, AI is being introduced with the goal of standardizing diagnoses, particularly in aiding the detection of cancer lesions and suggesting diagnosis. This will, no doubt, improve diagnostic consistency and reduce variability in clinical practice.

Furthermore, AI models predicting genetic alterations and prognoses have been published, further increasing its value as a tool supporting personalized medicine. Recently, the development of Generative AI and Large Language Models (LLMs) has led to the introduction of "pathology copilot AI," which assists pathologists.

In the session, I will discuss how these technologies impact cancer diagnosis and treatment along with our own experiences.

Upper GI

Oligomets in Upper GI Cancer - Any Role of Surgery?

Lim Shyang Yee

Oligometastasis is defined as a state between localized disease and systemic metastasis. It has been reported that local treatment like surgical resection, radiotherapy or ablation therapy may prolonged survival of patients with oligometastasis.
European multicentre board established Oligometastasis Esophagogastric Cancer (OMEC) Consortium, defined oligometastasis as limited metastasis to one organ with maximum of 3 lesions

or 1 distant lymph node metastasis in patient with synchronous metastasis. The consortium recommends treatment strategy of systemic chemotherapy followed by re-evaluation the disease condition followed by surgical resection of primary and oligometastatic lesion (also known as conversion surgery with curative intention) or stereostatic radiotherapy.

The efficacy of systemic chemotherapy followed by conversion surgery for oligometastasis of paraortic lymph nodes (station 16a2 & 16b1) and solitary liver metastasis in gastric cancer has been evaluated and showed improved survival. Survival of patients undergoing surgical resection of oligometastasis of other organ remained to be evaluated in ongoing trial.

The addition of new targeted therapy & immunotherapy to the chemotherapy could improve the survival outcome of patients with oligometastasis from gastric cancer.

Peri-Operative Treatment In Upper Gi Cancer

Eng Jie Yi

The survival outcome of patients with locally advanced gastric or gastroesophageal junction (G/GEJ) cancer remains unsatisfactory as 5 years OS was only 30%, and improvements in survival and recurrence remain urgent issues for clinicians worldwide. Locally advanced gastric or GEJ cancer was a different disease between the West and the East regarding diagnosis, surgery, and prognosis. However, recent advances in medical oncology have set the stage for harmonization. This presentation is to review highlights clinical trials of perioperative or neoadjuvant chemotherapy conducted during the past two decades to provide insights into future directions. The initial landmark study for perioperative chemotherapy in gastric ca was MAGIC trial using ECF. It showed improvement in OS and PFS. In 2018, perioperative chemotherapy with FLOT becomes new standard of care as FLOT 4 study showed better median OS compared to ECF. Recently another two randomized global phase III trials, the KEYNOTE-585 and MATTHERHORN shed light on perioperative chemoimmunotherapy as a potential standard of care for resectable gastric/GEJ cancer as it improved pCR. Longer-term event-free survival (EFS) and overall survival (OS) data are needed. There were 2 studies using trastuzumab+pertuzumab with chemotherapy as perioperative treatment in HER 2 positive gastric/GEJ cancer but unfortunately both were negative trials. More biomarkers were explored currently to improve the tratement for locally advanced upper GI cancer.

Radiotherapy For UGI CA - Current Status And Future Direction

Maria Hawkins, United Kingdom

Biomarker-selected strategies, including immune checkpoint inhibitors, have marked a paradigm change in the treatment of advanced gastric and gastroesophageal malignancies, showing improved survival over standard chemotherapy.

Treatment of locally advanced operable and inoperable disease still relies on chemotherapy with or without radiotherapy for all-comers with rather disappointing outcomes, increasing the interest in moving targeted approaches forward in the perioperative setting.

State of the art radiotherapy and protons therapy offer the opportunity to improve locoregional control, but selecting patients that will benefit needs further research.

Sarcoma

GIST Updates

Wong Yoke Fui

A rare tumour, gastrointestinal stromal tumor (GIST) is a malignant neoplasm of mesenchymal origin. Gain-of-function mutations in KIT or PDGFRA receptor tyrosine kinases are the crucial drivers of most GISTs. With the wide spectrum of disease from localised to metastatic, development of treatment in each stage is available. Systematic molecular analysis during the diagnostic workup is strongly recommended for all GIST, given the relevant predictive and prognostic information provided. In this talk, sharing of clinical data and future awaiting clinical approaches will be touch on.

Giant Cell Tumours - An Update

Prashant Narhari

Giant cell tumour of bone (GCTB) is a rare benign but aggressive bone tumour which mainly affects the skeletally matured patients in the age range of 20 to 40 years old. Among the common bone involved are the ends of long bone like distal femur, proximal tibia, proximal humerus and distal radius. It is also seen in flat bones like calcaneum and sacrum. Despite being benign, it does have an estimated 2% risk of distant metastasis to the lung. Radiologically, these lesions are lytic expensile and are always next to a joint (juxtaarticular). Given such location, traditionally they are treated with surgeries which requires joint reconstruction either with an endoprosthesis or fusion leading to significant loss of limb function.

With the advent of Denosumab, a RANK- ligand inhibitor, many of these joint sacrificing surgeries can be avoided with reasonably good local control giving patient much better functional outcome especially considering the disease commonly affect the relatively active young adults. There are several unanswered questions regarding role of denosumab in GCTB but with anything new in the armamentarium of treating diseases, day by day we are understanding it better to treat our patients better. Proper usage of denosumab is paramount in giving best possible outcome without compromising patients' safety.

My presentation will look into what we know and what we don't know about denosumab and GCTB. I am a strong believer of phase "knowing what you don't know, is half battle won!!!"

MANAGING "WHOOPS" SURGERY

Prashant Narhari

"Whoops" surgeries are surgeries where a tumour is excised without proper preoperative work up or in an unplanned manner and the histology comes back as a sarcoma. Whoops are associated with significant morbidity and poor outcome to the patient and it could also adversely affect the mortality rate in some cases.

Many publications all over the world has established that sarcomas are best treated at high volume centers ideally with a multidisciplinary team set up. However, whoops surgeries is routine part of a sarcoma surgeons practice. The best approach to whoops is avoiding. The second best is to refer to an established sarcoma center once identified.

These patients commonly will undergo repeat local and systemic staging and reevaluation of the histology before further treatment is warranted. Limb salvage is still possible in many cases despite whoops with the help of plastic surgeon to reconstruct the defect with a flap. Occasionally, the best treatment in nonmetastatic case is an amputation. Chemotherapy and radiotherapy are essential part of the treatment. Sometimes advanced radiotherapy technique may be utilized for example brachytherapy.

"Whoops" surgeries are nightmare to both treating doctors and patients. It should be avoided at any cost. However, it is a real problem that haunts us as medical practitioner and it is here to stay until and unless robust measures by all stake holders are put in place to prevent such occurrence. Creating awareness especially among healthcare workers is important in avoiding any unwanted circumstances.

Palliative Care

National Pain Management CPG (2nd Edition)

Aaron Hiew Wi Han

Clinical Practice Guidelines for Cancer Pain Management, Second Edition.
The second edition of clinical practice guidelines (CPGs) for cancer pain management reflects the latest evidence and advances in the field. These guidelines provide updated recommendations on a range of topics, including the assessment of pain intensity and impact, the selection of appropriate analgesics, the management of side effects, and the use of non-pharmacological interventions.
Key updates in the second edition include:
- New evidence on the effectiveness of specific management
- Updated recommendations on the use of non-opioid analgesics, opioids and adjuvant medications
- updated evidence on non-pharmacological and other interventions
- Guidance on the assessment and management of pain in children with cancer

Dying Well - Myth or Possibility

Oo Loo Chan

What constitutes a ‘good death’?
Dame Cecily Saunders, the founder of modern hospice movement, propounded the concept of ‘Total Pain’. It still remains a foundational pillar of palliative care today. A ‘good death’ reflects this concept and is thus multi-faceted, comprising important themes like alignment with one’s values and preferences, absence of distressing symptoms, completion of life, having loved ones around, not being a burden to others, emotional well-being, quality of life, spiritually connected and various others. It is highly individualistic, a culmination of the life lived before death. It can change with circumstances and the passage of time. The patient, family and healthcare personnel may have different perspectives and these may not be aligned.

We face a rapidly changing landscape of an aging population. Patients often present with multiple co-morbidities. Family caregivers are diminishing. Medicalization of death is increasing. Medical science has progressed by leaps and bounds to cure and prolong life. Healthcare system is fragmented. Socio-economic circumstances are challenging.

The process towards a ‘good’ death is multifaceted and must involve different segments of society toprovide a supportive socio-economic environment, good end-of-life care and more education on death to minimize the associated taboo.

What can we clinicians do to facilitate the possibility of our patients dying well? In journeying with our patients facing life-threatening illnesses, opportunities may arise for us to explore their

values and preferences tactfully and compassionately, even if tentatively. We are sowing seeds for subsequent nurture - starting the process earlier helps especially when the treatment we offer is not curative but palliative in intent. We need to move from focusing on cure to care, from the science to the art of medicine.

Advanced Care Plan - What Is It?

Lim Liang Yik

In poor prognosis setting, the balance between benefit and burden of treatments often tilts. Patients and families begin to have concerns beyond receiving curative treatments. Healthcare plays a crucial role in preparing patients and families, and guiding them to achieve what truly is important to them, in the given the situation. Advance care planning takes a fundamental role in the care of the cancer patient. Come rain or sunshine, it ensures that the patient's voice continues to be heard, and healthcare continues to be relevant to the people it serves.

Thyroid

Sequencing Therapies for Metastatic Thyroid Carcinoma

Khairiyah Sidek

Differentiated thyroid cancer is the most common histologic type of thyroid cancer, accounting for 95% of all thyroid cancers and consists of papillary, follicular, and poorly differentiated thyroid cancer. Surgery is the treatment of choice for DTC. Based on tumour size and its local extension in the neck, treatment options include unilateral lobectomy and isthmectomy, total thyroidectomy, central neck dissection, and more extensive resection. After surgery, radioactive iodine and thyroid-stimulating hormone suppression therapy is recommended in patients with known metastatic disease.

About 7% to 23% of patients with DTC develop distant metastases. Two-thirds of these patients become refractory to radioactive iodine. Prognosis remains poor in these patients, with a 10-year survival rate from the time of detection of metastasis of only 10%. Treatment options are limited. However, recently the understanding of cell biology in terms of key signalling pathways called kinases has been elucidated. The kinases that can stabilize progressive metastatic disease seem to be attractive therapeutic targets in treating patients whose disease no longer responds to radioiodine and TSH suppressive hormone therapy.

Sorafenib, lenvatinib, and cabozantinib are multikinase inhibitors approved for patients with metastatic RAI-refractory DTC, whereas vandetanib and cabozantinib are approved for patients with MTC. Management of thyroid carcinomas has evolved such that targeted therapies have become therapeutic options for patients with BRAF, RET, NTRK, ALK, and ROS1 alterations.

The advances made over the years in the treatment of metastatic thyroid carcinoma and focus on the systemic therapies that have recently transformed the treatment landscape of advanced disease.

Management of Low Risk Thyroid Cancer
Alex Khoo Cheen Hoe

Thyroid cancer is the 8th commonest cancer of females in Malaysia. It incidence is on the rising trend due to increasing awareness and health screenings. The management of thyroid cancer varies according to the type and cancer risk. Dedifferentiated thyroid cancer such as papillary and follicular thyroid cancer has good prognosis and the low-risk subtypes have the best outcomes. Treatment for low risk dedifferentiated thyroid cancer has evolved over the years from total thyroidectomy followed by radioiodine-131 therapy, to lobectomy and observation. This lecture will discuss how low risk thyroid cancer is managed currently.

Patient Advocacy

Where To Find Support After Diagnosis Of Cancer?
Jimmy Kijon

PERKESO was established as a department under the Ministry of Labour (now known as the Ministry of Human Resources) on 1st January 1971 with the enforcement of the Employees' Social Security Act 1969 [Act 4]. The first Employment Injury Protection Scheme was launched on 1st October 1971 at the Johor Bahru PERKESO Office. On 1st July 1985, PERKESO's status was changed from being a Government Department to become a Statutory Body and with effect from 1st January 1992.

The concept of PERKESO's Social Security Protection is based on joint responsibility through the pooling of resources, sharing of risk and replacement of income. Social security protection is a basic necessity that must be fulfilled, as agreed upon in the International Labour Organisation Geneva Convention 1952, that is Convention 102: Social Security (Minimum Standards) Convention.

In meeting the said goal, the main function of PERKESO is widened to enable a more comprehensive social security protection for workers and their dependants. Now, PERKESO is responsible in administering and enforcing four (4) acts, namely, the Employees' Social Security Act 1969 [Act 4], the Self Employment Social Security Act 2017 [Act 789], the Employment Insurance System Act [Act 800] and the Housewives' Social Security Act 2022 [Act 838].

PERKESO INVALIDITY SCHEME

An Insured Person shall be considered as suffering from invalidity by reason of specific morbid condition of permanent nature either incurable or is not likely to be cured and no longer capable of earning, by work corresponding to his strength and physical ability, at least 1/3 of the customary earnings of a sound Insured Person.

The Invalidity Scheme provides 24-hour protection to employees against invalidity or death arising from causes occurring outside of working hours.

1). Invalidity Pension
2). Invalidity Grant
3). Constant Attendance Allowance
4). Education Benefit
5). Physical & Vocational Rehabilitation and Dialysis Facilities

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OUTCOME AND TRANSCRIPTOMIC FEATURES OF DUAL EGFR AND MET BLOCKADE IN NSCLC

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INTRODUCTION

MET alterations are known resistance mechanisms to EGFR-TKI. Dual EGFR and MET inhibition show promise in overcoming EGFR resistance. We present the outcome of patients treated with MET inhibitors +/- EGFR-TKI.

MATERIALS & METHODS

We evaluated NSCLC patients with MET alterations (amplification, polysomy, mutation) & EGFR mutation who received crizotinib, capmatinib, or tepotinib +/- EGFR-TKI after progression on EGFR-TKI. MET amplification was detected by FISH or NGS.

RESULTS

From 2012 to 2020, 46 patients were identified. Median age was 60 years old, 58.7% were male and 76% were never smokers. MET alterations detected: MET amplification (50%, 23/46), MET polysomy (47.8%, 22/46), & MET mutation (2.2%, 1/46). Thirteen patients received single-agent MET inhibitors and 33 received dual EGFR/MET inhibitors. The median duration of response (DOR) was 2.8 months (2.0 months for MET blockade and 4.2 months for dual MET and EGFR blockade). Among patients with MET polysomy, the median DOR was 5.8 months versus 1.9 months in those with MET amplifications. In evaluable patients, 54% (20/37) had disease progression, 27% (10/37) had a partial response and 19% (7/37) had stable disease. All patients who had partial response received dual EGFR/MET inhibitors.

Six tissue samples among patients that received both EGFR & MET inhibitors – 3 responders (DOR > 2 months) and 3 non-responders (DOR < 2 months) were evaluated with WES and RNA-seq. All responders are female and all non-responders are male. Responders showed higher tumor content (purity estimate by PUREE). All responders show TRU (terminal respiratory unit) subtype, whereas non-responders show either PI (proximal-inflammatory) or PP (proximal proliferative) subtypes. There were no remarkable differences in mutational signatures, CIBERSORT, and GEP scores.

CONCLUSION

Our data suggests a potential benefit of adding MET inhibitor while continuing EGFR-TKI. Possible predictive factors are MET polysomy, high tumor content, and TRU subtype.

LEVERAGING PHENOMIC AND GENOMIC DATA FROM A LARGE-SCALE COHORT STUDY IN ADVANCING PERSONALIZED ONCOLOGY – A PRELIMINARY UK BIOBANK ANALYSIS

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INTRODUCTION

Gastrointestinal (GI) cancers are a significant global health challenge. Understanding the phenomic and genomic characteristics associated with these cancers is crucial for advancing personalized medicine. The UK Biobank, with its extensive phenomic and whole exome sequencing (WES) data, provides a valuable resource for such research.

MATERIALS AND METHODS

We utilized data from the UK Biobank, a prospective cohort study of over 500,000 participants aged 40-69 years. Phenomic data, including socio-demographic factors, lifestyle variables, anthropometric measurements, and biological markers, were collected. Our study focused on 441,141 participants, including 7,952 incident GI cancer cases and 433,189 controls. Univariate and multivariate logistic regression analyses identified significant risk factors. Ongoing WES analyses aim to identify genetic variants and assess their downstream effects on protein functions.

RESULTS

Preliminary analyses showed elevated levels of cystatin C significantly associated with increased GI cancer risk (adjusted OR 2.43; 95% CI 2.23–2.64). Racial differences in cancer prevalence were observed, with Whites having a higher risk compared to Asians. Initial WES data indicated several genetic variants with potential impacts on protein function and cancer pathogenesis.

DISCUSSION

Phenomic and genomic data from the UK Biobank enable the identification of critical biomarkers and risk factors for GI cancers. The significant association of cystatin C and racial differences in cancer risk highlights the importance of diverse population studies. Integrating phenomic data is essential for decoding the effects of genomic variations, enhancing disease mechanism understanding. Ongoing WES analyses bridge research and clinical practice by identifying genetic variants for personalized treatment strategies, benefiting patients through tailored approaches.

CONCLUSION

This study underscores the value of large-scale cohort studies in phenomic and genomic data analysis for oncology. The UK Biobank dataset helps identify key risk factors and biomarkers, advancing GI cancer understanding and supporting personalized medicine approaches. These insights are crucial for Malaysia as it advances towards precision medicine, ensuring effective, targeted treatments for its diverse population.

CABOZANTINIB PLUS NIVOLUMAB (C+N) VS SUNITINIB (S) FOR 1ST LINE ADVANCED RENAL CELL CARCINOMA (ARCC): 55.6 MONTH FOLLOW-UP OF THE CHECKMATE 9ER TRIAL

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BACKGROUND
C+N demonstrated superior progression-free survival (PFS), overall survival (OS), and objective response rate (ORR) vs S in patients (pts) with previously untreated aRCC in the primary analysis of the phase 3 CheckMate 9ER trial (18.1 mo median follow-up). C+N maintained efficacy benefits vs S with 44.0 mo median follow-up. Here, we report updated efficacy in intent-to-treat (ITT), and safety with extended follow-up.

METHODS
Pts with aRCC were randomized to N 240 mg every 2 weeks + C 40 mg QD vs S 50 mg QD (4 weeks of 6-week cycles) until disease progression or unacceptable toxicity, with up to 2 y of N. The primary endpoint was PFS per RECIST v1.1 by blinded independent central review (BICR). Secondary endpoints included OS, ORR per RECIST v1.1 by BICR, and safety.

RESULTS
323 pts were randomized to C+N and 328 to S (ITT). With 55.6 mo median (48.1 mo min.) follow-up for OS, median PFS was 16.4 vs 8.4 mo (hazard ratio [HR] 0.58, 95% CI 0.49- 0.70) and median OS was 46.5 vs 36.0 mo (HR 0.77, 95% CI 0.63-0.95) with C+N vs S. ORR (95% CI) was 55.7% (50.1-61.2) vs 27.7% (23.0-32.9); 13.6% vs 4.6% of pts achieved complete

response (CR); 6.5% vs 13.7% had progressive disease (PD), respectively. Anygrade TRAEs led to discontinuation of N or C in 28.1% of pts (N only, 10.0%; C only, 10.3%; C+N simultaneously, 6.6%; C+N sequentially, 1.3%) and of S in 10.9% of pts.

CONCLUSIONS

With 55.6 mo median follow-up, C+N continues to maintain meaningful longterm efficacy benefits over S. No new safety concerns were identified. These results continue to support C+N as a standard of care for previously untreated aRCC.

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IMPROVED *BRCA* PREDICTION FOR ASIAN BREAST CANCER PATIENTS

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INTRODUCTION

Accurate estimates of the individual likelihood of carrying a faulty gene, such as those provided by our Asian Genetic Risk Calculator (ARiCa), could empower women to make informed decisions about genetic testing. However, like other *BRCA*-likelihood prediction models that rely on factors associated with *BRCA* status, ARiCa is thus far less accurate in women without these predictive factors, such as those with oestrogen receptor-positive (ER+) breast cancers, or when family history of cancer is sparse.

MATERIALS & METHODS

Using data from 8,162 Asian women with breast cancer (122 *BRCA1* and 201 *BRCA2* carriers), we aimed to enhance the predictive accuracy of ARiCa for patients with ER+ disease or a limited family history. We evaluated the association of exogenous hormone use, reproductive history, and detailed family cancer history data with *BRCA* status and assessed whether inclusion of these factors improved the predictive accuracy, as measured by discrimination, calibration, and sensitivity.

RESULTS

We found that oral contraceptive use, age at first birth, and specific features of family history of cancers were associated with *BRCA* status. Incorporating these factors into ARiCa resulted in a well-calibrated model (Hosmer Lemeshow, p-value:0.680) with good discrimination between *BRCA* and non-*BRCA* carriers (Area Under Curve:0.81, 95% Confidence Interval:0.77-0.86). Overall sensitivity for *BRCA* detection increased from 71%[1] to 75%, notably improving for *BRCA2* carriers (63% to 67%), ER+ cases (58% to 70%), and individuals with a limited family history (77% to 96%).

DISCUSSION

We demonstrated that integrating exogenous hormone use, age at first birth, and detailed family cancer history into a *BRCA*-likelihood prediction model improves accuracy to detect *BRCA* carriers among breast cancer patients with ER+ breast cancer or a limited family history.

CONCLUSION

Customising model for specific Asian subpopulations improves *BRCA* prediction. Ongoing studies are underway to further enhance sensitivity through personalised thresholds or alternative modelling approaches.

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PERSONALIZED MUTATION TRACKING IN CIRCULATING-TUMOR DNA PREDICTS RECURRENCE IN PATIENTS WITH HIGH-RISK EARLY BREAST CANCER

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INTRODUCTION

Circulating tumor DNA (ctDNA) is a novel prognostic biomarker to predict recurrence in breast cancer (BC). Several sophisticated platforms to analyze ctDNA are available but the clinical implications of ctDNA monitoring at different stages of BC management are not well-defined.

MATERIALS & METHODS

168 patients with early-stage BC were recruited. Serial blood samples were collected pre-surgery and at scheduled visits post-surgery. ctDNA testing was performed using our tumor-informed K-Track assay, which sequenced tumor tissues for 95 cancer-associated genes followed by bespoke multiplex PCR to track 1-9 mutations in the plasma.

RESULTS

ctDNA was detected before surgery in 14.6%, 40.0%, 83.8%, and 80.0% of HR+ low-risk, HR+ high-risk, HR-HER2+, and HR-HER2- patients, respectively. Among all pre-treatment factors, detection of ctDNA before surgery reduced 24-month disease-free survival (DFS) by 5% in all stages. After a median 26.6-month follow-up, clinical recurrence was confirmed in 11.3% high-risk patients. At landmark time point, ctDNA was detected in 50.0% (5/10) of relapse cases. Landmark ctDNA clearance was associated with superior outcome, and ctDNA persistence after adjuvant therapy occurred in 45.5% (5/11) of stage-III patients. During surveillance, ctDNA detection had sensitivity and specificity to predict recurrence at 90.9% and 98.8%, respectively, and the median lead time of 9.7 months (up to 13.2 months). Patients with detected ctDNA had significantly shorter DFS compared to those with undetectable ctDNA (HR=137.9, $p<0.001$; 24-month DFS: 20.2% vs 98.8%).

DISCUSSION

Our assay is streamlined but reliable and accurate to detect ctDNA in plasma compared to other platforms [1, 2]. ctDNA-guided escalation for adjuvant therapy in stage-III BC might be worth exploring in the future.

CONCLUSION

ctDNA detection either before surgery, post surgery, or during surveillance could stratify patients who may benefit from therapeutic intervention or escalation.

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ONCOLOGISTS' EVALUATION OF THE FRAMEWORK OF STRATEGIES FOR MANAGING CHEMOTHERAPY-INDUCED NAUSEA AND VOMITING (CINV)

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INTRODUCTION

Addressing the barriers that hinder effective control of chemotherapy-induced nausea and vomiting (CINV) is crucial for improving cancer patient care. The complexity of these challenges requires a systematic exploration. A framework of strategies is designed to address barriers to effective CINV control, offering a structured, coordinated, systematic, and focused approach to guide professionals in their analysis, understanding, and resolution.

MATERIALS & METHODS

A framework of strategies was formulated from past research with recommended 33 action strategies and grouped into six main strategies: 1) Physician Education and Awareness; 2) Patient Engagement and Education; 3) Inclusion of olanzapine as CINV prophylaxis; 4) Individualized CINV Prophylaxis; 5) Multi-Disciplinary Team Approach; and 6) Real-Time Monitoring and Intervention. The strategies were compiled into draft survey questions, which were reviewed via email by six independent reviewers for content validity. After validation using a 5-point fuzzy scale, the final survey was emailed to oncologists nationwide. Oncologists' consensus on these strategies was established using the Fuzzy Delphi Method (FDM). Oncologists were selected based on stringent criteria: at least a Master's in Oncology or equivalent and a minimum of 5 years of oncology experience.

RESULTS & DISCUSSION

The analysis revealed a consensus among experts, with 28 out of 33 action strategies accepted for the framework for effective CINV control in Malaysia. Health literacy and cultural sensitivity in patient education emerged as the top two crucial strategies. In addition, a ranking of priority was performed where the prioritization of action strategies indicated that updating pharmacological knowledge, incorporating a systematic history review tool and regimen evaluation, and using standardized electronic CINV assessments based on patient self-reporting were also essential. However, five strategies were not favored, including quality improvement initiatives, continuous monitoring and feedback, and the multidisciplinary and collaborative approach, which did not receive strong support.

CONCLUSION

A revised framework with 28 action strategies was validated based on consensus from Malaysian oncologists. This framework marks a paradigm shift toward a more holistic and effective approach, advancing CINV control and enhancing patient care.

SWALLOWING ASSESSMENT IN PATIENTS WITH ORAL TONGUE SQUAMOUS CELL CARCINOMA (OTSCC) TREATED WITH UPFRONT BRACHYTHERAPY VERSUS SURGERY

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INTRODUCTION

This study aimed to analyze the differential impact of surgery and brachytherapy on swallowing outcomes among OTSCC patients. Our goal is to provide medical professionals with a nuanced understanding of the functional implications of these two primary treatment options.

MATERIALS & METHODS

We conducted a cross-sectional study with 32 participants between June 2022 and October 2023. Twelve of these patients were treated with brachytherapy followed by Intensity Modulated Radiation Therapy (IMRT) technique for definitive management, and the remaining 20 underwent surgical procedures. Each participant had histopathological confirmation of OTSCC, imaging-confirmed complete response, and remained tumor-free for at least six months after post-treatment. The average duration for post-treatment follow-ups was 11.7 and 30 months, respectively. Detailed records were maintained regarding the different stages of the disease and the specific treatments each group received. Swallowing outcomes were assessed using three primary metrics: the swallowing capacity scale, the EAT-10 score, and the Penetration-Aspiration Scale (using Flexible Endoscopic Evaluation of Swallowing). The Mann-Whitney Test was employed for statistical analyses.

RESULTS AND DISCUSSION

The swallowing capacity scale showed that patients in the brachytherapy group had a superior swallowing capacity, with a median score of 7, compared to the surgical group's median score of 4.5. This difference was statistically significant with a p-value of <0.001. In the EAT-10 score assessment, the brachytherapy group reported a better median score of 7, compared to the surgical group's median of 19.5, with a p-value of 0.035, indicating statistical significance. Similarly, for the Penetration Aspiration Scale using both liquid and semi-solid bolus, the brachytherapy group consistently outperformed with a median score of 1, compared to the surgical group's median score of 2. This result had a p-value of 0.022, confirming statistical significance.

CONCLUSION

Our study underscores the advantages of brachytherapy over surgical treatments regarding swallowing function preservation in OTSCC patients. These findings emphasize the importance of considering functional outcomes and treatment options during the decision-making process for OTSCC.

AVELUMAB FIRST-LINE MAINTENANCE FOR ADVANCED UROTHELIAL CARCINOMA: REAL-WORLD RESULTS FROM THE EARLY ACCESS PROGRAM IN MALAYSIA

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BACKGROUND

In the JAVELIN Bladder 100 phase 3 trial, avelumab first-line (1L) maintenance plus best supportive care (BSC) significantly prolonged overall survival and progression-free survival vs BSC alone in patients with locally advanced or metastatic urothelial carcinoma (la/mUC) that had not progressed following 1L platinum-based chemotherapy. In Malaysia, avelumab 1L maintenance treatment was available via an early access program (EAP). The EAP closed in January 2023, and avelumab became available commercially in July 2023. We report data from patients who received treatment in the EAP.

METHODS

Eligible patients had la/mUC and were progression free following 1L platinum-based chemotherapy. Patients received avelumab 800 mg (flat dose) or 10 mg/kg every 2 weeks (physician's choice) until progression or unacceptable toxicity. Data were collected retrospectively.

RESULTS

In total, 13 patients received avelumab 1L maintenance treatment via the EAP at 9 hospitals in Malaysia. Seven patients (53.8%) were female, and ECOG performance status prior to 1L chemotherapy was 0/1 in 11 (84.6%) and 2 in 2 (15.4%). Prior 1L chemotherapy was cisplatin based in 6 (46.2%) and carboplatin based in 7 (53.8%). Best response to 1L chemotherapy was complete response in 1 (7.7%), partial response in 7 (53.8%), and stable disease in 5 (38.5%). Avelumab dose was 800 mg in 11 (84.6%) and 10 mg/kg in 2 (15.4%). Median duration of avelumab treatment was 9 months, with 4 patients (30.8%) still on treatment at last assessment. Reasons for discontinuation were disease progression in 8 (61.5%) and patient withdrawal in 1 (7.7%). Adverse events occurred in 3 patients (23.1%) and were grade 2 in 1 (7.7%) and grade 1 in 2 (15.4%).

CONCLUSIONS

Despite the small sample size, EAP results show the tolerability of avelumab 1L maintenance in real-world patients with la/mUC without progression following 1L platinum-based chemotherapy in Malaysia.

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HRQOL WITH TEPOTINIB IN PATIENTS WITH *MET*EX14 SKIPPING NSCLC WITH BRAIN, LIVER, ADRENAL OR BONE METASTASES IN THE PHASE II VISION TRIAL

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INTRODUCTION

Tepotinib, a highly selective MET inhibitor, showed robust and durable activity in patients with *MET*ex14 skipping NSCLC in the VISION trial (NCT02864992). Systemic and intracranial activity was seen in patients with brain metastases. Secondary endpoints in the overall population showed stability in overall HRQoL, dyspnea and chest pain, with clinically meaningful improvement in cough. We analyzed HRQoL in patients with brain, liver, adrenal, or bone metastases.

METHODS

Eligible patients (including patients with brain metastases if asymptomatic or neurologically stable on a stable steroid dose) received oral tepotinib 500 mg (450 mg active moiety) QD. HRQoL was assessed at baseline and during follow-up using EORTC QLQ-C30 GHS, EQ-5D-5L VAS, and EORTC QLQ-LC13 cough, dyspnea, and chest pain scores. Subgroup analyses evaluated patients with brain, liver, adrenal, or bone metastases at baseline per independent review (data cut-off: November 20, 2022). Mean change from baseline across all visits was evaluated by linear mixed model regression.

RESULTS

Of 313 enrolled patients, change from baseline in HRQoL was evaluable in 52 patients with brain, 56 with liver, 54 with adrenal, and 86 with bone metastases. At baseline, mean ± SE, EORTC QLQ-C30 GHS was worst in patients with bone metastases (49.90±2.03), followed by patients with adrenal (51.85±2.51), liver (58.33±2.77), or brain metastases (59.94±2.53). A similar pattern was observed for baseline EQ-5D-5L VAS (bone: 60.42±1.94; adrenal: 63.06±2.45; liver: 65.30±2.46; brain: 66.75±2.57). During tepotinib treatment, overall HRQoL remained stable in patients with brain, liver, adrenal, or bone metastases. Symptom scores in

these patients showed trends for improvement in cough, with stability in dyspnea and chest pain.

CONCLUSION

In the VISION trial in *MET*ex14 skipping NSCLC, patients with brain, liver, adrenal, or bone metastases maintained overall HRQoL during tepotinib treatment, with trends for improvement in cough, consistent with results for the overall population.

UPDATED RESULTS OF PHASE 3 GLOW STUDY EVALUATING ZOLBETUXIMAB + CAPOX IN CLDN18.2+ HER2− ADVANCED GASTRIC OR GASTROESOPHAGEAL JUNCTION ADENOCARCINOMA

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BACKGROUND

The GLOW study showed significant improvement with first-line (1L) zolbetuximab + CAPOX vs placebo + CAPOX in PFS and OS in patients with CLDN18.2+, HER2−, locally advanced (LA) unresectable or metastatic gastric/gastroesophageal junction (mG/GEJ) adenocarcinoma. We present an updated analysis with 8.7 months additional follow-up.

METHODS

Patients were randomly assigned 1:1 to zolbetuximab IV 800 mg/m^2 (cycle 1, day [D] 1) followed by 600 mg/m^2 (every 3 weeks) + CAPOX (oral capecitabine BID D1–14; oxaliplatin

IV D1) for eight 21-day cycles or placebo + CAPOX; patients without disease progression continued beyond cycle 8 with zolbetuximab or placebo, + capecitabine (investigator's discretion), until disease progression or discontinuation criteria were met. Primary endpoint was PFS per RECIST v1.1 by IRC; OS was a key secondary endpoint.

RESULTS

At data cutoff (June 29, 2023), 507 patients were assigned to zolbetuximab + CAPOX (n=254) or placebo + CAPOX (n=253). In zolbetuximab vs placebo arms, median follow-up was 17.8 vs 15.1 months for PFS and 26.1 vs 26.2 months for OS, respectively. Median PFS in zolbetuximab vs placebo arms was 8.3 vs 6.8 months (HR 0.68 [95% CI 0.55–0.85], *P*=0.0004). Median OS in zolbetuximab vs placebo arms was 14.3 vs 12.2 months (HR 0.77 [95% CI 0.62–0.95], *P*=0.0079); 24-month OS rate was 28.3% vs 18.8%. Most common TEAEs with zolbetuximab + CAPOX were nausea (zolbetuximab arm: 68.9% vs placebo arm: 50.2%), vomiting (66.1% vs 31.3%), and decreased appetite (41.3% vs 34.5%); incidences of serious TEAEs were similar between arms (48.0% vs 50.6%).

CONCLUSION

Zolbetuximab + CAPOX continued to demonstrate statistically significant improvement in PFS and OS compared with placebo + CAPOX, with no new safety signals, supporting zolbetuximab + CAPOX as a potential new option for 1L treatment of patients with CLDN18.2+, HER2−, LA unresectable or mG/GEJ adenocarcinoma.

PREVALENCE OF HER2-LOW BREAST CANCER PATIENTS IN SUBANG JAYA MEDICAL CENTRE (SJMC)

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INTRODUCTION

A new subtype of breast cancer (BC) called HER2-low, identified by a HER2 score of 1+ by immunohistochemistry (IHC) or 2+ by IHC with negative HER2 amplification by in situ hybridization (ISH)[1] was recognized recently. Identifying HER2-low patients is crucial as they may be able to benefit from anti-HER2 antibody drug conjugate (ADC) approved for HER2-low unresectable or metastatic breast cancer[1]. The aim of this study is to determine the prevalence of HER2-low among BC patients referred to SJMC laboratory.

MATERIALS & METHODS

A retrospective observational study was performed using data from SJMC laboratory. BC patients with FISH HER2 and/or IHC performed in the year 2023 were analyzed and categorized into HER2-positive, HER2-negative and HER2-low.

RESULTS

A total of 1101 requests for FISH HER2 and/or IHC testing was received for primary, recurrent and metastatic BC. Based on the new definition, 32.6% of these patients were HER2-low. From the samples tested, 158 were triple-negative BC with 32.3% (n=51) of them being reclassified to HER2-low, hormone receptor-negative. FISH performed for IHC scored 2+ (n=365) revealed that 75.3% of initially HER2-negative patients were reclassified to HER2-low.

DISCUSSION

A significant number of patients have been reclassified as HER2-low, potentially making them eligible for ADCs, depending on their clinical status and treatment history. Among the HER2-low patients identified, 32 were diagnosed with metastatic breast cancer, rendering them eligible for ADC treatment.

CONCLUSION

This study highlighted the importance of performing an initial IHC (to detect 1+) and reflex FISH testing for those scoring 2+ as many of them may be HER2-low and be able to benefit from ADCs.

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BIOINFORMATICS ANALYSES TO ELUCIDATE METASTASIS-RELATED GENES IN METASTATIC NASOPHARYNGEAL CARCINOMA (NPC)

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BACKGROUND
Nasopharyngeal carcinoma (NPC) is a prevalent malignant tumour in Southeast Asia. The survival rate for NPC remains low due to the reduced efficacy of treatments as primary tumours progress to metastatic disease. Understanding the molecular mechanisms underlying NPC metastasis is crucial for improving diagnostic and therapeutic strategies.

AIMS
This study aimed to identify significant genes that may serve as potential biomarkers for the progression of primary NPC tumours to metastatic disease using various bioinformatics analyses.

METHODS
RNA sequencing data from paired primary and metastatic NPC tumours (HRA000035) were obtained from the Genome Sequence Archive (GSA). Differential expression gene (DEG) analysis was performed using the DESeq2 package in R. The identified DEGs were further analysed through Gene Ontology (GO) enrichment, Kyoto Encyclopedia of Genes and Genomes (KEGG) pathway analysis, and Gene Set Enrichment Analysis (GSEA). In addition, protein-protein interaction (PPI) networks were constructed using the STRING database and Ctyoscape.

RESULTS
DEG analysis identified 146 upregulated and 518 downregulated significant genes. Several enriched pathways were related to cilium movement, complement and coagulation cascades, PPAR signalling pathway, lipid metabolism, serine-type peptidase activity, and innate immune system. Twenty hub genes were identified from the PPI networks analysis.

CONCLUSION
We identified the significant genes and pathways related to cancer metastasis from the paired primary and metastasis samples. However, further experiments are required to validate these findings and provide insights into the underlying mechanism of NPC metastasis. These findings can guide clinical research and the development of pharmaceutical targets for NPC treatment.

PATIENT SCALP COOLING EXPERIENCES

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INTRODUCTION

Chemotherapy-induced alopecia (CIA) is a distressing side effect for many cancer patients. Scalp cooling is a technique used to prevent hair loss during chemotherapy by reducing the temperature of the scalp, thereby minimizing the effect of chemotherapeutic agents on hair follicles. This case study examines the effectiveness of scalp cooling in patients undergoing weekly chemotherapy with Paclitaxel (Pacli) and Carboplatin (Carbo).

REPORT

8 patients undergoing weekly chemotherapy with Pacli and Carbo completed 18 sessions of scalp cooling. The assessment included hair retention outcomes, patient feedback, and photographic documentation (Patient 1 to 4) of scalp condition at various stages of treatment and post-treatment recovery.

Patient 1 & 2: Both patients reported not being successful in retaining hair, necessitating the use of headgear to cover hair loss, particularly at the crown. However, both experienced satisfactory and faster hair regrowth 12 to 15 weeks post-chemotherapy.

Patient 3: Similar to the first two patients, this patient also did not retain hair effectively during treatment and required headgear. Hair regrowth was observed to be satisfactory post-treatment with full hair growth 10 weeks post-chemotherapy.

Patient 4, 5, 6, 7 & 8: These patients reported successful hair retention throughout the treatment process, with minimal hair loss and no bold spot. Patient feedback indicated high satisfaction with the scalp cooling results.

CONCLUSION

Scalp cooling shows varying degrees of success in preventing CIA among patients undergoing chemotherapy with Pacli and Carbo. While some patients did not retain hair during treatment, all reported satisfactory faster hair regrowth post-chemotherapy. The differing outcomes highlight the need for personalized approaches and further research to enhance the effectiveness of scalp cooling techniques.

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CYTOGENETICS ABNORMALITIES OBSERVED AMONG MULTIPLE MYELOMA PATIENTS IN MALAYSIA

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INTRODUCTION

Multiple Myeloma (MM) is a heterogeneous cancer of plasma cells in the bone marrow. Recent studies suggest MM initiates primarily via hyperdiploid or translocations of the immunoglobulin heavy chain gene (IGH) with other oncogenes[1] while other genetic mutations are classed as secondary events that occur during disease progression[2]. This study provides statistics on the cytogenetic abnormalities observed among MM patients in Malaysia, thus elucidating the population's susceptibility to specific genetic abnormalities in MM.

MATERIALS & METHODS

Sixty-eight multiple myeloma cases were tested from January to December 2023. Bone marrow samples were taken from each patient and processed. The extracted cells were dropped on positively charged slides, and the standard Fluorescence in situ hybridization (FISH) procedure was performed. XL METASYSTEMS probes were used to investigate different gene loci. The abnormalities observed in each gene loci were tabulated and analyzed.

RESULTS

35 cases (51.4%) showed positive results for one or more genetic abnormalities, while the other 33 showed negative results for all 11 probes. Polysomy of chromosome 9, deletion 13q and gain/amp of 1q21 were the most prevalent abnormalities, each observed in 16 cases (46%). For rearrangement involving the IGH gene at chromosome 14, t(4;14) was the most common, with 6 cases (17%), while t(11;14) was the second most common, with 4 cases (11%). Secondary abnormalities were also observed, such as gain/amplification of 11q13 in 16 cases (46%).

DISCUSSION

This study showed that polysomy of chromosome 9 and deletion 13q associated with standard-risk disease and gain/amp of 1q21 associated with high-risk disease are the most common genetic abnormalities among MM patients. For IGH translocations, only t(4;14) and t(11;14) were observed among patients.

CONCLUSION

As MM is a heterogeneous disease that results in different prognoses, the statistics in this study are paramount in understanding the genetic susceptibility in MM disease among Malaysian population.

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REAL-WORLD TREATMENT PATTERNS AND EFFECTIVENESS OF SUBSEQUENT TREATMENTS FOLLOWING FIRST-LINE (1L) BRIGATINIB FOR PATIENTS WITH ALK+ NSCLC

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INTRODUCTION

Brigatinib, an ALK tyrosine kinase inhibitor (TKI), showed superior clinical efficacy in 1L for *ALK*+ NSCLC compared to crizotinib in the phase III ALTA-1L trial. There is a lack of data on real-world treatment patterns and outcomes post-1L brigatinib.

MATERIALS & METHODS

This non-interventional, multicenter, retrospective chart review study included patients with *ALK*+ NSCLC previously enrolled in the brigatinib arm of ALTA-1L. Patients who

discontinued 1L brigatinib (index event) were followed from the last dose of brigatinib. Time to treatment discontinuation (TTD), progression-free survival (PFS) for the 2L therapy, time from randomization of ALTA-1L to the date of disease progression on 2L therapy or death (PFS2), and overall survival (OS) were estimated using Kaplan-Meier methods.

RESULTS

As of Oct 18, 2023, 48 patients (median age=58 years; male=45.8%; White=43.8%; Asian=54.2%) were enrolled with a median follow-up of 12.4 months. 40 (83.3%) had received subsequent systemic anticancer therapies. Of these, 30 (75%) had received 2L ALK TKIs: 16 (53%) had received lorlatinib, 8 (27%) had received alectinib, 6 (20%) had received crizotinib. Overall response rate and disease control rate for 2L ALK TKIs were 33.3% and 70.8%, respectively, and for 2L lorlatinib were 30.8% and 76.9%, respectively. Median PFS and PFS2 (95% CI) was 16.1 (4.4, NR) months and 51.6 (25.9, NR) months with estimated 24-month PFS and PFS2 rates of 47% (26.2, 65.3) and 78.4% (58.1, 89.7) for 2L ALK TKIs, while median PFS and PFS2 was 25.6 (3.8, NR) months and 74.7 (25.9, NR) months with estimated 24-month PFS and PFS2 rates of 53.4% (23.9, 76.0) and 86.7% (56.4, 96.5) for 2L lorlatinib.

CONCLUSION

Most patients started another ALK TKI after discontinuing 1L brigatinib. ALK TKIs offered clinical benefit after 1L brigatinib, suggesting brigatinib is an effective 1L treatment choice followed by other ALK TKIs, including lorlatinib.

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SOFTWARE FOR AUTOMATED CALCULATION OF PTV MARGINS FROM CBCT-BASED IGRT PROTOCOLS

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INTRODUCTION

Each radiotherapy center should develop site-specific Planning Target Volume (PTV) margins and Image-Guided Radiotherapy (IGRT) correction protocols to address institution-specific and treatment site specific geometric errors during treatment. This work developed a software for automatically extracting setup errors from Cone Beam Computed Tomography (CBCT)-based Image-Guided Intensity-Modulated Radiotherapy (IG-IMRT) system and then calculating the PTV margins.

MATERIALS & METHODS

An algorithm was developed using MATLAB to extract setup errors in three translational directions (x, y, and z) from CBCT data during treatment delivery. The software package of the algorithm then calculates population setup error and PTV margin based on the van Herk margin recipe and estimates these values for No Action Level (NAL) and extended No Action Level (eNAL) offline correction protocols.

RESULTS

The software was tested on various treatment sites including head and neck and breast cases treated with IG-IMRT. The results show that using eNAL, these margins can be reduced further compared to eNAL. The results were consistent with margins calculated using an Excel spreadsheet. The software provides weekly offline setup error correction values, reducing input data error risk observed in the spreadsheet method.

DISCUSSION

The software provides an efficient and accurate method for calculating setup error corrections and PTV margins, facilitating the development of institutional-based PTV margins and IGRT protocols. The automation reduces the risk of human error and the time required for manual data entry and calculations.

CONCLUSION

In conclusion, the software offers an automated method for optimizing and reducing PTV margins using logged setup errors from CBCT-based IGRT. This automation facilitates the development of institutional-based site-specific PTV margins and IGRT protocols, enhancing treatment precision and efficiency.

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BEAMING MIRACLE – THE TRIUMPH OF RADIOTHERAPY IN BATTLING CONDYLOMA ACUMINATUM. A CASE REPORT

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BACKGROUND

Condyloma acuminatum (CA), predominantly associated with human papillomavirus (HPV) strains 6 and 11, presents a rare yet clinically significant challenge in oncology. Pathologically characterized by excessive squamous epithelial cell growth, CA often manifests as cauliflower-like lesions in the anogenital region, with infiltration into adjacent tissues. Despite various treatment modalities such as topical agents, cryotherapy, electrocautery and laser therapy, CA frequently exhibits resistance with high rates of recurrence. Here, we present a case of extensive CA in a Retro-viral Disease (RVD)positive patient, offering renewed optimism and therapeutic avenues for patients with refractory CA.

CASE REPORT (METHODS AND RESULTS)

This is a 44-year-old gentleman with underlying RVD who presented with perineal warts since 2020. Despite receiving multiple topical medications and repeated cryotherapy, the lesions worsened and spread extensively, covering the entire genital area from the penis to the intergluteal fold. Biopsy revealed a diagnosis of Condyloma Acuminatum. These lesions are cosmetically disfiguring and brought him significant morbidity which includes limited mobility and frequent ward admissions due to infections and bleeding. Surgical removal deemed impractical due to extensive lesions. Consequently, he was referred to oncology team for consideration of radiotherapy. He then received radiotherapy to the lesions with a dose of 30Gy in 10 fractions over 2 weeks. Radiotherapy was given with 3D Conformal planning technique, 10 MV photon energy, anterior-posterior beam and bolus coverage over the treatment field. He tolerated the radiotherapy course with no toxicities. Six months post-radiotherapy, most of the lesions has subsided leaving a few residual lesions, largest being 4cm. His quality of life improved significantly, transitioning from bedbound to activities of daily living (ADL) independence, and reinstating his ability to engage in social and occupational pursuits.

DISCUSSION AND CONCLUSION

Radiotherapy emerges as a promising salvage therapy for CA, exhibiting remarkable efficacy in this case. The significant improvement observed underscores its potential as a viable alternative when conventional treatments fail. However, additional research is needed to establish optimal radiotherapy techniques, dosages and fractionation protocols, aiming to maximize therapeutic efficacy while minimizing potential adverse effects, as current evidence remains inconclusive. Early multidisciplinary collaboration between oncologists and dermatologists can enhance patient care by facilitating tailored treatment plans for potentially complex cases. Despite its promise, careful patient selection and consideration of alternative treatment approaches remain crucial, given the risk of enhanced radiation-related complications, especially in RVD-positive patients. Moreover, clinicians must exercise caution to avoid overtreatment, considering the risk of secondary malignancies associated with radiotherapy in managing this benign condition.

AMICABLE RESPONSE IN COMBINING SYSTEMIC THERAPIES AND SELECTIVE INTERNAL RADIATION THERAPY (SIRT) IN INOPERABLE PRIMARY AND SECONDARY LIVER TUMOURS: CASE SERIES

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INTRODUCTION

Selective Internal Radiation Therapy (SIRT) is a form of localized radiation therapy utilizing radioactive-labelled (typically Yttrium-90, Y^{90}) microspheres for the treatment of primary and secondary liver tumours. This treatment is delivered via an intra-arterial injection with resulting retention of the microspheres within the tumoral vasculature. Y^{90} releases beta particles which results in tumoral necrosis, with additional immunomodulatory effect; resulting in a sustained response even beyond 6-months post-therapy. Tyrosine kinase inhibitors, TKIs (e.g. Lenvatinib) and selective cyclin-dependant kinase inhibitor (ribociclib) may work synergistically with radiation therapy to promote intrinsic and extrinsic apoptosis.

REPORT

We report cases of favourable biochemical and radiological response in patients who received a combination of systemic and SIRT therapies. A 63-years old male with hepatocellular carcinoma was referred for SIRT as the lesion was deemed unresectable due to inadequate liver reserve. He received 2.3GBq of Y^{90} microspheres with planned dose of 200Gy to the tumour. Lenvatinib was started post-SIRT. Four months later, there was a remarkable reduction in tumour volume from 515cm^3 to 180cm^3, making him eligible for surgical resection. Another patient with hepatocellular carcinoma, a 66-years old male with a tumour at segment IV and right portal vein thrombosis. He received 0.8GBq of Y^{90} microspheres with planned 150Gy to the tumour and was started on Lenvatinib post-SIRT. Three months post-therapy, the tumour volume reduced from 81cm^3 to 19cm^3 with reduction in alpha fetoprotein (AFP) from 1126ng/ml to 58.7ng/ml. A 75-years old female with breast carcinoma and biopsy-proven liver metastases received 1.2GBq of Y^{90} microspheres with planned 120Gy to the tumour and was subsequently started on Ribociclib. Pre-treatment FDG PET-CT showed an intense focus of FDG uptake in a segment VIII liver lesion. One-year post-treatment, there was marked reduction in metabolic size and activity of the lesion. None of these patients demonstrated significant adverse events, Common Terminology Criteria for Adverse Events (CTCAE) < 3.

CONCLUSION

In conclusion, these cases illustrate the potential role of combining systemic therapies with SIRT, which could be explored in future clinical trials.

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REAL-WORLD APPLICATION OF A MULTICANCER EARLY DETECTION TEST TO DETECT CANCERS LACKING RECOMMENDED SCREENINGS

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INTRODUCTION

Early detection of cancer is crucial for improving patient prognosis and survival rates. However, aggressive cancers that lack established standard-of-care (SOC) screenings account for more than 60% of all cancer diagnoses and approximately 71% of cancer deaths, creating significant challenges in timely diagnosis and treatment. Our group has developed a Multi-Cancer Early Detection (MCED) test, known as SPOT-MAS, which is a multimodal assay profiling multiple methylation and fragmentomic signatures in plasma cell-free DNA to complement current single-cancer screening tests.

MATERIALS & METHODS

To validate the efficacy of the SPOT-MAS test, we conducted a prospective multi-center clinical study, named K-DETEK (ClinicalTrials.gov identifier: NCT05227261), on an intended use population of 9,057 asymptomatic participants.

RESULTS

Out of 9,024 eligible participants, 43 (0.48%) showed a positive cancer signal. Of those, 25 (58.1%) were diagnosed with cancer through standard imaging and biopsy tests. Among these 25 true positive cases, 7 (28%) were diagnosed with six cancer types lacking SOC screenings, including liver (n=1), myeloma (n=1), cholangiocarcinoma (n=1), jejunal mesenteric lymphoma (n=1), gastric cancer (n=2), and endometrial cancer (n=1). Five of these cases were diagnosed at early stages (stage I and II). Our findings suggest that an MCED test could enhance early detection of cancers lacking SOC screening, providing opportunities for more effective treatment.

DISCUSSION

Large-scale clinical studies in diverse populations are required to further provide evidence for the potential of the SPOT-MAS test in complementing existing single-cancer screening tests and assess the clinical benefits of this combination strategy.

CONCLUSION

To our knowledge, our study represents the most comprehensive and largest validation study in Asia supporting the utility of SPOT-MAS as a multi-cancer blood test for early cancer detection, particularly lacking cancer screening program.

A CASE REPORT OF ESOPHAGEAL ALK-EXPRESSING INFLAMMATORY MYOFIBROBLASTIC TUMOUR (IMT) TREATED WITH CRIZOTINIB IN A PATIENT WITH A HISTORY OF MEDIASTINAL MIXED GERM CELL TUMOUR.

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BACKGROUND

Inflammatory Myofibroblastic Tumour (IMT) is a rare soft tissue tumour of neoplastic origin with possible ALK gene expression, typically occurring in children and young adults with no well-defined risk factors. [1,2] Complete resection remains the treatment of choice for potential cure. [1,2] We present a case of unresectable IMT with background history of mediastinal germ cell tumour (GCT), treated successfully with an ALK inhibitor.

CASE

A 27-year-old male with histopathologically confirmed and treated mediastinal GCT in 2020, presented with progressive dysphagia and cough in March 2023. In 2020, he presented with raised AFP and BHCG, and a mediastinal mass measuring 10cm. He subsequently completed four cycles of BEP chemotherapy regime to achieve normalization of tumour markers and radiological partial response. He remained well until 2023 when a CT thorax revealed a large enhancing soft tissue mass in the oesophagus measuring 15.5cm, causing significant luminal obstruction and mass effect to the surrounding structures, and no recurrence of mediastinal mass. His AFP and BHCG in 2023 remained normal. Two biopsies of the esophageal mass confirmed ALK-expressing IMT. Patient was given trial of NSAID with Celebrex from April - May 2023 and subsequently started on ALK inhibitor from compassionate access, using Crizotinib 250mg BD from May 2023. He showed marked and immediate clinical improvement with no adverse reactions to treatment, allowing safe palliative radiotherapy to oesophageal mass in July 2023. CECT TAP after 10 months of Crizotinib showed partial response with shrinkage of oesophageal mass to 4.5cm. Patient is currently still on Crizotinib and is planned for reassessment imaging later with aim of definitive surgery if feasible.

CONCLUSION

ALK-expressing IMT is a rare tumour without a standard systemic treatment, and no previously known correlation with GCT. This case illustrates the significant impact of personalized treatment based on molecular profile to improve survival and outcome.

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TOGETHER: POOLED REAL-WORLD DATASETS OF METEX14 SKIPPING NSCLC AND ADJUSTED COMPARISON OF UPFRONT (CHEMO) IMMUNOTHERAPY WITH TEPOTINIB FROM VISION

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INTRODUCTION

The TOGETHER study was designed for flexible pooling of *MET*ex14 skipping non-small cell lung cancer (NSCLC) patient datasets to characterize real-world (rw) outcomes before approval of MET inhibitors.

METHODS

Seven datasets were used to analyze rwPFS and rwOS in advanced NSCLC with *MET*ex14 skipping according to Kaplan-Meier. Indirect treatment comparisons (ITC) were performed with propensity score reweighting of patients who received 1L immunotherapy (IO) alone or with chemotherapy (chemo) to match the characteristics of 111 patients with positive tissue biopsies (T+) who received 1L tepotinib in the VISION study (NCT02864992; data cut: Nov 2022).

RESULTS

As of Jan 2023, TOGETHER included 309 patients (mean age 71.1 years, 48% male, 52% with smoking history), with 615 lines of therapy administered between 2004 and 2022.

For 1L IO+chemo (n=26) median rwPFS was 5.7 months before and 6.9 months after weighting, compared to 15.9 months for 1L tepotinib (HR 0.52 [0.29, 0.93]; p=0.03).

For 1L IO monotherapy (n=48), median rwPFS was 3.9 months before and 3.4 months after weighting compared to 15.9 months for 1L tepotinib (HR 0.37 [95% CI 0.24–0.58]; p<0.01).

Although confounded by subsequent treatments, median OS was also longer for tepotinib compared to IO+chemo (29.7 months vs 22.1 months; HR 0.77; p=0.38) and IO monotherapy (29.7 months vs 18.9 months; HR 0.64; p=0.05). Other rw 1L treatments were chemo (n=128), median rwPFS 4.8 months and crizotinib (n=62) median rwPFS 7.4 months. Median rwPFS was shorter for 2L+ chemo (4.3 months, n=95) or 2L+ IO monotherapy (3.3 months, n=83), and longer for 2L+ crizotinib (8.1 months, n=68).

CONCLUSIONS

This large retrospective analysis shows poor rw outcomes for *MET*ex14 skipping NSCLC patients under standard treatments prior to the uptake of novel MET inhibitors. Matched ITC suggests longer PFS and OS with 1L tepotinib compared to 1L IO+chemo or IO monotherapy.

OPTIMIZING PROSTATE SBRT WITH RECTAL SPACER AND FIDUCIAL MARKER

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INTRODUCTION

Stereotactic Body Radiation Therapy (SBRT) for prostate cancer is becoming more common because it is precise and effective. It is important to reduce radiation exposure to the rectum and to visualize the exact positioning of the prostate. This study investigates the optimization of prostate SBRT through the use of a rectal spacer and fiducial markers.

MATERIALS & METHODS

A group of prostate cancer patients receiving SBRT was chosen for this study. Rectal spacers, Barrigel from Palette Life Sciences and Gold Anchor fiducial markers were placed in the prostate before simulation. Patients were setup using immobilization device including wingboard, vacuum bag (Klarity 100 x 70), and feet fixation. Treatment plan of 36.25Gy in 5 fractions was done by using Monaco 6.1.2. Doses to the rectum were optimized following RTOG 0938 [1]. CBCT image was acquired [2] and was verified using the Elekta Versa HD XVI version 5.0.4 system and HEXAPOD Evo system. Values of translational and rotational shift were recorded.

RESULTS

Dose to the rectum showed significant difference between the group with rectal spacer and the group without. D_{1cc} had a p-value of 0.0395, whereas D_{3cc}, $D_{10\%}$, $D_{20\%}$, $D_{50\%}$ were 0.0275, 0.0349, 0.0168, and 0.0327 respectively. The translational and rotational discrepancy between group with fiducial markers and without showed significant difference with p-value of 0.0030 and 0.0216 respectively, indicating a significant improvement in accuracy with the markers.

DISCUSSION

Rectal spacer greatly reduced the radiation dose to the rectum, with the data showing a significant decrease in all aspects. The use of fiducial markers helped to precisely align the prostate before treatment, in terms of the visualization of prostate. With the ease of fiducial marker, both the translational and rotational shift can be confidently applied.

CONCLUSION

The usage of rectal spacer and fiducial markers in prostate SBRT significantly reduces dose to the rectum and improves treatment precision.

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ENHANCING LUNG CANCER MUTATION DETECTION THROUGH COMBINED TISSUE AND CIRCULATING TUMOR DNA PROFILING

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INTRODUCTION

Tissue-based next-generation sequencing (NGS) is the standard for identifying somatic mutations in solid tumors that are actionable under the National Comprehensive Cancer Network guidelines. The diagnostic potential of circulating tumor DNA (ctDNA) sequencing is increasingly recognized, yet the comparative and combined clinical value of concurrent tissue and ctDNA profiling remains underexplored in lung cancer.

MATERIALS & METHODS

A cohort study was conducted involving 52 patients with stage III and IV lung cancer. Patients underwent concurrent tissue and ctDNA sequencing from July 2023 to February 2024, using the Illumina TruSight Oncology 500 comprehensive gene profiling for tumor biopsy and the Illumina TruSight Oncology 500 ctDNA assay for ctDNA profiling. The primary measure was the concordance between tissue profiling vs ctDNA, and the detection rate of actionable variants uniquely identified by either ctDNA or tissue profiling.

RESULTS

Out of 52 patients (median age 62.4 years), actionable variants were detected in 50 patients (96.2%) by either method. Concordance between tissue and ctDNA profiles was observed in 41 cases (78.8%). In discordant cases, ctDNA profiling detected additional genomic alterations in 8 patients (15.4%)..

CONCLUSION

The findings suggest that ctDNA testing can identify additional actionable genomic alterations not detected by tissue-based NGS, highlighting its potential to complement traditional tissue profiling in the management of lung cancer especially in metastatic cases. This integration could significantly enhance the precision of mutation detection and treatment planning.

TOTAL NEOADJUVANT THERAPY IN LOCALLY ADVANCED RECTAL CANCER: A MONO-INSTITUTIONAL RETROSPECTIVE STUDY

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INTRODUCTION

Total neoadjuvant therapy (TNT) evolved as the new standard for treatment of locally advanced rectal cancer (LARC)[1]. We report our single institution experience of TNT, which is short course preoperative radiation followed by consolidation neoadjuvant chemotherapy (NACT) and subsequent rectal surgery as per RAPIDO trial[2].

MATERIALS & METHODS

We retrospectively analyzed the results of patients with LARC treated with TNT from a single institution. Patients with LARC (cT4-T2 and/or cN0-2 and/or threatened circumferential resection margin (CRM)) were recruited. Pathological response was assessed using the Tumor Regression Grading (TRG) scale.

RESULTS

A total of 27 patients with median age of 60 years diagnosed from November 2021 to June 2023 initiated TNT were analyzed, which 22 patients (81.5%) completed TNT, 5 patients (18.5%) did not complete due to disease progression (60%), deteriorated performance status (20%) and surgical complication (20%). Pathological complete response rate(pCR) was 5%(n=1) TRG-0(Complete regression), 9%(n=2) TRG-1(Moderate Response), 50%(n=11) TRG-2(Minimal Response) and 36%(n=8) TRG-3(Poor to No response). 40.9%(n=9) completed TNT per schedule while 59.1%(n=13) had treatment schedule delay due to NACT toxicity. Mean NACT was 17.2 weeks compared total planned 18 weeks- NACT (6 CAPOX/9 FOLFOX). Significant toxicity like hepatoxicity (19%), thrombocytopenia (19%) and neurotoxicity (15%) accounts to be the highest. After median follow up of 8.5months (range:2-18 month), 23%(n=5) progressed with metastatic disease, which 2 patients TRG-3 and 3 patients TRG-2.

DISCUSSION

TNT was demonstrated to improve pCR and disease-free survival (DFS) with tolerable toxicities[3], however proportion of patient in our institution demonstrates lower pCR rates than reported studies[4], with significant toxicities and early disease progression.

CONCLUSION

Despite worldwide data supports towards TNT as a new standard of care for rectal cancer however optimal pre-operative treatment of LARC still debatable. Further Asian studies reporting real- world data are needed.

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PNEUMONITIS CHRONICLES: UNRAVELING DOCETAXEL'S VEILED IMPACT- A CASE REPORT

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INTRODUCTION

Docetaxel, a commonly used chemotherapeutic agent, has been associated with various complications, among which pneumonitis is rare but potentially life-threatening. Risk factors include high cumulative dose (100mg/m^2), weekly regimen, co-administration of gemcitabine or radiation and pre-existing lung disease. This case report delves into a low-risk patient who developed pneumonitis following docetaxel administration, highlighting the clinical presentation, diagnostic challenges, and management strategies to mitigate this complication.

REPORT

A 68-year-old female, non-smoker, no prior lung disease, with early breast cancer presented with cough and fever 9 days after cycle-2 adjuvant docetaxel of 75mg/m^2, 3-weekly schedule. Initial physical examination was unremarkable. Infiltrative changes seen over right lower zone on Chest X-ray. Initial laboratory tests were inconclusive, including mildly raised procalcitonin.

She was given antibiotics for community-acquired pneumonia. She was comfortable under room air during Day 1 admission, however, desaturated rapidly during Day 2, requiring High Flow Nasal Cannula (HFNC). Computed Tomography Pulmonary Angiography (CTPA) showed diffuse ground glass opacities involving both lungs associated with inter-septal thickening with no evidence of embolism.

Case was referred to respiratory team, initially offered bronchoscopy for further work-out, however, aborted, in view of patient's high oxygen requirement.

Infective causes were ruled out with negative culture, mycoplasma serology and viral panel. Given the clinical presentation, negative infective work-up and CT findings, a diagnosis of docetaxel-induced pneumonitis was made and started on oral prednisolone 1mg/kg/day. Her disease responded swiftly and able to wean off oxygen after 1 week of steroid therapy.

Steroid was tapered off uneventfully over 1 month. A follow-up HRCT 1 month post completion of steroid therapy showed complete resolution of previous changes.

CONCLUSION

Docetaxel-induced pneumonitis, while rare, can lead to life-threatening event. This case underscores the importance of maintaining high index of suspicion among patients who present with respiratory symptoms after administration of docetaxel as prompt recognition and timely initiation of corticosteroid treatment lead to favourable outcome.

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COLLABORATION BETWEEN SARAWAK GENERAL HOSPITAL (SGH), UNIMAS AND AMERICAN SOCIETY OF CLINICAL ONCOLOGY- INTERNATIONAL CANCER CORPS (ASCO-ICC): SARAWAK'S BEACON OF HOPE IN CANCER

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INTRODUCTION

Sarawak, like many regions worldwide, grapples with the complexities of providing comprehensive and equitable cancer care services to its diverse population spread across urban centres and rural hinterlands. This report aims to provide an overview of activities undertaken by Sarawak General Hospital, UNIMAS in collaboration with ASCO-ICC, highlighting its significance in driving the progress within cancer care delivery service.

METHODOLOGY

Several key initiatives were carried out via the collaboration:

Educational Programs via e-platforms

The team had organised multidisciplinary meetings to discuss adult and paediatric neuro-oncology cases with interesting topics delivered by key speakers on a monthly basis. It was followed by Neuro-Oncology Multidisciplinary Team (Neuro-Onco MDT) which served as a platform for local teams to discuss complex cases with relevant experts. Sarawak-ASCO Palliative Care eCource (APCeC) was rolled out yearly since 2021.

Scientific Conference

To improves access to equitable healthcare, 8th Malaysian Breast & Endocrine Surgery Course 2023 (MBESC 2023) was organised in Sarawak. Multidisciplinary approach to cancer cases was highlighted via the conference with involvement of healthcare personnel from tertiary centre, but also district areas.

On-site Visit

Several site visits were organised by ASCO team to further consolidate the knowledge imparted via e-platform, covering neuro-oncology and palliative cases, Tumour Board Mentor Workshop and Sarawak Train the Trainer Workshop.

OUTCOME

Through the key initiatives, we achieved several milestones, including yearly increasing number of participants since APCeC 2021 and it has led to subsequent Train the Trainer eCourse and establishment of Palliative Care Link Nurse in Sarawak General Hospital as a result of an on-site advocacy program by ASCO nurses. We have observed increment in number of participants in Neuro-Onco MDT across various disciplines and usage of Stereotactic Radiosurgery/ Stereotactic Radiotherapy (SRS/SRT). 98% of respondents were reported to make a practice change as a result from MBSESC. As inspired from ASCO's emphasis on MDT, we have established similar platforms, including Lung, Colorectal, Hepatobiliary and Gynae-Oncology MDT with participations from healthcare personnel across Sarawak.

CONCLUSION

The impactful collaboration between Sarawak General Hospital, UNIMAS and ASCO-ICC has redefined cancer care services in Sarawak.

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PREVALENCE OF *MET* EXON 14 SKIPPING ALTERATIONS IN NON-SMALL CELL LUNG CANCER: A MOLECULAR APPROACH USING NEXT GENERATION SEQUENCING

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INTRODUCTION

Aberrant activation of *MET* triggers a constitutive activation of downstream signaling involved in tumorigenesis. *MET* alterations including *MET* exon 14 skipping (*MET*ex14), define a unique molecular subtype of non-small cell lung cancer (NSCLC) which confers sensitivity to *MET* tyrosine kinase inhibitors (TKIs). Given the rarity of *MET*ex14 in NSCLC, this study aims to determine the frequency by retrospectively analyzing pooled data from Malaysian patients.

MATERIALS AND METHODS

A total of 1527 formalin-fixed paraffin-embedded (FFPE) tumor tissues from NSCLC patients (January 2022-March 2024) across different hospitals in Malaysia were sent to Subang Jaya Medical Centre for molecular testing using broad panel DNA/RNA-based NGS covering 50 cancer-related genes.

RESULTS

*MET*ex14 was identified in 30 samples which accounted for 2.0% (30/1527) of all NSCLC patients. Of the 30 patients, 76.7% (23/30) had adenocarcinoma, 13.3% (4/30) had adenosquamous carcinoma, 6.7% (2/30) had squamous cell carcinoma, and 3.3% (1/30) had sarcomatoid carcinoma. The median age of the *MET*ex14 patients was 72 years, and 46.7% were women. Oncogenic driver genes such as *EGFR*, *KRAS*, and *ROS1* were not found to be co-mutated with *MET*ex14. Co-mutations with *TP53* were observed in 3 patients (10.9%), *PIK3CA* in 2 patients (6.89%) and *ERBB2* amplification in 1 patient (3.4%). With NGS panel that covers exon 14 and the surrounding region, the detection rate was 1.3% for DNA and 2.0% for RNA.

DISCUSSION

The prevalence of *MET*ex14 in our patient cohort is 2.0%. Notably, *MET*ex14 alterations did not co-occur with other common oncogenic drivers, indicating their role as an independent

driver in NSCLC. RNA-based NGS outperforms DNA-based methods for detecting *MET*ex14, therefore parallel testing is recommended for optimal detection.

CONCLUSION

*MET*ex14 represents a distinct subset of NSCLC, predominantly found in patients with adenocarcinoma.

The results emphasize the need for DNA and RNA-based NGS for accurate detection of *MET*ex14 alterations.

MOLECULAR PROFILE OF PATIENTS WITH ADVANCED NSCLC IN SARAWAK, MALAYSIA

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Keywords: non-small cell lung cancer, molecular profile

INTRODUCTION
In recent years, there has been greater understanding of lung cancer and lead to a shift in classification of non-small cell lung cancer (NSCLC) according to their molecular subtypes[1,2]. In this study, we sought to describe the molecular profile of advanced NSCLC in Sarawak.

MATERIALS & METHODS
This retrospective study examined data of patients with advanced NSCLC diagnosed between year 2017-2022 in Sarawak. Data on clinical characteristics, molecular profile, pathological features were collected. Analysis was done by SPSS version 22.

RESULTS
401/585 lung cancers were advanced NSCLC. NSCLC was more common in male (53%) than female (47%). The median age of our cohort was 65 years (30-91). 51.4% patients were never smoker and 48.6% were ex/current smoker. Majority (97.3%) had de novo metastatic disease. The most common histology was adenocarcinoma (85.8%) followed by squamous cell carcinoma (10.2%). Majority (90.5%, 363/401) had molecular testing done by single gene testing only (90.9%) and 8.8% had NGS testing. The molecular profile of our patients were as follows: EGFR mutation [exon 18 G719X (n=5, 1.4%), exon19 deletion (n=97, 26.7%), exon 21 L858R (n=85, 23.4%), exon 20ins (n=5, 1.4%), other EGFR mutations (n=10, 2.8%], ALK (n=27, 7.4%), ROS1 (n=1, 0.3%), MET exon 14 skipping (n=4, 1.1%), BRAF V600E (n=1, 0.3%), HER2 (n=1, 0.3%), KRAS G12C mutations (n=2, 0.6%). 103 (28%) patients did not have further molecular testing by NGS after negative initial testing.

DISCUSSION
Our study of 401 NSCLC described the molecular profile of our patients in Malaysia, with EGFR being the most common driver mutation. There remains a significant number of patients who did not have NGS after negative initial testing.

CONCLUSION
The molecular profile of our patients is consistent with other Asian data with slightly more ALK positive patients. This analysis provide insight into molecular profile of our patients with advanced NSCLC.

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PREVALENCE OF HER2-LOW IN HER2 EQUIVOCAL ON IMMUNOHISTOCHEMISTRY (IHC)

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INTRODUCTION

Breast cancer is the most common cause of cancer death among females worldwide. The human epidermal growth factor receptor 2 (HER2) or HER2/neu is an oncogene involved in cell proliferation, migration and adhesion, signaling the pathogenesis of breast cancer. HER2-targeted drugs such as Herceptin™ (trastuzumab), PERJETA® (pertuzumab) and KADCYLA® (adotrastuzumab emtansine) are beneficial for HER2-positive breast cancer patients who will inhibit cell signaling pathways. Enhertu (fam-trastuzumab-deruxtecan-nxki) is used to treat HER2-Low breast cancers with IHC scores of 1+ or 2+ without amplification. HER2 is determined by immunohistochemistry (IHC) for protein overexpression and fluorescence in situ hybridisation (FISH) for gene amplification. HER2 status was identified according to the 2018 American Society of Clinical Oncology/ College of American Pathologists (ASCO/CAP) guidelines. In this study, we compare the prevalence of HER2-Low in HER2 equivocal on IHC.

METHODS

A total of 877 breast cancer cases were received from January 2023 to December 2023 in Premier Integrated Laboratory. These samples were from various labs and hospitals across Malaysia, were analyzed by IHC assays followed by FISH. Ventana BenchMark ULTRA autostainer and the Ventana Ultra View universal DAB detection kit was used to perform IHC staining. A dual-probe FISH test called PathVysion HER2 DNA probe kit was used on the same specimen for HER2 IHC equivocal (score 2+) cases.

RESULTS

Out of the 877 samples analyzed, 566 samples were reported as IHC 2+, 100 samples were IHC 1+ and 211 samples were IHC 3+. From the 566 IHC 2+ samples, 134 (23.67%) cases showed HER2/neu amplification in FISH, whereas 432 (76.33%) cases were non-amplified. These 432 cases were reported as HER2-Low, defined by IHC 2+ with a negative HER2 FISH result.

CONCLUSION

IHC followed by FISH are the gold standard tests for determining HER2/neu status in breast cancer patients. Any patient with HER2/neu IHC equivocal needs to be confirmed by FISH before proceeding with HER2 inhibitor treatment, such as HerceptinTM therapy. If the FISH

results are negative for HER2 IHC equivocal, this is considered HER2-Low. Significantly, Enhertu has shown a promising objective response in HER2-Low breast cancer patients.

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MANAGEMENT OF NAUSEA AND VOMITING WITH ZOLBETUXIMAB + CHEMOTHERAPY IN CLDN18.2+ HER2− ADVANCED GASTRIC OR GASTROESOPHAGEAL JUNCTION ADENOCARCINOMA

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BACKGROUND

SPOTLIGHT (NCT03504397) and GLOW (NCT03653507) showed significant improvement in PFS and OS using first-line (1L) zolbetuximab + chemotherapy vs placebo + chemotherapy in patients with CLDN18.2+, HER2−, locally advanced unresectable or metastatic gastric/gastroesophageal junction adenocarcinoma. Nausea/vomiting were the most common treatment-emergent adverse events (TEAEs) reported with zolbetuximab. We report an analysis of the incidence and management of nausea/vomiting in SPOTLIGHT and GLOW.

METHODS

Patients were randomized 1:1 to zolbetuximab + mFOLFOX6 vs placebo + mFOLFOX6 (SPOTLIGHT; n=565) or zolbetuximab + CAPOX vs placebo + CAPOX (GLOW; n=507). Neurokinin-1 receptor blockers, selective serotonin receptor blockers, and other prophylactic antiemetic regimens were recommended to prevent and mitigate nausea/vomiting per institutional care and guidelines.

RESULTS

279 patients in SPOTLIGHT and 253 patients in GLOW received zolbetuximab + chemotherapy. In SPOTLIGHT and GLOW combined, nausea occurred in 58% vs 18% of patients, and vomiting occurred in 43% vs 15% of patients in first vs second zolbetuximab infusions; lower incidences of nausea/vomiting were observed thereafter. During first zolbetuximab infusion, first episode of nausea/vomiting occurred within 1 hour (median, 48.0 min in SPOTLIGHT, 56.5 min in GLOW). Various antiemetic combinations were used. The 96 patients in SPOTLIGHT and 52 patients in GLOW who had infusion modifications in cycle 1 due to TEAEs had numerically higher infusion rates than patients without infusion modifications; 85% of these modifications in SPOTLIGHT and 79% in GLOW were due to nausea/vomiting. Zolbetuximab was discontinued within first 9 weeks in 11 and 7 patients in SPOTLIGHT and 6 and 4 patients in GLOW due to nausea or vomiting, respectively.

CONCLUSIONS

In SPOTLIGHT and GLOW, slower infusion rate and use of antiemetic combinations may have helped to mitigate nausea/vomiting. These strategies will be important to support continued treatment and allow patients to achieve maximum clinical benefit with zolbetuximab + chemotherapy.

CLINICOPATHOLOGICAL FEATURES AND TREATMENT OF TESTICULAR GERM CELL TUMOUR IN SARAWAK

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INTRODUCTION

Testicular germ cell tumour (TGCT) is an uncommon cancer, constituting only about 1-3% of cancers in males. There is limited data available on this cancer in Malaysia. Sarawak General Hospital (SGH) is the only public oncology referral centre in Sarawak and in this study, we report the clinicopathological features and treatment of TGCT patients under our follow up.

MATERIALS & METHODS

This is a single-centre, retrospective, observational study enrolling all clinic patients with diagnosis of TGCT between 1st January 2014 to 31st December 2023. Medical notes of the patients were retrieved and relevant data were collected using a standardized case report form.

RESULTS

A total of 82 patients were included in this study. Only 39 patients (47.6%) were from Kuching while others from Sibu (n=16, 19.5%) and Miri (n=14, 17.1%). The median age at diagnosis were 29.0 years old (range 17-73). Majority of patients had clinical findings on testicular examination at presentation (n=55, 67.1%). Almost all cases had histological diagnosis (n=79, 96.3%) and non-seminoma subtype (n=43, 52.4%) were more common than seminoma (n=36, 43.9%). In terms of staging, half were Stage I (n=41, 50%) at presentation. Interestingly, chemotherapy was the most common adjuvant strategy in both Stage I seminoma and non seminoma. For advanced TGCT with intermediate and poor risk, 4 cycles of Bleomycin, Etoposide and Cisplatin (BEP) was most commonly used but for patients with lung/mediastinal involvement, Etoposide, Ifosphamide and Cisplatin (VIP) was preferred instead.

DISCUSSION

Majority of our patients have logistics obstacles for active surveillance hence adjuvant chemotherapy in early TGCT was preferred. The limitation of this study is that we only enrolling patients under our clinic follow up with significant selection bias.

CONCLUSION

A prospective data collection is indicated to provide more data for this rare but important cancer.

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LEFT BREAST DEEP INSPIRATION BREATH-HOLD RADIOTHERAPY (DIBH-RT) IMPLEMENTATION IN MALAYSIA

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INTRODUCTION

Deep inspiration breath-hold radiotherapy (DIBH-RT) technique for left breast cancer patient has been introduced to reduce dose to the heart. This study aims to assess implementation of DIBH-RT in Malaysia.

MATERIALS & METHODS

Protocol for implementation of voluntary-DIBH (vDIBH) in left breast radiotherapy has been developed in Advanced Medical and Dental Institute (AMDI), Universiti Sains Malaysia. Left breast patient that is able to breath-hold for at least 30 seconds is considered. The breath-hold level is monitored using skin-marks and lasers which are observed on CCTV from the control room. Treatment verification is done using cone-beam computed tomography (CBCT). Planning target volume (PTV) margin was computed based on Van Herk's margin recipe. Questionnaire with both multiple-choice and open-ended questions which focus on the methods of DIBH application and clinical application of surface-guided systems has been designed and will be distributed online to each radiotherapy centres in Malaysia.

RESULTS

Assessment on accuracy of vDIBH technique was successfully implemented on 13 left breast patients. PTV margin that would be required using skin-laser monitoring technique is 7.77 mm, 10.85 mm, and 10.93 mm in the x, y, and z axes, respectively. From the survey questionnaire, we would be able to identify current practice of DIBH-RT in Malaysia and acquire data on numbers of centres that implemented DIBH technique for left breast cancer patients.

DISCUSSION

The PTV margin computed is smaller than 20 mm margin which is recommended for breast radiotherapy. Skin-laser monitoring in vDIBH technique is radiation-free, easy to implement, and cost-effective. DIBH-RT implemented in different centres can be compared. Skin-laser monitoring for vDIBH can be implemented in centres without special motion monitoring device or surface-guided system.

CONCLUSION

The vDIBH skin-laser monitoring protocol developed can be recommended to centres with limited access to DIBH assisting devices to improve left breast radiotherapy in Malaysia.

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ISLAND HOSPITAL'S EXPERIENCE IN THE USE OF ULTRASOUND FOR PRE-RADIOTHERAPY ASSESSMENT OF RECTAL CONDITION

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INTRODUCTION

Intensity-Modulated Radiotherapy (IMRT, VMAT or SBRT) to the pelvic region often involves dose modulation at/near bladder and rectum. Island Hospital's bladder and rectal protocols are to ensure their consistent size and condition. We employ the use of Ultrasound for pre-treatment assessments of both bladder and rectum. This study focuses on our experience in rectal assessment.

MATERIALS & METHODS

24 patients were assessed in this study. All patients were on bladder and rectal protocols where 500mL of water to be drank within 5minutes and hold for 30-45minutes, and customized-diet preparations before and throughout the course of treatment. The baseline bladder and rectal conditions were taken with Ultrasound within 5minutes from satisfactory CT-Simulation. Pre-treatment assessment of the rectal condition was compared with the baseline and quantified.

RESULTS

Standardized method of estimating rectal diameter using Ultrasound was established, and the measurement is compared against CT-Sim and image-guidance system (CBCT). The rectal area is identified on the Ultrasound via visualization of halfmoon-hyperechoic or circumferential-hypoechoic areas. High acoustic-shadow area represents hard stool retention and estimation via Ultrasound may not be proper. The deviation of Ultrasound-estimated diameter compared against the CT images (CT Sim and CBCT) is 4.18±2.65mm.

DISCUSSION

Identification of rectal areas with Ultrasound for measurements using halfmoon-hyperechoic or circumferential-hypoechoic were effective and consistent. The deviation of Ultrasound-estimated diameter measurements is below 5mm, it was useful to assess daily rectal condition.

CONCLUSION

The use of Ultrasound as pre-treatment assessment tool for rectal condition is effective.

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LEFT-SIDED BREAST CANCER IRRADIATION WITH VOLUNTARY DEEP INSPIRATION BREATH-HOLD (NON-COMPUTER CONTROLLED)

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INTRODUCTION

The purpose is to examine the feasibility of voluntary deep inspiration breath-hold (DIBH) of left-sided breast radiotherapy using simple breath-hold technique (non-computer controlled). Post-operative radiotherapy for breast cancer can increase cardiac disease in a dose-dependent manner but reduction of dose to heart and left anterior descending artery (LAD) can be achieved by using "Deep inspiration breath-hold" (DIBH) technique (1). With the lack of advanced devices such as the SDX and ABC (Active Breathing Control) used in DIBH technique, voluntary deep inspiration breath hold using simple breath-hold technique is an alternative. This technique requires the patient to hold their breath at a predetermined specific point, and radiation therapist at the same time enabling the treatment beam when predetermined point accomplished.

REPORT

Five patients planned for left-sided breast radiotherapy have been evaluated and selected to be irradiated using voluntary DIBH in Radiotherapy and Oncology Department, Hospital Kuala Lumpur. Patients are given time to practice how to take deep breaths and hold for 20 seconds for each session. Predetermined points will be recorded during three phase CT-simulation scan including normal, deep inspiration and expiration scan. Patients are treated with planned tangential radiotherapy (3D-CRT) with each tangential field divided into two segments. Treatment plan for normal breathing and DIBH are produced to compare mean heart dose. The treatment beam can be stopped by radiation therapist when specified point of breath hold did not meet. A recycle modified portable standing laser is added into the treatment room that is equipped with intercom and camera.

CONCLUSION

Average time taken for DIBH treatment compared to normal breathing is only three minutes more. Mean heart dose was significantly reduced by DIBH. The added cost of using the simple breath-hold technique (non-computer controlled) is zero and an effective alternative for budget limited center.

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EXPLORING WILLINGNESS TO PAY OUT-OF-POCKET FOR GENETIC TESTING AMONG OVARIAN CANCER PATIENTS IN MALAYSIA, A MIDDLE-INCOME COUNTRY IN ASIA

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INTRODUCTION

We previously demonstrated that mainstreaming genetic counselling for ovarian cancer patients in Malaysia, increased uptake of genetic testing to 80% when the test was available for free. However, in practice, genetic tests are unlikely to be provided for free. In this study, we explored the willingness to pay (WTP) for BRCA genetic testing among ovarian cancer patients in Malaysia.

MATERIALS & METHODS

In this multi-center study, ovarian cancer patients who have not received prior genetic counselling or testing were administered questionnaires on WTP (a contingent valuation exercise), and facilitators and barriers to genetic counselling, and followed up for at least 6

months. We estimated the WTP value and explored factors associated with willingness to pay using logistic regression.

RESULTS

Of 100 sequential patients recruited, 58% stated WTP for BRCA genetic testing at median of MYR1000 (IQR= MYR1125). Older participants were less likely to be willing to pay. Reasons for unwillingness to pay included affordability (71%), belief that it should be paid by government or insurance (19%) and preference not to know their genetic status (14%). At the end of follow-up (mean 5±17 months), 17% took up testing at full price (~MYR1095).

DISCUSSION

Given the current cost of genetic testing and that around 50% of participants were willing to pay at least MYR500, a subsidy of MYR2000 per patient is required. With 800 new ovarian cancer cases annually and about 90% of eligible patients for testing, this translates to a total subsidy equivalent to the cost of treating four ovarian cancer patients.

CONCLUSION

In this exploratory study, stated WTP for BRCA genetic testing was high but only at a reduced price, and at follow-up, only a minority of patients paid the full price. A co-payment framework or subsidy scheme may be needed to reduce the significant cost barriers to genetic testing in Malaysia.

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HIGH PREVALENT OF HRD STATUS IN OVARIAN CANCER

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INTRODUCTION

Homologous Recombination Deficiency (HRD) is involved in the tumorigenesis and progression of high-grade serous ovarian cancer (HGSOC) in predicting responses to platinum-based chemotherapy and poly (ADP-ribose) polymerase (PARP) inhibitors. HRD-positive status is defined through a deleterious or suspected deleterious BRCA mutation and/or genomic instability known as Genomic Scar Scoring (GSS). This study aimed to determine the prevalence of BRCA status and GSS in HGSOC patients at Premier Integrated Labs Sdn Bhd using next-generation sequencing technology.

MATERIALS & METHODS

Ninety-three cases of formalin-fixed paraffin-embedded (FFPE) tissue samples were collected from patients with confirmed diagnoses of HGSOC Stage III and IV from January 2022 to December 2023 for HRD testing. The patients ranged in age from 33 to 77 years; the majority were Chinese, followed by Malay and Indian. DNA extraction was performed using the GeneRead FFPE kit by Qiagen, followed by library preparation according to the manufacturer's instructions (Amoy Diagnostics, China) and sequenced on the NextSeq550 platform (Illumina). The results were analysed using AmoyDx NGS Data Analysis System (ANDAS) version 1.1.1.

RESULTS

We found that 75% (70/93) of the cases were HRD-positive. Of 70 cases, 52 (74%) were GSS ≥50 only without any BRCA mutation, while 18 (26%) were positive BRCA mutation and GSS ≥50. Sixteen (23%) cases were positive for BRCA1, and 2 cases (3%) were BRCA2. 73% (73/93) of cases were in Stage III HGSOC patients, and 27% (25/93) were in Stage IV. Somatic BRCA 1 mutation is the most common mutation detected in HGSOC.

CONCLUSION

The prevalence of HRD status in HGSOC is notably higher compared to other histology subtypes in ovarian cancer. Maintenance Olaparib and Bevacizumab significantly improved progression-free survival in patients with advanced HGSOC undergoing complete or partial first-line conventional therapy. Hence, HRD status in HGSOC using NGS technology is important for selecting patients who benefit from PARP inhibitors.

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CLINICAL CHARACTERISTICS, MOLECULAR PROFILE AND TREATMENT OF EPIDERMAL GROWTH FACTOR RECEPTOR (EGFR) MUTATED NON-SMALL CELL LUNG CANCER IN SARAWAK

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Keywords: epidermal growth factor receptor, non-small cell lung cancer, treatment, molecular profile

INTRODUCTION

EGFR mutations are the most common oncogenic drivers in non-small-cell lung cancer (NSCLC)[1]. The prognosis of EGFR positive (EGFR+) NSCLC has largely improved with tyrosine kinase inhibitor (TKI)[2]. In this study, we evaluated the characteristics and treatment of EGFR+ NSCLC in Sarawak.

MATERIALS & METHODS

This retrospective study examined data of EGFR+ NSCLC diagnosed between year 2017-2023 in Sarawak. Data on clinical characteristics and treatment were collected and analysed.

RESULTS

Among 522 NSCLC patients, 221 (54%) were EGFR+, being more common in female (60%) than male (40%) and never smoker (69.7%). The median age was 65 year (36-91). The stage at diagnosis were: stage I (8.1%), II (1.8%), III (3.2%) and IV (86.9%). 26.5% patients had brain metastasis at presentation. 99% had adenocarcinoma and 1% had squamous cell carcinoma. The detected mutation are: EGFR exon18 G617X (n=5, 2.3%), EGFR exon 19del (n=101, 45.7%), exon 21 L858R (n=93, 42.1%), exon20ins (n=7, 3.2%), compound mutation (n=11, 5%), others EGFR mutation (n=4, 1.8%). Treatment received in first line are as follows: gefitinib/erlotinib (n=142, 69.3%), afatinib (n=11, 5.4%), dacomitinib (n=3, 1.5%), Osimertinib (n=20, 9.8%), platinum based chemotherapy (n=12, 5.9%), clinical trial (n=8, 3.9%), best supportive care/defaulted (n=6, 2.9%), others (n=3, 1.5%). Second line treatment as follows: Osimertinib (n=12, 23%), platinum based chemotherapy (n=22, 42.3%), BSC/defaulted (n=15, 28.8%), other TKI (n=3, 5.8%). 33.3% patients had T790M mutation on progression upon 1st generation TKI.

DISCUSSION

Our analysis provided real world data on EGFR+ lung cancer in local setting. 90% of EGFR+ lung cancer able to gain access to TKI and 23% patients received Osimertinib in the second line setting.

CONCLUSION

EGFR+ lung cancer is the most common oncogene driven lung cancer with prevalence of 50% among NSCLC. Our study showed that access to first generation TKI was high but limited for 3rd generation TKI.

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IS BREAST CANCER ASSOCIATED WITH GERMLINE MSH6 MUTATION: A CASE REPORT

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INTRODUCTION

Some genes such as BRCA1, BRCA2, ATM, CHEK2, and PALB2 have been well established to be associated with breast cancer risk and are included in breast cancer genetic testing panels. However, this case report demonstrates an unexpected finding of MSH6 germline pathogenic variant in a breast cancer patient. MSH6 is associated with autosomal dominant Lynch syndrome which is associated with colorectal cancers but the association with breast cancer risk is still not well defined. This case report demonstrates the challenges in the counselling of a breast cancer patient with a MSH6 pathogenic variant.

REPORT

A 46-year-old female patient diagnosed with Invasive ductal carcinoma (IDC) at 46 years old. Family history includes a sister with ovarian cancer at 44 years old, a sister with triple-negative breast cancer (TNBC) and ovarian cancer at 51 years old, and mother with uterine or ovarian cancer and colon cancer. Pre-test genetic counselling was conducted in detail and a multi-gene panel of 19 genes was offered which included breast and gynae cancers guidelines-based panel. She was found to have a pathogenic variant in MSH6 gene and a variant of uncertain significance in RAD51C gene. During the post-test genetic counselling, there was in depth discussion about the possible risks of Lynch Syndrome cancers such as ovaries, uterus, and colon. The session was challenging as the patient was expecting a result that may have helped in her breast cancer treatment and surgical choice. The patient was referred to the gynecologist for risk management after completing her treatment and surgery for breast cancer.

CONCLUSION:

This case demonstrates the need for detailed pre-test genetic counselling when using panel genetic testing for breast cancer to manage the expectations for the patient on the possible outcome and future risks of cancer.

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PREVALENCE OF PIK3CA GENE MUTATIONS IN ADVANCED METASTATIC BREAST CANCER IN SOLID TUMOUR AND LIQUID BIOPSY

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INTRODUCTION

Breast cancer remains the first rank cancer in women worldwide and the most common cancer among women in Malaysia. The HR+/HER2- advanced or metastatic breast cancer (mBC) harboured the most significantly mutated genes, with the most frequent being the PIK3CA gene. Alpelisib; a PI3K inhibitor demonstrates a clinically meaningful benefit in treating mBC patient. This study aimed to determine the prevalence of PIK3CA gene mutations in the HR+/HER2- mBC subgroup in Premier Integrated Labs Sdn. Bhd from solid tumour (ST) and liquid biopsy (LB).

MATERIALS & METHODS

63 cases of formalin-fixed paraffin-embedded (FFPE) tissue samples and 92 plasma cases from patients diagnosed with advanced mBC were collected from January to December 2023 for PIK3CA gene mutation testing. DNA from FFPE and plasma was extracted using the DNA Sample Preparation Kit, Roche, and the QIAamp Circulating Nucleic Acid Kit, Qiagen, respectively. Real-time polymerase chain reaction (qPCR) was done using Cobas z 480, Roche for FFPE, and Rotor-Gene Q (RGQ) for plasma according to the manufacturer's instructions (Roche, USA, and Qiagen, Germany). The results were analysed by using respective platform analysers.

RESULTS

Of 63 FFPE tissue samples, 28 (44.4%) were positive for PIK3CA and 42 (26.5%) were positive in liquid biopsy. The most common mutations were E545A^D^G^K (16.2%), H1047^L^R^Y (8.4%), N345K (1.3%) and C420R (1.3%) in FFPE tissue and plasma. Out of 155 cases, 5 (3.2%) had both FFPE and plasma. Only 1 case was positive for PIK3CA mutation detected in FFPE, not in plasma. Four out of five cases (80%) were negative for PIK3CA mutation that correlates for both tissue and plasma.

CONCLUSION

In conclusion, the prevalence of PIK3CA mutations in advanced mBC is higher among the HR+/HER2- subgroup and may respond well to PI3K inhibitors. LB can be an alternative or complement for cases with insufficient tissue biopsy.

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KEYWORDS

PIK3CA, Advanced metastatic breast cancer, Solid tumour, Liquid biopsy

CLINICAL CHARACTERISTICS AND TREATMENT OF EARLY LUNG CANCER IN SARAWAK, MALAYSIA

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Keywords: early lung cancer, treatment, clinical characteristics

INTRODUCTION
Lung cancer is one of the most common cancers in Malaysia[1]. Majority of lung cancers were diagnosed at advanced stage[2]. In this study, we aimed to evaluate the clinical characteristics and treatment of patients with early lung cancer in Sarawak.

MATERIALS & METHODS
This retrospective study examined data of patients with early lung cancer diagnosed between year 2017-2023 in Sarawak. Data on clinical characteristics, pathological features, molecular profiles and treatment were collected. Analysis was done by SPSS version 22.

RESULTS
Among 581 lung cancers patients, 63 (10.8%) had early lung cancer. It is almost evenly distributed between male (50.8%) and female (49.2%). The median age was 67 years (21-85). 33 patients were Chinese, 9 were Iban, 10 were Bidayuh and remaining were of other ethnicities. 50.8% were ex/active smoker, 46% were never smokers. Adenocarcinoma (76.2%) is the most common histology followed by squamous cell (6.3%) and small cell carcinoma (6.3%). 42 patients had molecular testing done [single gene (n=41), NGS (n=1)]. Mutations were detected in EGFR exon 19del (n=6, 14.3%), exon 21 L858R (n=10, 23.8%), other EGFR exons (n=4, 9.5%), ALK (n=1, 2.38%). In term of definitive treatment, majority had surgery (85.6%), followed by radiotherapy (6.5%). 46% patients required adjuvant chemotherapy and 1.6% patient had adjuvant osimertinib. 10 (15.9%) patients relapsed to develop stage III/IV disease during their follow up.

DISCUSSION
Our study highlighted that only small percentage of lung cancer patients were diagnosed at early stage. It is crucial to diagnose lung cancer early as these patients will benefit from aggressive curative treatment.

CONCLUSION
Early lung cancer remains unique population of patients. More works are needed to diagnose lung cancer at earlier stage as early stage is associated with better outcome. The molecular profile of our early lung cancer cohort was consistent with reported data.

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CHEMOTHERAPY: THE UNLIKELY HERO IN OVERCOMING HCC RESISTANCE. A CASE REPORT.

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BACKGROUND

Hepatocellular carcinoma (HCC) is the most common primary malignancy in the liver. Despite promising clinical trial results, it is crucial to acknowledge that these findings may not always directly translate into substantial enhancements in real-world clinical settings. Here, we present a case of advanced HCC where chemotherapy was administered as third-line treatment following lack of response to Lenvatinib and Atezolizumab-Bevacizumab combinations.

CASE REPORT

This is a 61-year-old woman, presented with incidental finding of elevated Alpha Fetoprotein (AFP) reaching 7914.4IU/ml. Computed Tomography (CT) thorax, abdomen and pelvis revealed multiple arterial enhancing liver lesions, indicative of HCC. At diagnosis, she was classified as Child-Pugh A and BCLC stage B. She received Transarterial chemoembolization (TACE) followed by Lenvatinib. However, after 3 cycles of Lenvatinib, her AFP persistently increased, leading to a switch to Atezolizumab-Bevacizumab. Despite 3 cycles, AFP level further soared to 9350IU/ml and complained of worsening abdominal discomfort. Hence, she was counselled for FOLFOX chemotherapy and completed 12 cycles with minimal toxicities. Symptomatically, her abdominal discomfort improved significantly and her performance status returned to baseline. AFP levels improved to 10.3IU/ml after 12th cycle. Radiologically, there was a significant decrease in the dimensions of liver lesions, with the largest decreasing from 8cm to achieving complete resolution. Currently, she is well six months post-treatment completion, her condition remains stable, marking her longest period without relapse since diagnosis.

CONCLUSION

Managing HCC can be complex, especially when standard treatments prove ineffective. Patient's initial sequence of management is consistent with current guidelines for HCC. However, patient's lack of response reiterates that a single template is inadequate in the realm of oncology. The shift to FOLFOX chemotherapy post-prior treatment failure, highlights the need of flexibility in patient care. Essentially, this and showcases the importance of personalized approach to optimize patient outcome.

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SHINING LIGHT ON A DARK DIAGNOSIS: EDP-MITOTANE'S PROMISE ADRENOCORTICAL CARCINOMA. A CASE REPORT

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BACKGROUND

Adrenocortical carcinoma (ACC) is rare yet aggressive malignancy. Surgical resection remains the cornerstone of curative treatment. Mitotane is the only approved systemic therapy for ACC, used in adjuvant and advanced disease. Mitotane, with etoposide, doxorubicin, cisplatin (EDP) combination, known for its significant toxicity with limited supporting evidence. Given these complexities, we present a compelling case of ACC treated with EDP-Mitotane combination.

CASE REPORT

This is a 31-year-old lady, presented with abdominal bloatedness in 2022. Computed Tomography (CT) thorax, abdomen and pelvis showed left adrenal mass of 30cm width, with subcentimeter liver nodules. Following this, she underwent left adrenalectomy, confirming the diagnosis of low-grade ACC. Post-operatively, she commenced adjuvant therapy with Mitotane 1g BD. Positron emission tomography (PET) scan after 4 months revealed multiple new liver lesions, largest being 2.2cm. Multidisciplinary team (MDT) discussion led to a decision for Selective Internal Radiation Therapy (SIRT) to liver lesions. However, subsequent CT Liver 4 phase showed further disease progression in the liver and new lung lesions, accompanied with grade 1 diarrhea and abdominal discomfort. Another MDT discussion led to initiation of EDP-Mitotane in view of radiological and clinical progression. Till date, patient tolerated full dose of EDP, with Mitotane gradually increased from 2g to 6g daily by Cycle 4. Interim CT demonstrated no local recurrence and stable disease elsewhere.

DISCUSSION AND CONCLUSION

The landscape of ACC, marked by its unfavorable prognosis and high risk of recurrence. Despite suboptimal evidence for therapeutic approaches, Mitotane-EDP combination represents a ray of optimism in the management of ACC. Multidisciplinary collaboration remains crucial in navigating treatment regimen and enhancing patient outcome. In conclusion, ongoing exploration of emerging therapies and the necessity for precision medicine strategies, including molecular profiling, will play a pivotal role in future management of advanced ACC.

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K-TRACK™: A STREAMLINED PERSONALIZED ASSAY TO DETECT MOLECULAR RESIDUAL DISEASE IN SOLID TUMORS

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INTRODUCTION

Circulating tumor DNA (ctDNA) has emerged as a promising biomarker to monitor molecular residual disease (MRD) in solid tumors after curative-intent treatment. However, clinical validation data of ctDNA monitoring is lacking in Southeast Asian patients.

MATERIALS & METHODS

This prospective multi-center study enrolled 534 patients with colorectal (115), liver (60), lung (86), ovarian (17), breast cancer (162) and gastric cancer (94), respectively, who were eligible for curative-intent surgery. Genomic DNA extracted from tumor tissue and paired white blood cells was subjected to massive parallel sequencing of 150 cancer-related genes. A propietary algorithm ranked the top somatic mutations unique to each patient, which were then used to detect ctDNA in serial plasma samples.

RESULTS

The pre-operative detection rate of ctDNA was 91%, 97%, 62%, 65%, 57% and 46% for colorectal, liver, lung, ovarian, high-risk breast cancer and gastric cancer respectively; the specificity was >99% as ctDNA was not detected in the plasma from healthy donors. Our analysis after 24-month follow-up demonstrated that 86.2% (56/65) of patients with recurrence and/or metastasis had ctDNA detected in their post-operative plasma, while 98.2% (269/274) of patients with no recurrence had negative ctDNA results. On average, ctDNA detection was 5 months (up to 14.4 months) earlier than clinical diagnosis by imaging or pathology. Post-operative ctDNA was also found as an independent prognostic factor for disease-free survival in multiple types of cancer ($p<0.001$).

DISCUSSION

K-Track™ assay demonstrated clinical utility of ctDNA monitoring after definitive therapy with high sensitivity and specificity comparable to other platforms [1].

CONCLUSION

Longitudinal ctDNA monitoring could predict disease-free survival and enable early relapse detection in multiple types of cancer. Our simplified and cost-effective approach enables MRD monitoring to be more accessible in routine clinical practice in developing countries.

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A RARE CASE OF CRIBRIFORM-MORULAR THYROID CARCINOMA

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INTRODUCTION

Cribriform-Morular Thyroid Carcinoma (CMTC) is a rare type of thyroid carcinoma with uncertain histogenesis. It is strongly associated with familial adenomatous polyposis (FAP), an autosomal dominant inherited disorder which predispose individuals to the development of polyps in the colon but may also occur sporadically. Owing to the rarity of CMTC, there are limited number of case reports especially in Malaysia. The objective of this research is to report a rare form of thyroid malignancy to add to the existing literature and to guide further management of such rare case.

CASE REPORT

We present a case of a 21 years old female patient presented with enlarging goiter, with solitary thyroid nodule who after left hemithyroidectomy was found to have cribriform-morular thyroid carcinoma with no history of FAP. Initial ultrasound revealed a TIRADS 4 solitary left thyroid nodule measuring 3.1x 3.8x 5.7cm. FNAC taken prior to surgery showed benign follicular nodule. Patient then underwent endoscopic left hemithyroidectomy via breast, axillary and shoulder approach. Post operative histopathology reported as cribriform-morular thyroid carcinoma. In view of strong relation of CMTC with familial adenomatous polyposis (FAP), patient was scheduled for surveillance colonoscopy and esophagus gastroduodenoscopy (OGDS) which came out as normal. Genetic testing was not done for this patient however it is recommended.

DISCUSSION

Cribriform-morular thyroid carcinoma is a rare type of thyroid cancer with unique clinical, pathological and morphological features. Goiter can be a first presentation of FAP. Upon diagnosis of CMTC, patients should be screened for colonic polyposis and counselled for genetic testing.

CONCLUSION

The prognosis is usually favorable with low recurrence rate. Completion of thyroidectomy for CMTC still remains a conundrum however long term follow up is still warranted.

KEYWORDS

cribriform-morular thyroid carcinoma, familial adenomatous polyposis

UNMET SUPPORTIVE CARE NEEDS IN WOMEN WITH ADVANCED BREAST CANCER IN A MALAYSIAN SETTING

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INTRODUCTION

Women with advanced breast cancer (ABC) often feel secluded from global breast cancer movements due to the predominant focus on early detection and survivorship, limited representation in advocacy, different medical and emotional needs, and stigma surrounding their condition. We sought to identify the most prevalent unmet supportive care need among women with ABC and the associated factors in a Malaysian setting.

MATERIALS&METHODS

This cross-sectional analysis utilized data of 350 women either newly diagnosed or with recurrent ABC (stage IIIB, IIIC, IV) from 2022-2024 in Hospital Kuala Lumpur (Ministry of Health [MOH]), University Malaya Medical Centre (academic) and Subang Jaya Medical Centre (private). Data on supportive care needs were collected via a locally developed and validated tool via face-to-face interviews. Multivariable logistic regression was employed.

RESULTS

Of the five domains (emotional, hospital appointment, information, personal care and health, social and intimate relationship), unmet information needs were highest (overall: 76%) including understanding doctor's communication (73.1%), being well-informed of treatment options and test results (67.6%), receiving written information (61.1%), and information on complementary medicine (60.6%). Multivariable analysis revealed that ethnicity and type of hospital were significantly associated with information needs, after adjusting for sociodemographic and clinical factors. The Chinese were less likely to have information needs (odd ratios (OR):0.52[95%CI 0.28–0.97]) compared to their Malay counterparts. Patients treated in the MOH (OR:0.21[95%CI:0.09–0.49]) and private hospitals (OR:0.09[95%CI:0.02–0.32]) were also significantly less likely to report information needs compared to those managed in the academic hospital.

DISCUSSION

Unmet informational needs are prevalent among three-quarters of women with ABC, with significant ethnic and institutional disparities. Addressing these needs with culturally sensitive communication should not require excessive resources and remains feasible in our setting.

CONCLUSION

Collaboration among healthcare institutions, policymakers, and civil societies can effectively meet informational needs, enhancing the wellbeing of women with ABC.

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ADULT NEPHROBLASTOMA (WILMS' TUMOUR): A CASE REPORT

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INTRODUCTION

Nephroblastoma (Wilms' tumor) is one of the most common childhood solid malignant neoplasms. Adult nephroblastoma is extremely rare and accounts for <1% of all renal tumours[1]. Due to the scarcity of adult cases, there are no standard treatments available. Adult Wilms' tumor poses a challenge in preoperative diagnosis due to its radiological mimicry of renal cell carcinoma (RCC). Mostly diagnosed unexpectedly post-nephrectomy for presumed RCC. We reported a case of adult nephroblastoma.

REPORT

A 46-year-old lady presented with right flank pain in October 2022 and detected a huge right renal mass in ultrasound. CT renal showed a large lobulated, heterogenous enhancing mass at the right kidney. There were no secondaries detected after complete staging.

She underwent an open right radical nephrectomy on 3/2/23. Histopathological examination revealed a unifocal tumour with a pseudocapsule confined to the kidney. Microscopically, cells exhibited a triphasic pattern, predominantly epithelial cells with some blastermal cells and stromal components. No sinus vessels were involved with clear margins. Immunohistochemically positive for WT1, PAX8, BRAF, and CD56 but negative for CK7, CK20, LCA, AMACR, EMA, chromogranin, and synaptophysin, suggesting epithelial predominant nephroblastoma.

She completed the adjuvant chemotherapy EE-4A regimen, which consists of 18 weeks of vincristine and dactinomycin, according to the National Wilms' Tumor Study Group (NWTS)/Children Oncology Group (COG) protocol, in September 2023. Treatment toxicity included reversible Grade 3 acute kidney injury and Grade 1 peripheral neuropathy. She is currently in remission up to date with surveillance imaging.

CONCLUSION

Most advanced stages at diagnosis are due to rarity of the adult nephroblastoma, unlike low stage with good prognosis in our case. Oncologic prognosis in adults is usually worse than in children, with poorer treatment tolerability. Stage-appropriate multimodality treatment approaches in adult nephroblastoma extrapolated from the National Wilms' Tumor Study Group (NWTS)/Children Oncology Group (COG) protocol are recommended[2,3].

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KEYWORDS

Nephroblastoma, Wilms' Tumor, Chemotherapy, Adult

IMPACT OF A DIGITAL EDUCATIONAL PROGRAM ON NURSES' KNOWLEDGE AND ATTITUDES TOWARD PAIN ASSESSMENT AND MANAGEMENT IN A MALAYSIAN ONCOLOGY HOSPITAL

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INTRODUCTION

Prevalence of pain is high in cancer patients and nurses have a pivotal role in influencing patients' pain experience (Mejin et al., 2019). Digital technology can be a useful modality in education but its effectiveness in healthcare education is equivocal.

MATERIALS & METHODS

This quasi-experimental study, with one group pre-test and post-test design, evaluated Malaysian nurses' knowledge and attitudes toward pain assessment and pain management using the 'Knowledge and Attitudes Survey Regarding Pain'(KASRP) questionnaires before, immediately after, and five months after a digital educational program. Paired data was collected and the Wilcoxon Signed Rank Test was used to measure the differences in scores.

RESULTS

The knowledge and attitudes towards pain assessment and pain management of the 69 nurses before implementation of the digital educational program were poor with the average score of 51%±12.37 in the KASRP. Following the educational intervention, the mean total score was 59.73%±16.44 ($p<0.001$). Five months after the educational program, the mean total score was 60.18 %±15.04 ($p<0.001$).

DISCUSSION

Similar to the study done by Yaakup, Tan & Shah (2014), the level of knowledge and attitudes towards pain assessment and pain management among nursing staff in this study, before the educational intervention was poor. However, the accessibility and flexibility of the digital program has facilitated continuous learning and significantly improved the nurses' knowledge and attitude towards pain. This indicated that digital learning can be an efficient modality in delivering continuing education and training for nursing professionals.

CONCLUSION

This study demonstrated that although Malaysian nurses' knowledge and attitudes toward pain assessment and pain management is poor, a digital educational intervention can be an efficient way to improve that. However, in order to have continuous improvement in the nurses' knowledge and attitudes, further refresher courses on the topic is needed.

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ERYTHROCYTOSIS: A RARE BUT DISTINCTIVE COMPLICATIONS IN HEPATOCELLULAR CARCINOMA PATIENTS TREATED WITH LENVATINIB.

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INTRODUCTION

Lenvatinib is an oral multikinase inhibitor that targets pathogenic angiogenesis and tumour proliferation which now has FDA approval for usage in solid tumours comprising of thyroid, renal cell and hepatocellular carcinoma [1]. The common adverse effects of Lenvatinib that has been reported in various clinical trials inclusive of pivotal hepatocellular carcinoma (HCC) trial does not entail erythrocytosis; a rare occurrence that imposes thromboembolic risk seen in other common anti-angiogeneic drugs [2]. However, a retrospective cohort study of 23 patients with advanced HCC that has been treated with Lenvatinib has reported frequent and specific erythrocytosis irrespective of Lenvatinib dose in this group of patients [3]. Ironically, this phenomenon is only observed in HCC patients receiving Lenvatinib and not in other tumour groups like thyroid or renal cell carcinoma having treated with same drug [3,4].

REPORT

This case reports explores an insidious occurrence of erythrocytosis in a 61 years old ,newly diagnosed HCC BCLC B with a baseline Child Pugh Score of 6 upon initiation of Lenvatinib. He was initially started on Lenvatinib 12mg OD dose after which he developed Grade 2 diorrhea whereby his Lenvatinib dose was reduced to 8mg OD within three weeks of treatment. He presented with a flushed facies , intermittent headache and fatigue at week eight which set off clinical workup that revealed erythrocytosis. His haemoglobin (Hb) levels were at 18.8g/dl, packed cell volume (PCV) of 62% and erythrocyte sedimentation rate (ESR) of 9mm/hr. Upon retrospective review, it was noted that his Hb levels and PCV were steadily increasing paired a steady decline in his ESR despite being asymptomatic clinically. Medical team expertise were sought in deciding need for thrombolysis, thromboprophylaxis as well as venesection as indicated. His blood parameters returns to baseline with temporary withdrawal of lenvatinib which further supported our clinical diagnosis.

CONCLUSION

In conclusion, erythrocytosis a potentially rare but distinctive complication in hcc patients receiving lenvatinib that warrants high clinical suspicion and close clinical monitoring in this group of patients**.**

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COMPARATIVE ANALYSIS OF SYSTEMATIC AND RANDOM ERRORS IN TUMOR LOCALIZATION FOR HEAD AND NECK CANCER IMRT

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INTRODUCTION

Head and neck cancers (HNC) often require precise radiotherapy due to the complexity of the anatomical structures involved. Accurate tumor localization is crucial to minimize damage to healthy tissues and improve treatment outcomes. This study aims to compare systematic errors (consistent, reproducible deviations) and random errors (unpredictable deviations) in tumor location during Intensity-Modulated Radiation Therapy (IMRT) for head and neck cancer.

MATERIALS & METHODS

A retrospective analysis was conducted on the IMRT treatment plans of 50 patients with HNC. Systematic errors were assessed using initial setup deviations recorded during image-guided radiotherapy (IGRT) sessions. Random errors were evaluated by analyzing daily positional variations from the mean setup position. Data was analyzed using statistical software to quantify the magnitude of systematic and random errors.

RESULTS

The mean systematic error in tumor localization was found to be 2.5 mm (±11.0 mm). The mean random error was recorded as 1.6 mm (±0.9 mm). Systematic errors were more prevalent in the anterior-posterior direction, while random errors were more evenly distributed across all axes. The frequency and magnitude of errors were influenced by tumor site and patient-specific factors.

DISCUSSION

Systematic errors primarily resulted from consistent setup inaccuracies and patient movement patterns. Random errors were influenced by day-to-day variations in patient positioning and anatomical changes during treatment. Understanding these errors allows for better planning and adaptive strategies to mitigate their impact. The study highlights the need for robust IGRT protocols and adaptive radiotherapy approaches to address both types of errors.

CONCLUSION

Both systematic and random errors significantly impact tumor localization in head and neck IMRT. Accurate initial setup and continuous monitoring are essential to reduce these errors. Future research should focus on advanced imaging techniques and adaptive radiotherapy to further minimize errors and enhance treatment precision. This structured comparison provides

valuable insights into the nature and management of localization errors, ultimately aiming to improve therapeutic outcomes for head and neck cancer patients.

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KEYWORDS

Systematic Error; Random Error; Intensity-Modulated Radiation Therapy; Head and Neck Cancer; Patient Positioning Setup

CASE REPORT: ADRENOCORTICAL CARCINOMA IN TWO YEARS OLD GIRL

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INTRODUCTION

Pediatric adrenocortical carcinoma (ACC), originating from the adrenal cortex is a rare and aggressive cancer. The tumor causes endocrine disturbances and occasionally an abdominal mass. The ACC will cause endocrine disturbances, such as virilization alone or in combination with hypercortisolism, hyperestrogenism, and isolated Cushing syndrome. Diagnosis involves a combination of imaging studies, hormone levels, and histopathology. Because of its rarity, especially in pediatric patients, we report a case of adrenocortical carcinoma in an earlier age of a girl.

REPORT

A 2-year-old girl presented with clitoromegaly. Pubic and axillary hair had appeared in the last one-year-old. The mother also complained of acne and excessive sweating since the age of 6 months. She was growing tall rapidly (>95% percentile CDC 2000, BMI 15.5). The pubertal status was Tanner Stage A2M1P2 and Prader 1. The AFP, beta-HCG, LDH, NSE, 17-OHP, electrolyte, and morning cortisol were normal. The DHEA increases reaching >1500 mcg/dL. The ultrasonography revealed a solid mass on the posterior inferior of the left kidney. A solid suprarenal mass bordered with the left kidney and normal right adrenal was found on the abdominal CT scan. Core biopsy was inconclusive for rhabdomyosarcoma, Wilms tumor, and adrenal tumor. She was treated with hydrocortisone by an endocrinologist. After seven months, the multidisciplinary collaboration between pediatric oncologists, surgeons, endocrinologists, pathologists, and radiologists decided on tumor excision to obtain accurate histopathology samples. Immunohistochemistry concluded adrenocortical carcinoma. The pediatric oncologist gave chemotherapy with cisplatin, etoposide, and doxorubicin in eight cycles, without Mitotane (unavailable in our hospital). The prognosis may be better for younger age, the localized tumor, and small size (<10 cm). The DHEA fell to 15 mcg/dL after surgery. The pubic hair, axillary hair, acne, and perspiration were gradually disappearing.

CONCLUSION

Proper and rapid diagnosis is important for better management of pediatric adrenocortical carcinoma.

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A CASE OF EXTRANEURAL METASTASES IN ANAPLASTIC EPENDYMOMA

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INTRODUCTION

Ependymomas are rare glial tumours that typically arise from the central nervous system. Recurrences usually occur at the primary site or spinal cord, with extraneural metastases being uncommon.

METHOD

A case report of anaplastic ependymoma metastasizing to the cervical lymph node and scalp.

RESULTS

A 32-year-old woman was initially diagnosed with grade 2 right parietal ependymoma in 2009. She had local recurrence in 2013 which she had tumour resection followed by adjuvant radiotherapy 54Gy/30#/6weeks. She subsequently had local recurrence in 2017 and 2020 which tumour resection was histologically confirm to be grade 2 ependymoma. In 2023, there was local recurrence involving the scalp. Due to the extent of surgery, she was given 3 cycles of neoadjuvant chemotherapy but CT scan shows progressive disease. She eventually underwent tumour excision with extensive scalp removal and flap covering. HPE showed malignant transformation to anaplastic ependymoma. Due to nature of disease she was counselled for reirradiation to tumour bed and planned for 60Gy/30#/6weeks. During mid-course of radiotherapy noted she had enlarged right cervical lymph node which biopsy confirmed to be metastatic anaplastic ependymoma. CT restaging confirmed multiple right cervical lymphadenopathy with no other distant metastases. She began concurrent treatment with temozolomide and completed it in February 2024 after soughting expert opinion from neurooncologist subspecialty and MDT (ASCO neuroMDT). NGS was also sent for further tumour profiling. She continues with adjuvant systemic temozolomide therapy.

CONCLUSION

Anaplastic Ependymoma with extraneural metastases is exceedingly rare. Transformation from grade 2 to anaplastic ependymoma is possible. Due to the uncommon nature of such metastases and the absence of standardized treatment protocols, this patient was managed with salvage chemotherapy to control her disease. NGS is also an important tool in rare tumour potentially providing guided targeted therapy options.

UPDATED PATIENT-LEVEL NETWORK META-ANALYSIS OF FIRST-LINE SYSTEMIC THERAPIES FOR ADVANCED HEPATOCELLULAR CARCINOMA

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ABSTRACT INFORMATION
Patient-Level Network Meta-Analysis

BACKGROUND
The field of aHCC continued to evolve with the publications of LEAP-002, IMbrave 150, RATIONALE-301, CARES-310, Checkmate 459, ORIENT-32, HIMALAYA and COSMIC-312 prompting a re-evaluation of the current evidence and necessitating an analysis of relative treatment efficacy within individual subgroups. The objective of this systemic review and patient-level network meta-analysis (NMA) was to evaluate the assortment of first line systemic therapy for advanced HCC (aHCC), harnessing the ability of new method termed Kaplan Meier (KM) subtraction to obtain patient level information.

METHODOLOGY
A comprehensive systemic literature search was conducted on PubMed, EMBASE, Scopus and the Cochrane Controlled Register of Trials for phase III randomized controlled trials investigating first-line systemic immunotherapy (IO) combination therapies for aHCC. Kaplan-Meier curves for overall survival (OS) and progression-free survival (PFS) was graphically reconstructed to retrieve individual patient-level data. Data were summarized as hazard ratios (HR) with 95% confidence intervals. Two reviewers independently assessed eligibility and quality of studies using a modified version of Detsky Quality Scale. We applied KMsubstraction in R to obtain individual patient level data from the trials for subsequent metanalysis.

RESULTS
Eight trials (LEAP-002, IMbrave 150, RATIONALE-301, CARES-310, Checkmate 459, ORIENT-32, HIMALAYA, COSMIC-312) representing 5834 patients were included in the final analysis. KM analysis showed overall survival benefit of IO based combination therapy over single agent TKI. Sub-group analysis showed MVI/EHS, BCLC C and hepatitis B favored IO based combinations over TKI alone. There is a survival benefit with IO-IO combination regimen in non-viral aHCC.

CONCLUSION
Our robust individual patient data NMAs supports IO combination regimen as first line therapy and results from subgroup analysis may guide personalization according to baseline characteristics.

KEYWORDS
Hepatocellular carcinoma, Immunotherapy, Meta-analysis.

ASSESSING THE OVERALL EFFECTIVENESS OF MOUTHWASHES IN REDUCING ORAL MUCOSITIS PAIN DURING CHEMORADIOTHERAPY IN NASOPHARYNGEAL CARCINOMA PATIENTS

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INTRODUCTION

This longitudinal study evaluated the overall efficacy of mouthwashes in mucositis-related pain in nasopharyngeal carcinoma (NPC) patients undergoing concurrent chemoradiotherapy (CCRT).

MATERIALS & METHODS

A longitudinal study enrolled 79 NPC patients receiving CCRT. Patients were interviewed three times in the 3rd, 5th and 7th weeks of treatment for pain scores before and after using each of the prescribed mouthwashes, which could include lidocaine, benzydamine, aspirin, sodium bicarbonate, Oral7®, Magic and nystatin mouthwashes. Pain score reduction was calculated.

RESULTS

Fifty-nine participants completed three interviews, in which 490 instances of mouthwash use were observed throughout the treatment. The median pain score reduction for lidocaine (112 observations) was 2 (IQR, 3), while for the Magic mouthwash, 12 observations), the median pain score reduction was 1.5 (IQR, 1). The pain score reduction of these 2 mouthwashes was significantly higher than benzydamine, aspirin, sodium bicarbonate, Oral7®, and nystatin.

DISCUSSION

Our study findings regarding the cumulative reduction in total pain scores suggest that lidocaine mouthwash is the most consistently effective option, followed by Magic mouthwash. Despite the constant evolution of various factors such as chemoradiotherapy type, treatment interruptions, mucositis grade, immune function, side effects, dysphagia, mucosal healing rate, trismus, and others, these mouthwashes demonstrate effectiveness[1]. However, our results suggested that a combination mouthwash containing a local anaesthetic with a secondary component such as an antihistamine or anti-inflammatory agent, while beneficial, was less potent compared to a higher dose of local anaesthetic alone[2]. Users of benzydamine mouthwash reported increased pain, possibly due to the alcohol content in the formulation causing mucosal irritation[3].

CONCLUSION

The preferred overall choice was lignocaine mouthwash, followed by Magic mouthwash for treating mucositis pain in NPC patients receiving CCRT.

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SUCCESFUL IVF PREGNANCY FOLLOWING RADICAL TRACHELECTOMY FOR EARLY CERVICAL CANCER. A CASE REPORT

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INTRODUCTION

Surgically treated early cervical cancer disease normally renders women infertile , having the uterus cervix and vaginal cuff removed.In carefully selected women , uterine preservation and potential pregnancy can be considered in very early cervical cancer disease.We report a successful IVF pregnancy post radical trachelectomy surgery for stage 1B1 (FIGO 2018) cancer cervix.

REPORT

This 35 years old lady ,married for 9 years, was diagnosed of cervical carcinoma stage 1B1, ,post cervical polyp removal during ovum retrieval of IVF treatment (March 2023) .MRI pelvis , CT scan Thorax Abdomen Pelvis revealed a localized stage 1B1 disease.Treatment option of radical trachelectomy and pelvic node dissection was councelled , agreed upon and performed .After 6 months post surgery and 2 consequitive normal cervical smears review , the couple conceived following IVF treatment of single embryo transfer transvaginal approach (November 2023),Her current pregnancy is at 20 weeks gestation at the time of submission of this case report.She is currently on hormonal progesterone support and with a due delivery date on 18 August 2024.

CONCLUSION

Fertility sparing surgery by trained gynaeoncologists, strict patient selection criteria and access to assisted conception can allow and improve chances of conception in couples with early cervical cancer.

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THE IMPACT OF CHEMOTHERAPY COMPLETION AND RELATIVE DRUG INTENSITY ON OVERALL SURVIVAL OF BREAST, COLORECTAL AND LUNG CANCER PATIENTS

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INTRODUCTION

The chemotherapy treatment for solid cancer is often disrupted by premature discontinuation or prolonging the treatment interval to complete the regimen[1]. Relative drug intensity (RDI; delivered total dose compared to standard protocol) is a method to evaluate the impact of the dosing on treatment outcome. This study aims to investigate the prevalence of chemotherapy completion and the effects of RDI >85% on overall survival in breast, colorectal, and lung cancer patients.

MATERIALS & METHODS

A retrospective cohort study was conducted among patients who received chemotherapy between Jan 2011 and Dec 2022 at Seri Manjung Hospital, Perak. The duration from the date of the first cycle until June 31, 2023, was analyzed as the survival function using Kaplan-Meier with a log-rank test, while Cox proportional hazard regression was used to adjust the hazard risk (AHR) with stratification for cancer type.

RESULTS

426 cancer patients (Breast: 273, Colorectal: 123, Lung: 30) were evaluated. The chemotherapy completion rate, RDI > 85%, and overall survival were as follows: [(Breast: 79.5%, 56.8%, 66.7%), (Colorectal: 40.7%, 7.3%, 45.5%), (Lung: 23.3%, 16.7%, 13.3%)]. The survival function for patients with RDI > 85% for breast, colorectal, and lung cancer was 65.4%, p<.001, 88.9% p=.05, and 40.0%, p=.15, respectively. When RDI >85% was compared to RDI <85%, RDI> 85% lowered the risk of death by 0.82 times (AHR 0.82, 95% CI 0.47 -1.43; P=0.49) for breast cancer, by 0.33 times (AHR 0.33, 95% CI 0.04-2.5; P =.28) for colorectal cancer and was incomputable for lung cancer.

DISCUSSION

Dose delays and reduced RDI were common [2]. While RDI >85% correlated with higher overall survival, the impact of other variables, such as cancer stage and modality, plays a more significant risk in survival outcome.

CONCLUSION

These findings can be used to characterize the impact of chemotherapy dose modification tactics on mortality as well as identify possible risk factors.

KEYWORDS
Relative drug intensity, breast, colorectal, lung, cancer, overall survival

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FACTORS INFLUENCING RESILIENCE IN PATIENTS WITH TERMINAL ILLNESSES: A CROSS SECTIONAL STUDY

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INTRODUCTION

Patients with advanced cancer or chronic organ failures often have "total pain" where physical decline can accentuate psycho-existential distress. Resilience is crucial in helping these patients to cope with adversity, but limited information is known about factors influencing it. This study aimed to explore physical, psycho-social and spiritual factors influencing resilience in patients with terminal illnesses

METHODOLOGY

This was a cross-sectional study on 64 patients admitted to palliative care unit, Queen Elizabeth Hospital from May 2023 to February 2024. Data were collected using a demographic data collection form, Integrated Palliative Outcome Scale (IPOS), FACIT-Spiritual Well-Being (FACIT-Sp-12), Big Five Personality Inventory-10 (BFI-10), Brief Resilient Coping Scale, Brief-COPE. Factors influencing resilience were analyzed using SPSS.

RESULTS

Majority of patients had advanced cancer (86%) while 14% had chronic organ failures. The mean Brief Resilience Scale was 14.81 (SD 2.65), with one third reported low resilience (score < 14). Coping strategies that had significant positive correlation with resilience include positive reframing ($r=0.47$, $p<0.001$), acceptance ($r=0.30$, $p=0.02$), religion ($r=0.32$, $p=0.01$) and active coping ($r=0.54$, $p<0.001$). Spiritual well being ($r=0.48$, $p<0.001$) was also associated with greater resilience. Denial ($r= -0.34$, $p=0.01$), behavioral disengagement ($r= -0.40$, $p=0.001$) and self-blame ($r= -0.38$, $p=0.002$) showed significant negative correlation with resilience. Impact of physical symptom burden on resilience did not reach statistical significance ($p=0.06$).

DISCUSSION/CONCLUSION

Coping styles and spiritual well being had significant influence on patient resilience in facing terminal illnesses. Spiritual care support and development of adaptive coping skills can help build resilience in this group of patients.

SEVERE HYPERSENSITIVITY REACTION TO INTRAVENOUS ETOPOSIDE: A CASE REPORT

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INTRODUCTION

Hypersensitivity reaction (HSR) to intravenous Etoposide is a rare but life-threatening adverse drug reaction (ADR). However, in germ cell tumour patients whom Etoposide-containing regimens are given with curative intent, omitting Etoposide may compromise treatment efficacy. We report the successful use of Etoposide Phosphate as a substitute for a patient who developed severe HSR to intravenous Etoposide.

REPORT

A 48-year old man with mediastinal seminoma and underlying end-stage renal disease (ESRD) was admitted for Cycle 1 Carboplatin/Etoposide (CBDCA+ETP).[1] Within minutes of Etoposide infusion, he developed shortness of breath, hypotension, tachycardia and dyspnoea. His symptoms resolved after administration of intravenous Chlorpheniramine, Hydrocortisone and supplemental oxygen. The patient was not rechallenged due to the life-threatening HSR. Although HSR to intravenous Etoposide is rare (1−3%), it may be severe and reactions usually occur within 10 minutes.[2] A suggested hypothesis for Etoposide-induced HSR is the vehicle to dissolve Etoposide (polysorbate 80 and benzyl alcohol) may be responsible.[3] Etoposide Phosphate is a water soluble prodrug of Etoposide that contains neither polysorbate 80 nor benzyl alcohol, and was designed to obviate HSR associated with intravenous Etoposide.[4] It has been successfully used in patients with previous HSR towards intravenous Etoposide, without allergic sequalae.[5] Since Etoposide Phosphate is not registered in Malaysia, its procurement requires an import permit. The patient subsequently received an equivalent dose of Etoposide Phosphate to the CBDCA+ETP regime. He tolerated the infusion well, did not exhibit any HSR and has been ongoing further cycles of CBDCA+ETP uneventfully.

CONCLUSION

This case highlights the experience of HSR to intravenous Etoposide which is a rare but potentially severe ADR. It presents a therapeutic challenge, particularly in cancer patients with ESRD, due to the complexities involved in selecting chemotherapeutic agents in this patient population. To avoid adverse sequelae, substitution with Etoposide Phosphate may be considered over a rechallenge.

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KEYWORDS
etoposide, etoposide phosphate, hypersensitivity, adverse drug reaction, end-stage renal disease

ASSESSING MOTION OF LUNG TUMOURS PTV DURING STEREOTACTIC BODY RADIOTHERAPY (SBRT): UTILIZING FOUR DIMENSIONAL COMPUTED TOMOGRAPHY (4DCT) AND THREE DIMENSIONAL COMPUTED TOMOGRAPHY (3DCT) IMAGING

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INTRODUCTION & PURPOSE

The study investigates the differences in evaluating tumour motion during Stereotactic Body Radiation Therapy (SBRT) using 4DCT and 3DCT image registration techniques. It aims to assess the precision of tumour motion tracking and how each modality accounts for variations induced by respiratory factors. Initial 4DCT scans evaluate intra-fractional changes in the PTV centroid and boundary, while post-treatment 3D CBCT scans assess inter-fractional set-up displacement.

METHOD & MATERIAL

Data were gathered from lung cancer patients undergoing SBRT between 2020 and 2023. Verification images were collected, and table shift details for lateral, longitudinal, and vertical motion were extracted for both imaging techniques. The numerical values of each shift were analysed.

RESULTS

The analysis reveals a maximum difference of 0.7 ± 0.5 cm in image verification accuracy between 3DCT and 4DCT for patients before and after treatment. This indicates consistent precision across both techniques throughout the treatment process.

DISCUSSION & CONCLUSION

Results highlight 4DCT's high accuracy, particularly for tumours affected by respiratory motion, facilitating organ at risk (OAR) avoidance. Dual verification is typically used for aligning bony structures and tumours, more suitable for cases with minimal respiratory variability. Since tumour localization is influenced by respiratory motion, 4DCT effectively captures dynamic changes during the respiratory cycle. This suggests its superiority in accurately assessing tumour motion and optimizing treatment delivery during SBRT.

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DOSIMETRIC STUDY ON THE EFFECT OF DENTAL IMPLANT IN EXTERNAL BEAM RADIOTHERAPY OF SALIVARY GLAND CANCER USING GEANT4 MONTE CARLO SIMULATION

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INTRODUCTION

The majority of patients with head and neck cancer, notably oral, nasal, and paranasal malignancies, are 50 years of age or older, a group most likely to have a dental implant or prosthesis. Dental implants are often made of high-density materials like metal, ceramic, or polymer materials. The aim of this study was to evaluate the discrepancies in dosimetric effect of the dental implants on the 6 MV external beam radiotherapy for salivary gland cancer by using Geant4 Monte Carlo Simulation.

MATERIALS & METHODS

The simulation was conducted using MIRD5 adult male anthropomorphic phantom, readily available in the GEANT4 Monte Carlo package, and a few additional structures were incorporated, such as dental implants, the parotid gland as an irradiated organ, and OARs (brain, brain stem, eyes, eye lens, optic nerve, optic chiasm, submandibular and sublingual glands, tongue, upper and lower jaw, and thyroid). Cylindrical implants measuring 4 mm in diameter and 5 mm in length were inserted into both upper and lower jaw varies by three different parameters: 1) Material of implant (Amalgam, Gold, and Titanium), 2) Number of implant (no implant, single implant, multiple implants, full-mouth implant), and 3) Position of implant (right, left and front of jaw). The absorbed dose to the implant, parotid gland and OARs were recorded.

RESULTS

The results showed that the absorbed dose to the upper and lower jaw as well as tongue, submandibular and sublingual glands significantly increases when dental implants are present. Also, absorbed dose to these OARs were affected by the type of materials, number, and placement of dental implants.

DISCUSSION

High density materials of pure titanium, gold, and amalgam implants were employed in this study. Due to these chemical and physical properties, the OARs on the scatter side of the interfaces with the presence of implants exceeds the dose to OARs without the implant resulting from the scattering cascade of secondary electrons from the high-density material.

CONCLUSION

In conclusion, high-density dental implants are shown to cause an increase in the absorbed dose to OARs due to Compton scattering, therefore, adjustments to the prescribed dose should be considered for patients with dental implants.

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RELIABILITY AND VALIDITY OF THE MALAY VERSION OF CAREGIVER QUALITY OF LIFE INDEX-CANCER (CQOLC) SCALE IN MALAYSIAN CANCER CAREGIVERS

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INTRODUCTION

The caregivers of cancer patients suffer from psychological distress which ultimately affects their Quality of Life (QOL) with increasing burden of treatment over the cancer patients[1]. There is no disease-specific instrument to measure the quality of life of cancer caregivers in Malaysia. We aimed to validate the Malay version of the Caregiver Quality of Life Index-Cancer (Malay-CQOLC) scale in Malaysian Cancer Caregivers.

MATERIALS & METHODS

This is a cross-sectional study performed from September 2022 to April 2024. A total of 310 cancer caregivers from cancer centre in Johor participated in the study. The Malay-CQOLC scale has 35 items consist of 4 domains namely burden, positive adaptation, disruptiveness and financial concern. All socio-demographic data and QOL profile were evaluated descriptively. Internal consistency and construct validity was determined by cronbach's alpha and principle axis factoring extraction test respectively.

RESULTS

Majority of the participants were female (62.8%), married (68.3%), and Malay (70.6%) with a mean age of 40.0 (± 12.63). The mean caregiver QOL score was 59.32 (±20.96), with a higher score indicating worse QOL. Internal consistency (Cronbach's alpha) of the total and domain scores ranged from 0.80 to 0.91 indicates a good reliability of the instrument. EFA using different factor extraction methods yielded 2 models. There are 4 factors in Model 1 and 8 factors in Model 2 with KMO value of 0.898 and significant Bartlett's test of Sphericity ($p<0.001$) respectively. The factor loading for Model 1 and Model 2 ranged from 0.343 to 0.847 indicates acceptable items of the instrument.

DISCUSSION

Majority of the items were very close to the original English model. It showed good internal consistency and construct validity for all domains.

CONCLUSION

The Malay-CQOLC scale was found to be a valid and reliable instrument to be used for Malaysian cancer caregivers.

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KNOWLEDGE LEVEL ON ESOPHAGUS CANCER AMONG HEALTHCARE WORKERS IN RADIOTHERAPY AND ONCOLOGY DEPARTMENT AT INSTITUT KANSER NEGARA, PUTRAJAYA

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INTRODUCTION

Cancer that originates in the oesophagus, a long, hollow tube that joins the throat and stomach, is known as esophageal cancer. usually starts in the cells lining the esophageal wall. Anywhere along the oesophagus may see its development (Mayo Clinic, 2022). Because of its tremendous aggressiveness and low survival rate, esophageal carcinoma (ESC) is one of the deadliest and least investigated tumors globally. In Malaysia, esophageal cancer (ECA) is a significant cancer. The study's objective is to ascertain the level of knowledge on esophageal cancer among medical professionals working at the Institut Kanser Negara, Putrajaya's Radiotherapy and Oncology Department.

MATERIALS & METHODS

The subjects of a cross-sectional study were healthcare personnel employed by Institut Kanser Negara, Putrajaya, in the Linac 1 and 2 Novalis, Tomotherapy, Manual Planning, CT Simulator 1 and 2, Data Process, Contour Room, TPS room, Radiotherapy Office, Radiotherapy Clinic, and HDR departments. Self-administration linked demographic data and information about esophageal cancer were employed in the data gathering process. The study was completed in four months.

RESULTS

A rate of 86.91% of respondents. The findings indicated that 82.8% of the healthcare personnel possessed sufficient expertise. Given that the p-value is less than 0.05, statistical analysis demonstrated a relationship between the position of healthcare workers and their level of knowledge regarding esophageal cancer.

DISCUSSION

In general, healthcare professionals are sufficiently knowledgeable about esophageal cancer. To help raise awareness of esophageal cancer and the value of early detection screening, they must, nevertheless, get a deeper understanding of the disease.

CONCLUSION

Given the low survival rate of esophageal cancer in the first line of treatment, healthcare professionals should arm themselves with enough knowledge to ensure that it is kept up to date and updated through ongoing education.

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LONG-TERM RESPONDERS TO DUAL ANTI-HER2 THERAPY IN HER2-POSITIVE METASTATIC BREAST CANCER: CASE REPORTS

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INTRODUCTION

Recombinant anti-HER2 antibodies, trastuzumab and pertuzumab significantly improve progression-free survival in HER2-positive metastatic breast cancer (MBC) patients.[1] Long-term responders (LTRs) are patients who remain progression-free for at least 35 months while receiving anti-HER2 therapy.[2] We report two cases of LTRs in hormone receptor-negative, HER2-positive MBC patients with no reported cardiotoxicity.

REPORT

In 2016, a 29-year-old lady with right breast carcinoma and liver metastasis underwent palliative systemic therapy with docetaxel, pertuzumab and trastuzumab. She achieved a remarkable response with six-years disease progression-free before developing brain metastasis in 2022. Following excision of her brain metastasis and whole brain radiotherapy, she continued dual anti-HER2 therapy (109 cycles thus far) and has had no intra or extracranial disease progression to date. The patient's cardiac function remained good on surveillance echocardiograms. The second patient is a 47-year-old lady, diagnosed with MBC (lung, bone metastasis) in 2016. Following six cycles of docetaxel and dual anti-HER2 therapy, she underwent a toilet mastectomy. She demonstrated long-term response to anti-HER2 therapy for six years before developing brain metastasis in 2022. Following tumour debulking and focal radiotherapy, she continued the dual anti-HER 2 therapy (111 cycles to date). She continued to have stable disease with a well-preserved performance status and cardiac function.

Anti-HER2 therapies effectively control extracranial disease but due to the limited blood-brain barrier permeability of these antibodies, it is possible for patients to develop brain metastasis while on this therapy.[3] Although intracranial disease may have developed, current guidelines recommend the continuation of anti-HER2 therapy as long as extracranial disease is well-controlled.[4] Prolonged anti-HER2 therapy beyond 24 months was not associated with significant reduction in left ventricular ejection fraction.[5]

CONCLUSION

Durable long-term response can be achieved in HER2-positive MBC even among patients who develop brain metastasis while on therapy, with local therapy for the brain and continuation of dual anti-HER2 therapy.

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MULTINATIONAL SURVEY STUDY ASSESSING GENETIC TESTING AND COUNSELLING AMONG PATIENTS WITH BREAST CANCER [MAGENTA]

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INTRODUCTION

Despite genetic testing (GT) and counselling (GC) being key in breast cancer (BC) risk assessment, fewer than one-third of patients (pts) with BC undergo GT. GC uptake rates are low even among pts undergoing GT. A global survey was conducted among pts with BC to identify the gaps in the GT and GC experience and to propose strategies to fill them.

MATERIALS & METHODS

A steering committee comprising of pts and pt advocates co-developed a 38-question survey, which was offered to pts in 9 countries, including Malaysia. The questions pathway was dependent on response to prior questions. Chi-square test was used to assess significance between responses, if applicable.

RESULTS

The final analysis set (FAS) included responses from 1176 respondents with >90% completion rate of survey questions. In the FAS, 737 (63%) respondents reported having undergone GT. Most respondents in the FAS (71%) rated their awareness level of GT/GC (before BC diagnosis) as between 'very low' to 'moderate'. 72% of the pts who did not undergo GT shared their main reason was because they were not offered GT. Pts who underwent GT were more

willing (74%) to endorse GT for all eligible pts before starting treatment than pts who did not undergo GT (64%). Among pts undergoing GT, 616 respondents responded to the question enquiring on the resources available to them to guide their GT experience, beyond their oncologist. These were the genetic counsellor (48%), pt support groups (38%) and websites (35%).

CONCLUSION

There are critical gaps in awareness, value, and access of GT among pts and the public, with notable variance between the tested and the non-tested populations. Most pts with BC are not offered GC, which significantly correlates with GT uptake. Strategic action is needed to overcome the barriers to GT and GC to improve the pt experience.

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IMPLEMENTATION FEASIBILITY OF CANCER INFORMATION PLATFORM (NEED's HERO PLATFORM) AT UNIVERSITY MALAYA MEDICAL CENTRE (UMMC)

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INTRODUCTION

Cancer treatments have evolved rapidly for the past few decades with increasing information and complexity (1). Cancer guidelines play a crucial role in enabling oncologists to form comprehensive management plans tailored for each patient. Need is a global technology company that developed a cancer information platform, "Need's Hero Platform" (NHP) combining artificial intelligence (AI) technology with a network of global subspecialists to empower oncologists to deliver personalized guideline-based treatment. We aim to assess the feasibility of implementing NHP at UMMC.

MATERIALS AND METHODS

Twenty retrospective cases of patients under active treatment were recruited from the Clinical Oncology Clinic, UMMC over a period of two months. Patients' deidentified medical records, laboratory data, pathology slides, and radiologic images were collected, digitized, and uploaded to NHP. The data was analysed on NHP by a combination of a global team of cancer subspecialists and AI systems. NHP surfaced treatment science information back to the treating oncologists after the analysis.

RESULTS

15 metastatic and five non-metastatic cancer patients of various sites were recruited from 14 December 2023 until 28 February 2024. Patient's medical histories, pathology slides, and radiology images were uploaded to NHP and subsequently analysed. Guideline-based pathology reviews, radiology reviews, and treatment science information were successfully generated for the 20 cases. Treating oncologists were notified once the information was available on NHP and could be reviewed for any discordance, where they had the ability to interact with Need's clinical team.

DISCUSSION AND CONCLUSION

This study successfully demonstrated the feasibility of using NHP to systematically generate and surface treatment science information for the physicians at UMMC. The impact of this platform in facilitating oncologists in delivering guideline-based treatment will need further assessment. Administrative error assessment, rates of utilisation by oncologists, discordance between primary and secondary reviews, and consistency between Need's treatment science information and the treating oncologist's plan will be prospectively studied.

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A CASE REPORT: METASTATIC BREAST CANCER EMULATING OF A PRIMARY GASTRIC LINITIS PLASTICA IN A PATIENT WITH PECTUS EXCAVATUM

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INTRODUCTION

Breast carcinoma ranks as the most prevalent cancer among females both globally (15.3%) and in Malaysia (23.6%).[1] Typically the primary sites of metastasis of breast carcinoma include bone, lung, and liver. Gastric metastasis is relatively uncommon, Bunting et al. reported that the frequency of detection of gastric metastases during life was only 6%.[2] Notably, invasive lobular carcinoma exhibits a higher incidence rate of gastric metastasis compared to invasive ductal carcinoma and its variable as linitis plastica.[3] This case highlights the diagnostic complexities encountered in a case of breast carcinoma presented with gastric symptoms in a patient with pectus excavatum.

CASE REPORT

48 years old premenopausal female, presented with epigastric pain for 2 months and abdominal bloatedness associated with reduced oral intake. Physical examination showed pectus excavatum with less-dense breast tissue and a well-circumscribed 1x1cm firm lump over the upper inner quadrant of left breast. Abdominal findings were insignificant. She underwent esophagogastroduodenoscopy which revealed linitis plastica with thickened stomach mucosa. Biopsy from stomach confirmed metastatic carcinoma from breast as confirmed by immunohistochemistry stained positive for cytokeratin 7, GATA-3, Oestrogen and Progesterone receptor, negative for HER2 and PAX8. Ultrasound of breast revealed simple left breast cyst. Mammogram was unable to be performed due to the structural deformity of severe pectus excavatum. Computed tomography of the thorax and abdomen demonstrated bone and peritoneal metastasis stage 4 disease. She was offered palliative chemotherapy FEC regimen. Unfortunately, she succumbed to her disease 2 months from diagnosis.

DISCUSSION & CONCLUSION

Pectus excavatum complicates the diagnosis of breast carcinoma, as the condition precludes the effective use of mammography. In such instances, MRI breast emerges as a superior diagnostic tool in patients with structural deformity.[4] Hematogenous spread of lobular breast carcinoma commonly presents as gastric linitis plastica. Endoscopy should be considered as a surveillance in lobular breast carcinoma. Treatment options such as chemotherapy, endocrine therapy, or a combination of both have the potential to extend survival by 2 to 3 years.[5]

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A RARE MALIGNANCY OF BREAST CARCINOMA METASTASIS TO COLON A CASE REPORT

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INTRODUCTION

Breast cancer metastasis to the colon is a relatively rare occurrence but can happen. When breast cancer spreads to other parts of the body, it's typically through the lymphatic system or the bloodstream. The most common sites for breast cancer metastasis include the bones, lungs, liver, and brain, but metastasis to the colon can occur, albeit less frequently.

REPORT

We report a case of a 61 years-old female presented with 10 years history of left breast lump. Mammogram showed hypoechoeic mass lesion of the left breast of BIRADS 5 and the biopsy confirmed invasive carcinoma hormone negative and HER2 positive. CT scan confirmed ill defined left breast mass at lower quadrant with multiple left axillary lymph nodes and distant cervical nodes metastases. She received 6 cycles of palliative chemotherapy Paclitaxel. CT reassessment showed response with smaller primary tumor, ipsilateral left axillary lymph nodes and bilateral cervical lymph nodes metastases. Then, she underwent left mastectomy and axillary clearance, followed by adjuvant radiotherapy to the left chest wall, left axilla and left supraclavicular fossa with total dose 40 Gy/15 fractions. However, she developed local recurrence and symptoms of intestinal obstruction. CT reassessment showed progression of disease with local recurrence of the left chest wall, new right breast enhancing lesion, worsening nodal, brain metastases and small bowel obstruction due to long segment bowel thickening involving the ascending colon, caecum and terminal ileum. She underwent ileostomy and the biopsy confirmed of metastatic carcinoma of breast origin.

CONCLUSION

GI metastases from breast carcinoma are very rare and uncommon. It is important to monitor signs and should always consider the possibility of a metastatic disease process whenever a patient presents with GI symptoms.

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HOPE? WHEN ALL IS LOST FOR YOUNG AND AGGRESSIVE MALIGNANCY

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INTRODUCTION

Anaplastic thyroid carcinoma is a highly aggressive malignant tumour. It undoubtedly carries the poorest prognosis. However with the advancement of understanding in the genetic and molecular pathogenesis of anaplastic thyroid carcinoma, we were able to use better treatment to achieve a better response. We reported a case of metastatic anaplastic thyroid carcinoma and aims to highlight the implication of managing anaplastic thyroid carcinoma based on tumour agnostic.

REPORT

A 50 year old Chinese lady presented with rapidly enlarging painless anterior neck swelling. Initial staging was reported as localised disease and she had total thyroidectomy with bilateral lymph node neck dissection done. The histopathology was reported as thyroid anaplastic carcinoma with margin involved which then she received radiotherapy to neck 60Gy in 30 fractions. Three months post radiotherapy, she complained of neck swelling whereby imaging with PET CT demonstrated local recurrence and metastases to distant lymph nodes and lung. Next generation sequencing was sent which included BRAF V600E, PD-L1, RAS, RET and PI3KCA. All biomarkers were negative except for PD-L1 in which the TPS scored more than 90%. She was then commenced on immune checkpoint inhibitor IV Pembrolizumab 200mg every 3 weeks initially but reduced to 100mg every 3 weeks after 5 months due to financial constraint. Serial radiological assessment shows partial response initially and subsequently stable disease. To date she had received a total of treatment for 15 months with no severe adverse effect. Clinically she is ECOG 0 and tolerating treatment well.

CONCLUSION

This case shows favourable treatment outcomes when the choice of therapeutic regimen was guided by tumour mutational analysis. Oncology management should reflect our understanding in tumour biology and as such cancer should be treated based on pathogenesis. Tumour agnostic is the way to go for the 21st century.

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EVALUATING TREATMENT ACCURACY: AN ANALYSIS OF EPID-BASED IN VIVO DOSIMETRY IMPLEMENTATION AT GLENEAGLES HOSPITAL PENANG

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INTRODUCTION

Dosimetric verification is an important component in radiotherapy treatment process but has remained a challenge due to difficulty to precisely record dose received by patients[1,2]. This study investigates the implementation of Electronic Portal Imaging Device (EPID)-based in-vivo dosimetry software for dose verification in Gleneagles Hospital Penang. The research focuses on evaluating the effectiveness of this method in assessing the dose accuracy on patients during treatment and its ability to identify potential treatment variation.

MATERIALS & METHODS

106 IMRT and VMAT deliveries on patients were captured using an EPID mounted on Elekta VersaHD LINAC in Gleneagles Hospital Penang. These images were then converted to dose value using EPIgray™ software (DOSIsoft, France) calibrated to convert image intensity value to radiation dose. The delivered doses were then compared to the planned dose from treatment planning system (TPS). Dose verification was performed at least once during the treatment course for each patient. We analysed the results from a cohort of 60 patients undergoing radiotherapy for various anatomical sites and reviewed its practicality in determining dose and patient anatomy changes during treatment.

RESULTS

87% of treatment delivery recorded less than 5% dose deviation from planned dose which was considered acceptable. Out of the 13% failed result, 6% were from flattening filter free delivery (FFF) and 7% was because of patient morphological changes.

DISCUSSION

The result suggests utilizing EPID which is already integrated into LINAC cuts short the preparation time for dose verification on patients and allows for a more in-depth analysis of patient changes during radiotherapy course. However further investigation is needed for the FFF beam modelling and analysis.

CONCLUSION

EPID based in-vivo dose verification offers advantages in terms of functionality. It provides ease of use and comprehensive perspective of the actual dose distribution during treatment ultimately improving treatment safety.

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A CASE REPORT OF FAVOURABLE RESPONSE TOWARDS EVEROLIMUS IN TREATING TSC2-MUTATED MALIGNANT RENAL EPITHELIAL ANGIOMYOLIPOMA (EAML)

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INTRODUCTION

Angiomyolipoma (AML) is one of the perivascular epithelioid cell neoplasms (PEComas) and epithelioid angiomyolipoma (EAML), is one of its rare subtypes with potential malignancy, local recurrences, nodal and distant metastases, often associated with tuberous sclerosis (TS) diagnosis.

REPORT

Current case reports a 36 years old Malay man who initially presented with fever and left flank pain for a month. Initial computed tomography (CT) revealed a large well-defined lesion at the left kidney upper pole, measuring 9.2x6.7x8.5cm, with mild enhancement on the arterial and portovenous phases, without fat component. Laparoscopic left nephrectomy was done and the histopathological examination (HPE) confirmed diagnosis of malignant renal EAML with more than 70% atypical cells, more than 2 mitotic figures/hpf, presence of necrosis and lymphovascular invasion and Gerota's fascia involvement. Immunohistochemical (IHC) staining positive for CD-68, CD10, Vimentin, Melan A and HMB-45 also favours the diagnosis of EAML, while the renal cell carcinoma panel IHCs which include EMA, CKAE1/3, Pax8, Napsin A, CAIX, TFE3 and S100 are negative. Distant metastases to the liver and lungs were discovered 8 months post-op. TSC2 mutation was revealed from next generation sequencing. Pazopanib was stopped due to poor tolerance and ineffective clinically as the patient continued having tumour fever despite antibiotic treatment. Favourable response was observed clinically (fever subsided) and radiologically (reduction in size and numbers of lung lesions and almost 50% reduction in total volume of liver metastasis) after 2 months of initiation of mTOR inhibitor, everolimus. In anticipation of disease progression based on the literatures, we aim to discuss the role of local therapy including surgery in patients who have responded to everolimus.

CONCLUSION

Due to the rare diagnosis and limited case reports regarding the successful use of everolimus in EAML treatment, we aim to share the favourable result achieved with everolimus.

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EXPLORING THE ROLES OF MITOCHONDRIAL-ASSOCIATED MICRORNAS OF HEAD AND NECK CANCER STEM CELLS IN DRUG RESISTANCE AND TUMOR RECURRENCE

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INTRODUCTION

Head and neck cancer (HNC) is one of the most common cancers worldwide. The primary clinical issues in HNC are drug resistance and tumor recurrence attributed to the presence of cancer stem cells (CSCs). Dysfunction of mitochondria may prevent CSCs from apoptosis. MicroRNAs have been reported to be a potential target for diagnosis and treatment strategy in many cancers, including HNC.

MATERIALS & METHODS

This study used public databases such as the MitoCarta3.0 database, the Cancer Genome Atlas (TCGA) database, and Enrichr website tools for the bioinformatics analysis. The COREMINE and the ONCO.IO website tools were chosen for data mining analysis. RT-qPCR test was used to identify the expression of Let-7c-5p.

RESULTS

Eighteen mitochondrial-associated miRNAs of head and neck cancer stem cells were predicted, where let-7c-5p is associated with drug resistance and tumor recurrence. Meanwhile, the low expression of Let-7c-5p in head and neck cancer stem cells was verified by RT-qPCR. Let-7c-5p and its target genes have an interaction network to participate in the cancer biological process, whereas let-7c-5p may mainly target KRAS and BCL2L1 to regulate mitophagy and apoptosis pathways for preserving cancer stem cells alive.

DISCUSSION

Let-7c-5p would regulate the genes involved in the EMT and drug transport process to preserve the stemness and drug resistance feature of CSCs. This would regulate CSC apoptosis by suppressing the DNA damage process, which is the reason for the HNC recurrence. Let-7c-5p and its target genes involved in the pathways related to the cancer stem cell and mitochondria were included, such as signaling pathways regulating pluripotency of stem cells, cell cycle, mitophagy, and central carbon metabolism in cancer.

CONCLUSION

Let-7c-5p may specifically target KRAS and BCL2L1 to regulate mitophagy and apoptosis pathways for preserving cancer stem cells alive. Drug resistance and tumor recurrence in HNC may be addressed creatively by the let-7c-5p-based therapy approach.

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REAL-WORLD OUTCOMES OF NEXT GENERATION SEQUENCING TESTING IN PATIENTS WITH CANCER: AN OBSERVATIONAL STUDY ON THE IMPACT OF SELECTION BASED ON CLINICAL JUDGEMENT

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INTRODUCTION

Next Generation Sequencing (NGS) assays are increasingly used in advanced cancers to guide precision medicine. NGS allows thousands of genes to be sequenced at the same time at a relatively low cost. The aim is to select treatment according to the genomic alterations detected in the tumor, applying so-called precision medicine.

MATERIALS & METHODS

In an observational study of 25 patients with cancer having self-funded NGS test (from June 2023 to May 2024) at Sarawak Cancer Centre, we evaluated whether the NGS result would add value to treatment decision and outcomes.

RESULTS

In the 25 cases that were successfully profiled, 20 patients had advanced lung adenocarcinoma, 1 patient had advanced squamous cell lung cancer, 1 patient with intra-hepatic cholangiocarcinoma, 1 advanced pancreas cancer, 1 thymic cancer and 1 patient with advanced chromophobe renal cell carcinoma. Ten patients had druggable alterations. Among the 10 patients, 8 had received genomic-informed drug. Five patients were enrolled into clinical trials because of the genomic information. All 25 cases had their profiling performed upfront upon diagnosis.

DISCUSSION

NGS tests can provide valuable information about tumor genomic profiles and these data can guide 'personalized' treatment and determine eligibility for clinical trials enrollment.

CONCLUSION

Our data showed that upfront full molecular profiling provides evidence of benefit for clinical judgement and appropriate treatment selection in patients with advanced cancer which can translate into better outcomes.

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RADIOTHERAPY POSITIONING REPRODUCIBILITY OF TATTOO-LESS PATIENT FOR PELVIS REGION

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INTRODUCTION

Tattoos are routinely used as a reliable landmark for patient positioning in radiotherapy. However, as tattoos cause discomfort to patients for various reasons, an alternative way to replace the use of these tattoos is investigated. In this study, a new positioning technique mainly in the pelvic region was developed without using tattoos and the reproducibility of the setup was tested.

MATERIALS & METHODS

20 patients were stimulated with tattoos and another 20 patients without any tattoos. During treatment positioning, the patient was aligned to room lasers using their permanent tattoos for a tattoo-based setup and the measured origin level taken from reliable bony and body landmarks for a tattoo-less-based setup. Both groups received image verification (XVI) before treatment execution. The offset shifts for each patient were recorded and the reproducibility (offset shifts ≤ 0.54 cm) was statistically analyzed.

RESULTS

Chi-square analysis showed that there was no association between setups (tattoo and tattoo-less) and reproducibility ($p=0.26$). Additionally, chi-square analysis performed to each offset shift's directions (lateral, longitudinal, and vertical) also perceived no association between setups (tattoo and tattoo-less) and the magnitude of offset shifts for lateral (X) ($p=0.15$), longitudinal (Y) ($p=1.0$) and vertical (Z) ($p=1.0$). Lastly, t-test analysis showed that only in the lateral (X) direction, there was a significant difference ($p=0.01$).

DISCUSSION

Both chi square analysis results agreed with most of published studies on translational shift. There was a significant difference in lateral (X) direction due to the movement subject to changes in patient's weight and volume of bladder and bowel. The results suggested for further improvement in anterior-posterior (AP) setup accuracy.

CONCLUSION

Both potential methods (tattoo-based setup and tattoo-less-based setup) showed a general equivalence and were reproducible. A significant difference in lateral (X) direction showed in the t-test was unavoidable and improvement measures must be taken. Future studies are recommended.

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IS BEARING MY OWN CHILD A DREAM IMPOSSIBLE TO FULFILL? PREGNANCY IN METASTATIC HORMONE RECEPTOR POSITIVE BREAST CANCER

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INTRODUCTION

More than 80% of breast cancer is diagnosed in women of child-bearing age, 50% and more were diagnosed with hormone receptor positive disease. The POSITIVE trial has showed that withholding treatment during adjuvant hormonal therapy for pregnancy does not negatively impact survival. However we have limited data on the sequencing strategy in metastatic disease. We presented a case of hormone receptor positive breast cancer, whom the patient has diminished chance to conceive as her disease recurred with nodal metastasis.

CASE REPORT

We reported a 36 years old lady diagnosed with localized left breast carcinoma, ER/PR positive, HER2 negative. She was diagnosed after her engagement. She proceeded with radical surgery in May 2019, pathological staging pT2 N0. The patient received adjuvant radiotherapy to the chest wall, and was on adjuvant tamoxifen planned for 5 years. She was married after radiotherapy, and has plans to conceive after the completion of treatment. Unfortunately, her disease recurred at fourth year of tamoxifen (April 2023) where she presented with a palpable left supraclavicular node. Excision biopsy confirmed a metastatic carcinoma of breast origin, ER 80%, PR 20%, HER 2 negative. PET scan showed no other distant metastasis. After surgical assessment, the recurred nodes were deemed non-resectable. We have offered second line treatment with the need for ovarian-suppression. However the patient has showed resistance towards the plan and delayed her treatment for 5 months. At this juncture, the disease has spread to bones and progressed in the cervical nodes. She was again offered options of ovarian-suppression, aromatase inhibitor (AI) with or without CDK4/6 inhibitor. After multiple discussions, she finally agreed to receive aromatase inhibitor and medical ovarian-suppression in September 2023.

DISCUSSION

Generally, it is still not recommended for patient with metastatic disease to stop her treatment for conception. Our patient is in her child-bearing age when diagnosed with hormone receptor positive metastatic breast cancer with limited disease burden. The POSITIVE trial sheds some light upon pursuing pregnancy after cancer diagnosis, interrupting therapy rather than cessation of therapy. In the trial, patients are allowed an interruption of treatment up to 2 years to attempt pregnancy, conception and delivery. The trial has showed that interruption of hormonal therapy in adjuvant setting is possible without affecting the survival of the patients. However, we do not have any data at the moment to support this application in metastatic setting, mostly due to the risk of disease progression during the washout period and subsequent pregnancy.

Furthermore, it is still a challenge in fertility preservation and planning in women with breast cancer in child-bearing age.

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COMPLETE REMISSION OF ADVANCED LOW-GRADE ENDOMETRIAL STROMAL SARCOMA AFTER ENDOCRINE THERAPY: A CASE REPORT

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INTRODUCTION

Low-grade endometrial stromal sarcoma (ESS) is rare and account for 2%-4% of all uterine sarcoma and 0.2% of all uterine tumours. Majority tend to be slow growing and indolent in nature. There is an atypical presentation in which rapid progression of the disease. In this situation, histopathological analysis is crucial to differentiate it from high-grade ESS in order to determine the prognosis and optimal treatment strategy.

REPORT

A 42-year old lady had been investigated for multiple episodes of symptomatic anaemia due to uterine fibroid. Pipelle sampling showed no hyperplasia or malignancy. Laparoscopic hysterectomy and bilateral salpingectomy were performed and multiple uterine fibroids were seen intraoperatively. Pathological examination revealed tumour cells invading into the myometrium up to serosa. Mitosis was rarely seen. Immunohistochemistry (IHC) study showed positive staining for CD10 and negative for SMA, Desmin and Caldesmon. The final histopathological analysis was consistent with low grade ESS. Computed tomography (CT) post hysterectomy revealed multiple enlarged pelvic nodes, largest measuring 1.5 x 1.4 cm. Laparoscopic converted laparotomy, bilateral oophorectomy, omentectomy and tumour debulking was performed. Multiple nodules on peritoneum, colon, mesentery and appendix with multiple enlarged pelvic nodes, largest 2 x 3 cm were discovered. IHC showed diffuse ER and CD10 staining. Despite its rapid progression, the tumour was lacking of typical high-grade features microscopically, therefore it was concluded to be low-grade ESS. Oral Megestrol acetate 160 mg per day was prescribed. CT scan was performed after 4 months, revealed complete remission with no recurrence.

CONCLUSION

We report a case of rapidly progressing low-grade ESS treated with first line endocrine therapy in which demonstrated a complete remission. Multi-analysis from a large group of patients is needed to emphasize the role of endocrine therapy in low-grade ESS.

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EFFICACY COMPARISON OF LOW VS. HIGH-DOSE RADIO-IODINE ABLATION IN LOW-TO-INTERMEDIATE RISK DIFFERENTIATED THYROID CANCER: A FIVE-YEAR DUAL-CENTER RETROSPECTIVE STUDY IN MALAYSIA

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INTRODUCTION

Differentiated thyroid carcinoma (DTC) is the most common endocrine malignancy, often necessitating radioactive iodine (RAI) ablation post-total thyroidectomy. While RAI offers significant benefits, the optimal dose remains a subject of debate. This study aims to evaluate the effectiveness of low-dose (30 mCi) versus high-dose (100 mCi) RAI protocols in patients with low- and intermediate-risk DTC, assessed through stimulated thyroglobulin (sTg) levels and whole-body iodine scan (WBIS) outcomes.

MATERIALS & METHODS

A retrospective review of patient data from two Malaysian nuclear medicine centers was conducted over five years (2017-2021), with low-dose RAI administered at Hospital USM and high-dose at Hospital Kuala Lumpur. DTC risk stratification followed the American Thyroid Association (ATA) guidelines. Demographic data, DTC histology, sTg levels, and WBIS findings were analyzed. RAI ablation success (remission) was defined as sTg <1 ng/mL and a negative WBIS report.

RESULTS

A total of 227 patients were included: 114 received low-dose RAI (mean age: 42.65 years, 84.2% female, 88.6% papillary, 71.1% low-risk DTC) and 113 received high-dose RAI (mean age: 44.96 years, 84.1% female, 80.5% papillary, 67.3% low-risk DTC) (all $p>0.05$). Although more patients achieved successful ablation with low-dose RAI, the difference was not statistically significant compared to high-dose RAI (64.9% vs. 52.2%; $p=0.052$). Multivariate logistic regression identified intermediate-risk DTC and pre-RAI sTg levels as significant independent predictors of non-remission.

DISCUSSION

Increased RAI doses are associated to higher healthcare costs and patient burden, as well as a greater risk of secondary malignancies. The ATA guidelines advocate for the minimal effective RAI dosage and support low-dose RAI for low- to intermediate-risk patients.

CONCLUSION

In patients with low- and intermediate-risk DTC, a low-dose RAI of 30 mCi is comparably effective to 100 mCi for thyroid remnant ablation.

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UNVEILING THE HIDDEN COST OF CANCER: INSIGHTS INTO TRANSPORTATION AND NUTRITIONAL SUPPLEMENT EXPENSES

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INTRODUCTION

Cancer not only exacts a physical and emotional toll but also imposes a significant financial burden on patients and their families. Despite being frequently overlooked, transportation and nutritional supplement expenses substantially contribute to the out-of-pocket (OOP) burden, particularly for those in lower-income brackets. This study aims to analyse the non-medical expenses incurred by cancer patients, specifically targeting transportation and nutritional supplement expenses.

METHODS

This cross-sectional study was conducted at six cancer referral hospitals between June and October 2022. Data were collected through face-to-face interviews with cancer patients from the lower-income demographic. The information gathered encompassed demographic profiles and OOP non-medical expenses. These hidden costs include transportation (including fuel, tolls, parking and fares), meals, lodging, nutritional supplements, childcare, and alternative treatments. Costs in Ringgit Malaysia were estimated using the average cost (± standard deviation) per patient per year.

RESULTS

This study revealed that among the 430 cancer patients surveyed, with a mean age of 59.8 years, annual OOP expenses on non-medical items were reported at RM3,797.28 (±3,788.04), constituting 29.4% of the annual total OOP costs. Transportation costs, averaging RM1,707.94 (±1,933.74) annually and nutritional supplement costs, averaging RM1,582.12 (±2,862.41) annually, were the most significant contributors. These costs comprised 45.0% and 41.7% of the total annual non-medical costs, respectively. The travel burden was found to be greatest for patients from East Malaysia, with an average travel distance three times that of patients from West Malaysia. Moreover, 57.7% of participants reported incurring expenses for nutritional supplements, with 44.0% indicating that these supplements were not prescribed by their doctors.

DISCUSSION

This study highlights the significant financial burden that non-medical OOP expenses impose on cancer patients. Individuals living farther from the treatment site may experience a higher burden in accessing cancer treatment. Continued efforts should be made to reduce the disparities in accessing care. Nutritional supplements, mainly fortified milk, further increase their cancer-related expenses.

CONCLUSION

These findings suggest a need for financial support policies, improved local healthcare access, and better regulation and guidance on the use of nutritional supplements to alleviate financial strain on lower income cancer patients.

A CASE REPORT OF PARAURETHRAL EWING SARCOMA WITH UNDERLYING LEFT MEDIASTINAL DESMOID FIBROMATOSIS

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INTRODUCTION

Ewing sarcoma, an aggressive tumor, predominantly affects children and young adults. The types of Ewing sarcoma are 'classic' Ewing sarcoma of bone, extra-skeletal Ewing sarcoma, malignant small cell tumor of the chest wall (Askin tumor), and soft tissue-based primitive neuroectodermal tumors.

MATERIALS & METHODS

A 27-year old Malay lady was diagnosed with left mediastinal desmoid fibromatosis for which she underwent left posterolateral thoracotomy and tumour debulking on 28/2/2018 and tumour embolization on 11/10/2018. She had 6 cycles of IV doxorubicin followed by radiotherapy to the lung mass. She presented with difficulty in passing urine in August 2022. She was diagnosed with paraurethral Ewing sarcoma in January 2023 and underwent AEWS 50031 protocol chemotherapy and radiotherapy to the mass with weekly IV cisplatin as she declined surgery. Her PET CT scan 25/4/24 showed no scan evidence of FDG-avid local recurrence, nodal or distant metastasis.

RESULTS

Treatment with AEWS 50031 chemotherapy protocol followed by radiotherapy to the tumour yielded a complete clinical response.

DISCUSSION

Ewing sarcomas involving female genital tract are rare tumors. A multi-modality approach to treatment care would be beneficial.

CONCLUSION

Chemotherapy followed by radiotherapy should be considered an option of treatment.

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ANTHRACYCLINE INDUCED HEART FAILURE – A CASE REPORT

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INTRODUCTION

Breast cancer is the most diagnosed cancer among woman worldwide. It is often treated with multimodality which include chemotherapy, surgery, and radiotherapy. Anthracycline and trastuzumab are common systemic therapies used in treatment of breast cancers. Cardiotoxicities are well known adverse events from these anti-cancer therapies. Here, we illustrated a case of heart failure secondary to doxorubicin.

METHOD

Case report

CASE PRESENTATION

A 54-year-old lady with no comorbid initially presented with painless right breast lump. Triple assessment confirmed the diagnosis of right breast invasive carcinoma (ER 5%, PR negative, HER2 positive (3+)). She underwent upfront surgery and pathological assessment confirmed stage II (pT2N0) right breast invasive carcinoma and left breast DCIS. She was recommended for adjuvant chemotherapy with doxorubicin/cyclophosphamide followed by taxanes, radiotherapy, endocrine therapy, and adjuvant trastuzumab for 1 year. Pre-chemotherapy echocardiography was normal with ejection fraction (EF) of 76.3%. Patient was treated with standard adjuvant chemotherapy with 4 cycles of Doxorubicin-Cyclophosphamide and docetaxel/trastuzumab uneventfully. Her treatment was then followed by adjuvant radiotherapy, endocrine therapy and trastuzumab. Post cycle 5 of trastuzumab, patient complained of shortness of breath. Treatment was halt and investigations were carried out to ascertain the cause of dyspnea. Echocardiography showed EF of 28.4%. Her trastuzumab was hold off and cardiology team was consulted. Cardiology team started her on heart failure medications and monitor her heart with serial echocardiography and pro-bun level. Despite 4 months of optimal medical therapy, ejection fraction never normalised. She was concluded to have anthracycline induced heart failure as there was no complete recovery of EF. Her anti HER2 was permanently discontinued due to poor EF. She remains well since then.

CONCLUSION

This case highlighted the importance of recognising drug induced heart failure. Anthracycline is an uncommon yet important cause of heart failure. Understanding different etiology of heart failure will be crucial in management of cancer patients requiring systemic therapy.

UNDERSTANDING THE SIGNIFICANCE OF COMPLEMENTARY AND ALTERNATIVE MEDICINE FOR BREAST CANCER SURVIVORS

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INTRODUCTION

As conventional treatments dominate cancer care, integrating CAM practices has sparked considerable interest and debate. This research, through literature review and qualitative analysis, illuminates the diverse CAM modalities embraced by breast cancer survivors, exploring their efficacy, motivations, and challenges in achieving holistic well-being. The study examines CAM's pivotal role in augmenting conventional treatments, managing symptoms, and enhancing quality of life, while also investigating the socio-cultural factors influencing CAM adoption and adherence among breast cancer survivors.

MATERIALS & METHODS

Reviewing literature on MEDLINE and CINAHL Plus, keywords ‘breast cancer survivorship’, AND ‘herbal medicine’ OR ‘traditional medicine’ OR ‘complementary medicine’ OR ‘CAM’ were used to yield 202 results. PRISMA method were used to screen the results that resulted in 56 papers valid for this systematic review.

RESULTS

Meditation emerged as the most preferred form of CAM, followed by nutritional support and exercise. Meditation was further categorised into prayers, as practised by Muslims and Christians. Patients improved their diets by reducing sugar and carbohydrate intake while increasing natural protein consumption.

DISCUSSION

Women generally showed good awareness of breast cancer and its screening methods, particularly breast self-examination, though their in-depth knowledge was superficial. CAM was preferred by some due to fear of conventional treatment, offering a less intrusive alternative. CAM practices, transcending specific religions and cultures, include scientifically based methods like nutritional supplements and exercises. The research highlights CAM's significant impact on breast cancer treatment by alleviating patient stress.

CONCLUSION

This study amplifies breast cancer survivors' voices, contributing to the discourse on integrating CAM within mainstream oncology. It advocates for a comprehensive, inclusive cancer care approach, prioritising individual preferences and holistic well-being, while investigating socio-cultural factors influencing CAM adoption, offering insights for healthcare providers and policymakers.

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TREATMENT RELATED POSTERIOR REVERSIBLE ENCEPHALOPATHY SYNDROME IN CANCER PATIENTS

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INTRODUCTION

Posterior reversible encephalopathy syndrome (PRES) usually presents with acute or subacute onset of various neurological symptoms, changes in cognition and consciousness. Diagnosis is based on high clinical suspicion and confirmation with MRI as imaging of choice. Common neuroimaging findings are focal regions of vasogenic oedema, typically in the watershed distribution.

REPORT

Case Report 1

76y.o. lady with metastatic hepatocellular carcinoma was started Lenvatinib in Feb 2024. In view of good tolerance and response, dose of Lenvatinib was slowly increased to 800mg Od. Two weeks later, patient's blood pressure increased to 160/90mmHg. Concurrently she developed unexplained forgetfulness, disorientation of place and time. Symptoms persisted and worsened within few days. PRES is suspected and confirmed with MRI imaging. Lenvatinib was tapered down to 400mg Od with resolution of neurological signs within 48 hours.

Case Report 2

54 y.o. lady, diagnosed metastatic rectosigmoid colon carcinoma, was treated with Oxaliplatin + Capecitabine. 24 hours after cycle 1, she developed severe headache following toilet straining. BP was 220/120mmHg. First CT Brain was normal. However she developed acute onset left sided hemianopia within the next 12hours. An urgent MRI brain revealed left parietal occipital region hemorrhage with edema. Conservative medical management was provided and she was discharged 5 days later with improving clinical symptoms and imaging. 20minutes after completing infusion of cycle 2 oxaliplatin, she developed recurrent severe headache with grade 3 hypertension. An urgent CT brain showed subtle frontal region subarachnoid hemorrhage while MRI brain showed hyperintense signal in frontal region with subtle intra-cortical hemorrhage, previous hemorrhage area was stable. PRES was confirmed and Oxaliplatin permanently discontinued. She recovered with no sequela.

CONCLUSION

PRES related to oxaliplatin is rare with 10 reported cases worldwide. We reported a unique case of PRES which was complicated with intracranial bleed. With new neurological symptoms during cancer treatment, PRES should be suspected and confirmation through MRI. PRES is often reversible with early recognition and removal of causative agent.

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EFFECTIVENESS OF PRE-TREATMENT EDUCATION FOR NEWLY DIAGNOSED CANCER PATIENTS: A RETROSPECTIVE ANALYSIS

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INTRODUCTION

Patients with newly diagnosed cancer experience heightened physical and psychological stressors as they prepare to start treatment. Pre-treatment education provides a structured understanding of their treatment plans, potentially reducing anxiety and improving outcomes. This study aims to assess the effectiveness of pre-treatment education at Cancer Centre.

REPORT

A retrospective analysis study was conducted on a cohort of 163 cancer patients who were scheduled to receive systemic treatment. At the current study setting, a cancer educator will be notified when a patient is about to start treatment and a pre-treatment education is provided based on the oncologist's treatment plan. However, several challenges impacted the effectiveness of this education. These included a shortage of cancer educators, educators without oncology-specific expertise, missed notifications of new cases, lack of follow-up during ongoing treatment, and educators being unaware of changes in treatment plans. The findings suggest that these factors significantly hinder the effectiveness of pre-treatment education. Additionally, many patients had previously received incorrect information, particularly regarding chemotherapy side effects, which affected their willingness to continue treatment. To address these issues, several strategies are recommended: recruiting additional clinical coordinators with oncology experience, forming a dedicated team of cancer educators for continuous case follow-up, and establishing a communication system to ensure timely notifications of new cases and treatment plan changes among oncology nurses and cancer educators.

CONCLUSIONS

Pre-treatment education is crucial for helping cancer patients navigate their treatment journey by providing essential information that can reduce fear and stress. Continuous follow-up with patients is also recommended to maintain ongoing support and care. Implementing these strategies could enhance the effectiveness of pre-treatment education, ultimately improving patient outcomes, increasing their confidence in the treatment process, and ensuring their commitment to completing their prescribed therapies.

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PREVALENCE OF HOMOLOGOUS RECOMBINATION DEFICIENCY IN MALAYSIAN TRIPLE-NEGATIVE BREAST CANCER PATIENTS

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INTRODUCTION

Triple-negative breast cancer (TNBC) is a subtype of breast cancer with limited treatment options and poor prognosis [1]. Homologous Recombination Deficiency (HRD) is a biomarker for DNA repair deficiencies, where patients with HRD tumors have shown increased sensitivity to specific therapies, such as platinum-based chemotherapies and PARP inhibitors [2,3]. Though it presents a potential target for therapy, its prevalence in Malaysian TNBC patients is not well understood.

MATERIALS & METHODS

We used a gene-expression based method to determine the HRD status by analyzing RNA extracted from formalin-fixed, paraffin-embedded (FFPE) tumor samples of TNBC patients. The study included 173 TNBC patients recruited from a hospital-based cohort of breast cancer patients and investigator-initiated clinical trial.

RESULTS

Out of the 173 TNBC samples tested, 62% showed the presence of HRD. This prevalence falls within the range reported in the literature, which suggests that 40-70% of TNBC cases exhibit HRD [4].

DISCUSSION

The finding that 62% of Malaysian TNBC patients exhibit HRD highlights the relevance of HRD as a significant feature in this population. This aligns with global data, indicating that a significant proportion of TNBC patients could benefit from therapies targeting DNA repair mechanisms. The results suggest that routine HRD testing in clinical practice could help personalize treatment strategies, particularly in identifying patients for platinum-based chemotherapies and PARP inhibitors, thus potentially improving prognosis for TNBC patients in Malaysia.

CONCLUSION

This study reveals a significant prevalence of HRD among TNBC patients in Malaysia, suggesting that integrating HRD status assessment into standard care could enhance personalized treatment approaches and improve outcomes for TNBC patients in Malaysia. Identifying patients with HRD may help tailor therapies, particularly with options like platinum-based chemotherapies and PARP inhibitors.

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TRIPLE NEGATIVE INTERNAL MAMMARY LYMPH NODE RECURRENCE IN BRCA MUTANT ER POSITIVE EARLY BREAST CANCER

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INTRODUCTION

Isolated internal mammary lymph node (IMLN) recurrence after primary breast cancer treatment is rare, with incidence rates of 0.2–1.5%[1,2]. As IMLN irradiation has demonstrated improvement in overall survival and the risk of distant recurrence, the National Comprehensive Cancer Network panel recommends using radiation therapy if possible and considering systemic therapy[3]. However, the decision to treat locoregional recurrence is challenging in consideration of the risk of cardiac and pulmonary toxicities due to any prior radiation to the area[4,5]. On the contrary, a study that suggested 59% of the 3-year survival rate favours the surgical treatment of IMN recurrences[6]. There was no standard salvage strategy for IMLN recurrence until now.

REPORT

A 43-year-old premenopausal lady was diagnosed with BRCA1 mutated, ER positive and HER2 negative left invasive breast carcinoma with TNM staging of pT2N1a(2/16)M0 post left modified radical mastectomy and axillary clearance. She completed sequential 5-Fluorouracil, Epirubicin and Cyclophosphamide and Docetaxel adjuvant chemotherapy for 6 cycles, radiotherapy to the left chest wall and supraclavicular fossa 40 Grays in 15 fractions in November 2022, and on-going hormonal therapy, including Letrozole and Goserelin injection. Radiological surveillance in June 2023 revealed isolated left IMLN recurrence. IMLN irradiation is not feasible due to prior radiation and potential cardiac toxicity. Multidisciplinary approach with left IMLN resection, which revealed tumour biology transformation to triple negative, followed by 6 cycles of adjuvant paclitaxel carboplatin chemotherapy. Adjuvant PARP inhibitor is not amenable due to the cost. She is currently 1 year disease-free with close radiological surveillance and scheduled for prophylactic right mastectomy and bilateral salpingo-oophorectomy.

CONCLUSION

ILMN irradiation should be individualized after considering the prior therapy and potential cardio-pulmonary safety interaction with systemic therapy. Multidisciplinary approach of surgery followed by systemic therapy could be the treatment of choice for isolated IMLN recurrence.

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LENVATINIB FOR TREATMENT OF UNRESECTABLE HEPATOCELLULAR CARCINOMA: EXPERIENCE IN A SINGLE INSTITUTION IN MALAYSIA

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INTRODUCTION

Hepatocellular carcinoma (HCC) is the eighth most common cancer in Malaysia and sixth in males[1]. It is the second leading cause of malignancy related mortality globally[2]. Lenvatinib is an oral multikinase inhibitor registered to treat advanced or unresectable HCC[3,4]. We aim to share our institutional experience with Lenvatinib.

MATERIALS & METHODS

A retrospective study was conducted on 12 patients treated with Lenvatinib for advanced HCC from July 2022 to April 2024 in our institution. Baseline demographic data, tumour characteristics, Lenvatinib dosing, and adverse events (AEs) causing interruption or discontinuation were collected.

RESULTS

The patients were predominantly male (75%), with a median age of 62 years. All patients had BCLC stage C with ECOG 0 or 1. 75% (n=9) have extrahepatic metastasis, while 25% (n=3) have multifocal intra-hepatic lesions. The median duration of treatment was 62 days (IQR 43-120.25 days). Treatment initiated doses were 10mg daily (16.7%), 8mg daily (33.3%), 8mg alternate day (16.7%) and 4mg daily (33.3%). Therapy had been permanently ceased in 41.6% (n=5) due to intolerance with a 1.5-month median treatment time (range 0.1-2 months), where 3 patients are Child-Pugh B8 while the other 2 are Child-Pugh A6. The most common adverse events are grade 3 fatigue (33%), grade 3 anorexia (25%), and grade 3 diarrhea (16.7%). 58.3% (n=7) who remained on therapy were Child-Pugh A with a median treatment duration of 3 months (range 1-13 months). 50% (n=6) treatment interruption and 25% (n=3) dose reduction were due to thrombocytopenia, alanine aminotransferase raised, vomiting, diarrhea, hand-foot syndrome, and mucositis.

CONCLUSION

Despite Lenvatinib showing favorable efficacy and safety in multiple trials, more than half of the patients in our center experienced at least one AE that caused an interruption in treatment; 41.6% had discontinuation. Its toxicity remains a challenge for us in terms of management in real-world practice.

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ALK FUSION IN MALAYSIAN NON-SMALL CELL LUNG CANCER : A REAL-WORLD ANALYSIS USING NEXT GENERATION SEQUENCING DATA

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INTRODUCTION

Anaplastic lymphoma kinase (*ALK*) fusion is the second most common driver gene alteration among non-small cell lung cancer (NSCLC) patients. However, the patient and clinical profile of *ALK* fusion positive NSCLC has not been well described in Malaysia. This analysis investigated the prevalence and characteristics of NSCLC patients with *ALK* fusion, who underwent next generation sequencing (NGS) testing.

MATERIALS & METHODS

NGS results of NSCLC samples received between October 2019 and December 2022 at Subang Jaya Medical Centre were evaluated. Descriptive and statistical analyses were performed.

RESULTS

A total of 1373 cases were included in the analysis, of which 85 harboured *ALK* gene alterations; fusions (n=81, 5.9%), single nucleotide variants (SNV) (2, 0.1%), fusion and SNV (1, 0.1%) and amplification (1, 0.1%). The *ALK* fusion partners were *EML4* (n=76), *KIF5B* (1), *HIP1* (1), *STRN* (1), *MYO5C* (1) and *VCL* (1). *EML4::ALK* variants detected were v3a/b (n=34), v1 (27), v2 (11) and v5 (1). *TP53* was the most common co-mutation for *ALK* fusion tumours (n=10). Patients with *ALK* fusion were significantly younger (mean age 56.5 vs 63.3 years, $p<0.001$) and tended to be female (64.6% vs 46.3%, $p=0.001$) compared to those without *ALK* alterations. Moreover, there was a difference in the prevalence of *ALK* fusion among the ethnicities ($p=0.006$); Indians (13.2%), Malays (10%), Chinese (4.9%) and others (6%). Patients with *ALK* fusion were also more likely to be never-smokers (85.7% vs 62.1%, $p<0.001$) compared to those without *ALK* alterations.

DISCUSSION

Some studies have shown that the *EML4::ALK* v3a/b variant could potentially lead to poorer ALK tyrosine kinase inhibitor response and survival outcomes. Additionally, *TP53* co-mutation may have an unfavourable effect on these outcomes.

CONCLUSION

Future analysis with follow up data may elucidate the effects of ethnicity and the *EML4::ALK* v3a/b variant on the survival outcomes of Malaysian *ALK* fusion positive NSCLC patients.

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RETROSPECTIVE ANALYSIS OF MOLECULAR PROFILE IN LUNG CANCER PATIENTS: A SINGLE-CENTER STUDY IN A PRIVATE HOSPITAL SETTING

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INTRODUCTION

Lung cancer ranks among the prevalent cancers in Malaysia, constituting around 10% of all malignancies. This study offer insights of molecular characteristics of lung cancer patients in a hospital Malaysia.

OBJECTIVE

To analyze the clinical characteristics of new lung cancer patients and results of lung cancer profiling within a single-center setting.

METHODOLOGY

Data of newly diagnosed lung cancer patients in Beacon Hospital from January 2021 to December 2023, including demographics and molecular profiles were collected manually and analyzed using descriptive statistics.

RESULTS

During the study period, 729 lung cancer patients with the median age of 65 were diagnosed. 57.7% were male and remainder were female. 398 of 729 underwent PDL-1 testing, with 160 of 571 testing PDL-1<1%, 152 of 571 testing PDL-1 between 1% to 49%, and 86 of 571 testing PDL-1>50%. Most patients 582 of 729 underwent lung cancer profiling, with 253 of 582 testing positive for EGFR mutation. Among these, 160 of 253 had EGFR exon 19 deletion or exon 21 L858R mutation and 23 of 253 had EGFR exon 20 insertion. 35 of 582 tested positive for ALK mutation while 15 of 582 had MET mutation with 4 cases of METex14 skipping mutation. 28 of 582 had KRAS mutation with 6 cases of KRAS G12C mutation, 8 of 582 had HER2+ mutation and 4 of 582 had RET mutation. There were 12 of 582 had ROS1 mutation and also 11 of 582 had BRAF mutation with 3 had BRAF V600E mutation.

CONCLUSIONS

In conclusion, analyzing 729 patients from 2021 to 2023 showed a male predominance. More than half of the patients had molecular testing, reveal 75.3% actionable targets which help in guiding treatment options, emphasizing personalized lung cancer care's importance.

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LINAC-BASED SBRT FOR LOCALIZED PROSTATE CANCER PATIENTS: A RETROSPECTIVE, SINGLE CENTRE STUDY

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INTRODUCTION

In recent years, cancer centers worldwide have increasingly adopted stereotactic body radiation therapy (SBRT) as a cutting-edge technique for treating prostate cancer. SBRT delivers higher single-dose fractions, offering advantages such as reduced treatment time and minimized toxicity and late effects for patients. However, the efficacy of SBRT in treating localized prostate cancer remains a compelling research question.

MATERIALS & METHODS

In this retrospective study, only patients who maintained consistent follow-up at our center were selected. Five localized prostate cancer patients with varying Gleason scores (2 low, 2 intermediate, and 1 high risk) who received linear accelerator (LINAC)-based SBRT treatment between 2019 and 2023 were analyzed. These patients were treated using a prescription dose of 36.25 Gy delivered in five fractions. Each fraction was administered within 72 to 96 hours gap as suggested in the Radiation Therapy Oncology Group (RTOG) protocol-0938. All patients were implanted with gold fiducial markers before treatment. After completing treatment, the patients were followed up for an average of 21.8 months, ranging from 6 to 48 months. We analyzed their mean follow-up PSA levels and compared them to the Phoenix definition to assess the risk of biochemical recurrence.

RESULTS

The average pre-treatment prostate-specific antigen (PSA) level across all patients was 11.306 ng/ml, ranging from 2.31 to 16 ng/ml. Remarkably, the mean follow-up PSA level for these five patients was 0.161 ng/ml, ranging from 0.018 to 0.554 ng/ml, which was lower than the biochemical recurrence threshold (PSA nadir + 2 ng/ml).

DISCUSSION

The prescribed dose regimen of 36.25 Gy in five fractions effectively reduces PSA levels to a safe range, thus preventing biochemical recurrence in these patients. The insertion of gold fiducial markers aids in improving the dose distribution precision in planning target volume, providing a superior advantage in treatment planning.

CONCLUSION

In conclusion, the LINAC-based SBRT treatment technique is well-suited for localized prostate cancer patients across low, intermediate, and high-risk categories.

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NURSING OBSERVATION FOR BLADDER AND RECTUM TOXICITY FOR RADICAL PROSTATE RADIOTHERAPY WITHIN THE TREATMENT DAY

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INTRODUCTION

Radical prostate radiotherapy is a common treatment for prostate cancer, but it can result in gastrointestinal and genitourinary toxicity, impacting patient comfort and treatment adherence. Understanding the acute effects of these organ within the treatment day can aid in better patient management and care.

MATERIALS AND METHODS

This observational study was conducted in a Radiotherapy Department of a Private Hospital. A group of 30 patients with dose of 60Gy at 20 fraction Radical Prostate Radiotherapy was monitored between year 2023-2024. Nursing staff recorded symptoms related to bladder and rectum including diarrhoea, constipation, urinary incontinence and urinary urgency at weekly basis or upon patient complaint during the treatment period. Symptoms severity was assessed using a standardized grading scale follow the National Cancer Institute (NCI).

RESULTS

The findings indicate that both bladder and rectum presented G1 constipation and diarrhea at second weeks of treatment. However, symptoms of diarrhea worsen in the fourth week of the treatment, 4 out of 30 patients need treatment to reduce the symptoms. 20% of this group of patient experience G1 urinary incontinence and urinary urgency in week three and worsened in week four. Symptoms were pronounced to Oncologist and treatment such as loperamide to reduce the frequency of diarrhea and anticholigenic to reduce the overactive bladder immediately and shows some reduction during the treatment period.

CONCLUSION

Based on the finding of this study, diarrhea and urinary frequency being the highest group of toxicities. Continue nursing observation and timely management of these symptoms are crucial for improving patient comfort and compliance with the treatment as well as optimize patient outcomes and quality of life.

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GENETIC TESTING IN AN ENDOMETRIAL CANCER PATIENT IDENTIFIES RELATIVES AT RISK OF LYNCH SYNDROME – A CASE STUDY

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BACKGROUND

Approximately 3% of endometrial cancers are attributed to Lynch syndrome. Individuals with Lynch syndrome are at a higher risk of developing a range of cancers, with the risk for colorectal, endometrial, and ovarian cancer being the most significant. Endometrial cancer patients with high-risk features such as young age of diagnosis, family history of Lynch syndrome-associated cancers, and/or mismatch repair deficiency should be referred for genetic counselling.

CASE

A 48 years-old female was diagnosed with Grade 2 endometrial adenocarcinoma, stage 1A. Extra fascial hysterectomy and bilateral salpingo-oophorectomy was performed. Subsequent mismatch repair immunohistochemistry (MMR IHC) demonstrated loss of *MSH2* and *MSH6* expression in the tumour tissue, confirming mismatch repair deficiency. A strong maternal family history of colorectal and pancreatic cancer was also reported. The patient was referred for genetic counselling by her gynaeoncologist due to a suspicion of Lynch syndrome.

DISCUSSION

Genetic testing revealed a germline *MSH2* pathogenic variant, confirming the diagnosis of Lynch syndrome. The patient was subsequently referred to a gastroenterologist for intensive colorectal screening. Good intra-familial communication about genetic test results also facilitated cascade testing among family members, up to third-degree relatives. Specifically, testing for the familial *MSH2* variant was performed in the patient's children, siblings, and maternal relatives. This provided opportunities to systematically identify unaffected carriers, for whom risk management strategies such as regular colonoscopy and risk-reducing hysterectomy and salpingo-oophorectomy were put in place. Conversely, it also alleviated the risk of relatives who do not carry the familial variant.

CONCLUSION

Endometrial cancer patients who fulfill genetic testing criteria should be referred for genetic counselling. Apart from providing clinical utility to the index patient, ascertaining a pathogenic or likely pathogenic variant also helps identify at-risk family members through cascade testing, which subsequently creates an avenue for appropriate risk management.

ASSESSING THE ACCURACY OF CIRCULATING TUMOR DNA FOR EARLY MULTI-CANCER DETECTION IN THE ASIAN POPULATION

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INTRODUCTION

Multi-cancer early detection (MCED) tests, particularly those based on circulating tumor DNA (ctDNA), are emerging as transformative tools in oncology. These tests have the potential to enhance cancer survival rates significantly by enabling earlier and more accurate detection across various cancer stages.

MATERIALS & METHODS

A case-control study was conducted involving 2,352 Asian patients presenting with either benign conditions or cancers at stages I-IV. The study encompassed 11 cancer types. Each participant was screened using a ctDNA-based MCED test, and the results were analyzed to determine the test's sensitivity and specificity across various cancer stages.

RESULTS

The ctDNA-based MCED test demonstrated an average sensitivity of 62.2% for stage I, 74.8% for stage II, 95.6% for stage III, and 98.7% for stage IV cancers. The test also demonstrated high specificity with rates of 95.1% for stage I, 96.2% for stage II, 98.2% for stage III, and 98.8% for stage IV cancers.

CONCLUSION

The high sensitivity and specificity of the ctDNA-based MCED test across all cancer stages highlight its potential as a reliable and accurate method for early cancer detection. The non-invasive nature and the ability of liquid biopsies to provide real-time monitoring of tumor dynamics further enhance their utility in clinical practice. These findings underscore the significant potential of ctDNA-based liquid biopsies in revolutionizing the field of MCED, emphasizing the need for ongoing research and development.

CHARACTERIZING CANCER-SUSCEPTIBILITY GENOMIC VARIANTS IN THE MALAYSIAN POPULATION

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INTRODUCTION

Asian populations are notably underrepresented in genomic research, which is crucial for understanding genetic predispositions to various diseases, including cancer. This study focuses on the analysis of clinically significant cancer-driving genetic variants in the Malaysian population.

MATERIALS & METHODS

Whole genome sequencing was performed on 564 genomes from the Malaysian population. The analysis focused on identifying germline mutations that are pathogenic or likely pathogenic and are known to drive cancer development.

RESULTS

Approximately 2.6% of the sampled population carried at least one pathogenic or likely pathogenic germline mutation associated with increased cancer risk. The most frequently observed cancer-related germline variants were in the APC, ATM, BARD1, BRCA1, BRCA2, BRIP1, CHEK2, ERCC6, MSH6, PALB2, PMS2, RAD51C, RAD51D, and TSC2 genes. The carrier frequency of these cancer-related variants was found to be comparable to that of genes associated with lipid disorders and cardiovascular diseases.

CONCLUSION

This study provides crucial insights into the genetic landscape of cancer susceptibility within the Malaysian population, highlighting the prevalence of significant cancer-related genetic variants. The findings underscore the need for targeted genetic screening and personalized preventive strategies in healthcare, particularly in populations that are currently underrepresented in genomic research. This could enhance the early detection and management of cancer in the Malaysian population, potentially improving patient outcomes.

FALSE ALARM: A FALSE POSITIVE CASE IN BONE SCINTIGRAPHY IN OSTEOSARCOMA

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INTRODUCTION

Osteosarcoma, a primary malignant bone tumor, requires accurate diagnostic and staging to guide treatment and evaluate prognosis. Fluorodeoxyglucose Positron Emission Tomography-Computed Tomography (^{18}F-FDG PET-CT) and bone scintigraphy are two prominent imaging modalities with its own distinct advantages and limitations. We present a false positive case, which shows uptake at the bone scintigraphy but no uptake at the ^{18}F-FDG PET-CT, which was histopathological examination (HPE) proven negative for malignancy.

REPORT

A 14-year-old girl with osteosarcoma of the right tibia with lung metastasis. Baseline pre-operative bone scintigraphy showed primary malignancy at the right tibia with no distant bone metastasis. She proceeded for en-bloc resection of the right distal femur and proximal tibia reconstruction with interlocking nail femur with bilateral thoracotomy and nodulectomy. After completion of chemotherapy, repeated bone scintigraphy showed no evidence of bone metastasis. However, ^{18}F-FDG PET-CT showed suspicious FDG avid uptake at the left sacral ala adjacent to the left sacroiliac joint. She was sent again for bone scintigraphy for evaluation of the left sacral ala lesion. However, a new abnormal osteoblastic activity was noted at the right 6th rib, which was not seen in the ^{18}F-FDG PET-CT. She was proceeded for 6th rib resection. HPE of the right 6th rib shows no tumor involvement and no evidence of malignancy.

CONCLUSION

While both ^{18}F-FDG PET-CT and bone scintigraphy play crucial roles in diagnosing and managing osteosarcoma, ^{18}F-FDG PET-CT offers a more detailed and comprehensive evaluation, particularly for staging and monitoring therapeutic response. Studies showed that ^{18}F-FDG PET-CT showed higher sensitivity and specificity in comparison to bone scintigraphy for diagnosing osseous metastases in pediatric patients with osteosarcoma. Nevertheless, bone scintigraphy continues to be a vital, accessible, and cost-effective modality for assessing bone involvement. Clinical needs, resource availability, and specific patient factors should guide the choice of imaging technique.

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INVASIVE LOBULAR BREAST CANCER WITH METASTASES TO GATROINTESTINAL TRACT AND SKELETAL MUSCLES: A CASE REPORT

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INTRODUCTION

Invasive lobular carcinoma is the second most common histologic form of breast cancer, representing 5% to 15% of all invasive breast cancers. Unlike invasive ductal carcinoma, infiltrating lobular cancer (ILC) has tendency to metastasise to uncommon sites. Here, we report a case of ILC with metastases to gastrointestinal (GI) tract, skeletal muscles and bone.

CASE REPORT

A 38-year-old female was diagnosed with stage 3 invasive lobular breast cancer in 2017, with extensive axillary nodal disease, hormone receptor positive HER2 negative. She underwent left mastectomy and axillary clearance followed by adjuvant chemotherapy, radiotherapy and letrozole plus ovarian suppression. Her Ca15-3 reading increased significantly in 2021. FDG PET/CT showed uptake in the vertebrae and right axillary node. Biopsy from the node did not show malignant cells. However, serial Ca15-3 reading showed significant increment and decision made to treat as recurrent disease. Hormone therapy was switched to exemestane. In 2022, she complained of odynophagia and oesophagogastroduodenoscopy (OGDS) showed narrowing of gastroesophageal junction, with gastritis. Pylorus was normal. Computed tomography (CT) images showed upper and mid thoracic oesophageal dilatation with tapering at the distal segment. She was initially treated as achalasia cardia type 1 based on the barium swallow result. Trial of botulinum toxin injection gave little improvement. Her symptoms improved significantly with docetaxel chemotherapy, together with biochemical and radiological improvement. While on fulvestrant in September 2023, she complained of stiffness of bilateral lower limbs. A repeat CT scan showed extensive intramuscular metastatic deposits in the bilateral psoas, iliacus and bilateral gluteus maximus. Further treatment with gemcitabine and carboplatin followed by fulvestrant and ribociclib combination did not manage to give good control. In March this year, she developed gastric outlet obstruction (GOO). A repeat OGDS showed pyloric stenosis. She eventually succumbed to her disease three weeks after this admission.

CONCLUSION

This case highlights the unique presentation of a patient with metastatic ILC. Clinicians should have a high index of suspicion when dealing with unusual presentations in order for the appropriate treatment to be given.

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THREE-YEARS LUNG CANCER SURVIVAL RATE IN BEACON HOSPITAL, MALAYSIA

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INTRODUCTION

Lung cancer remains one of the leading causes of cancer-related mortality worldwide, presenting a significant healthcare challenge. Understanding the survival rates of lung cancer patients is paramount for guiding treatment strategies and improving patient outcomes. Therefore, this study aims to explore the survival rates of lung cancer patients over three years focusing on a cohort treated at a hospital in Malaysia.

METHODS

The retrospective analysis of lung cancer patients treated in Beacon Hospital that was diagnosed between 1st January 2019 and 31st December 2020. The overall survival rate was measured using Kaplan-Meier analysis and significance between subgroups using the log-rank test.

RESULT

A total of 175 patients were eligible for study inclusion. Most patients (76%) presented with stage IV lung cancer and 56% were aged between 40 and 65 years. Male patients accounted for 60.6% of the total number of patients. By the end of the follow-up period, 49 patients (28%) had deceased, 49 patients (28%) were in active follow-up, 18 patients (10.3%) were discharged for palliative or hospice care, 31 patients (17.7%) were transferred and 28 patients (16%) were lost to follow-up. The overall three-year survival rate for the patients is 64.4% with mean follow-up of 2.2 years. The survival rate did not differ significantly between diagnosis stage and age group. However, female patients (75%) have significantly higher survival rate than male patients (56.6%) with p=0.025.

DISCUSSION AND CONCLUSION

The survival rate of this cohort was relatively higher than the reported national average for lung cancer, which is approximately 35.5% and 11% for 1-year and 5-year rate respectively. The notable three-year survival rate among lung cancer patients in this cohort likely stems from advancements in treatment and comprehensive care. However, the effect of censoring should also be considered. Therefore, further investigation is necessary to uncover factors driving this outcome.

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SEMI QUANTITATIVE ANALYSIS USING MAXIMUM STANDARDIZED UPTAKE VALUE SINGLE-PHOTON EMISSION COMPUTED TOMOGRAPHY/COMPUTED TOMOGRAPHY FOR MONITORING RESPONSE OF THERAPY IN PROSTATE CANCER PATIENTS

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INTRODUCTION

Qualitative interpretation is being used in bone scan in the assessment of treatment response. The aim of this study is to investigate potential role of semi quantitative analysis using SUVmax SPECT in the follow up of prostate cancer patients with bone metastases.

MATERIALS & METHODS

34 patients diagnosed with prostate carcinoma was selected for ^{99m}Tc-MDP SPECT/CT bone scan. The imaging protocol which adhered to our institutional standard guidelines was followed. Semi-quantitative analysis using SUVmax were performed by ROI drawn manually on the SPECT/CT image.

RESULTS

Out of the 122 metastatic bone lesions, a total of 42 lesions were found in 9 patients who had not received treatment prior to bone scan while another 80 lesions were identified in 14 patients who had received therapy before bone scintigraphy. The mean SUVmax of metastastic bone lesions in patient with no treatment was 38.17 ± 26.48 while the value of SUVmax for bone lesions with treatment was lower at 35.83 ± 24.07. SUVmax of the bone lesion in the vertebrae showed significant reduction of more than 50% and correlates with the decline in both serum PSA and ALP from 133.3 ng/ml to 0.1 ng/ml and from 173 U/L to 83 U/L respectively.

DISCUSSION

In this study, out of the 23 patients with spine metastases, 14 patients were given treatment prior to bone scan which includes hormonal, radiotherapy, chemotherapy and immunotherapy. The mechanism of action of each therapy and its effect on bone may vary and thus can give rise to a variation of SUVmax. This study however found no significant difference in SUVmax of metastatic lesions between patients who are with and without treatment for prostate cancer.

CONCLUSION

A significant reduction of SUVmax in the vertebrae lesions were shown after completed treatment with chemotherapy and immunotherapy. Semi-quantitative analysis using SUVmax SPECT/CT holds promise as an objective parameter in measuring response to treatment on bone scan.

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APPLICATION OF SUVmean AND SUVmax IN SPECT/CT OF THE NORMAL SPINE IN BONE SCANS OF BREAST CANCER PATIENTS

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INTRODUCTION

Quantitative bone SPECT/CT proves valuable for disease follow-up and inter-patient comparison. Among bone metastatic malignant lesions, the spine stands out as the most commonly invaded site. However, studies with a substantial sample size focusing on all segments of normal cervical, thoracic, and lumbar vertebrae are rarely documented. This study aimed to perform quantitative measurement based on the standardized uptake value (SUV) of bone scan of breast cancer patients in the normal spine using a single-photon emission tomography (SPECT)/computed tomography (CT) scanner.

MATERIALS & METHODS

This retrospective study was conducted on 28 female patients diagnosed with breast cancer who underwent SPECT-CT bone scans using 99mTc–MDP. The SUV mean (SUVmean) and SUV maximum (SUVmax) values for 338 normal spine at the cervical, thoracic and lumbar levels were calculated based on the patients' body weight (BW), body surface area (BSA), and lean body mass (LBM). Furthermore, the correlation coefficients between the SUVs and age, weight, and height was assessed and a receiver operating characteristic (ROC) curve analysis was then performed to determine the diagnostic accuracy of both SUVs in discerning DJD from normal vertebrae.

RESULTS

The mean±standard deviations of the BW SUVmean and SUVmax was 4.369±1.402 and 7.119±2.386, respectively. Meanwhile, the BSA SUVmean and SUVmax values were 1.212±0.337, and 1.976±0.594, respectively, and the LBM SUVmean and SUVmax values were 3.131±0.875 and 5.104±1.529, rspectively. All SUVs were found to show a very weak, negative correlation and no significant correlation with age. Meanwhile, there was a significant, weak, and positive correlation between the BW SUV mean ($r=0.180$, $p<0.05$) and SUVmax ($r=0.172$, $p<0.05$) with weight. Negative correlation between the BW SUVmean ($r=-0.221$, $p<0.05$) and SUVmax ($r=-0.164$, $p<0.05$) with height. There was a significant, very weak, and negative correlation between the BSA SUV mean ($r=-0.164$, $p<0.05$) and SUVmax ($r=-0.118$, $p<0.05$) with weight. Same to height, there was a significant, weak, and negative correlation between the BSA SUV mean ($r=-0.255$, $p<0.05$) and SUVmax ($r=-0.194$, $p<0.05$). For LBM, SUVmean and SUV max have significant, weak and negative correlation with weight and height. In addition, based on the ROC curve, no optimal cutoff value was found to differentiate DJD from normal spine.

DISCUSSION

From these results, the calculated mean values for the BW SUVmean and SUVmax were found to be higher compared with those of the BSA and LBM.

CONCLUSION

In this study, the SUV of 99mTc-MDP was successfully determined using SPECT/CT. This research provides an approach that could potentially aid in the clinical quantification of radionuclide uptake in normal vertebrae for the management of breast cancer patients.

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A RARE CASE OF NUTM1-REARRANGED PERITONEAL NEOPLASM

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Keywords: NUTM1-rearranged neoplasm, MGA-NUTM1 fusion, spindle cell sarcoma, imatinib

INTRODUCTION

We reported a case of left intra-abdominal mass which histomorphologically diagnosed as poorly differentiated spindle cell malignancy and genetically consistent with NUTM1-rearranged sarcoma. This initial diagnosis was provided by pathologist expert from Vancouver General Hospital using Nanostring exon imbalance sarcoma fusion assay. In addition, The Arriba and STAR Fusion analysis (Next generation sequencing, NGS) by Japan's Atlas Report MasterKey Asia Study detected fusion involving exon 21 of the MGA gene to exon 3 of the NUTM1gene, confirmed this tumour as a novel MGA-NUTM1 fusion sarcoma.

NUTM1-rearranged neoplasm exhibit characteristic of clinically aggressive tumour and limited respond to conventional therapies. Due to its rarity, there is a lack of understanding on effective treatment strategies, particularly in resource-constrained regions.

CASE REPORT

17 years old Malay gentleman presented to hospital with acute abdominal pain for 1 weeks. CT-scan showed a large intraperitoneal mass, largest diameter measuring 21cm with multiple liver metastases. Patient underwent exploratory laparotomy and excision of intraperitoneal tumour. Histopathological examination (HPE) concluded as spindle cell sarcoma of peritoneum, at least intermediate grade. The immunohistochemistry profile show positivity for CD99, GLUT1, H3K27e, p16, BCL2, and CyclinD1. NGS and fusion assay gave the genetic diagnosis of NUTM1-rearranged sarcoma.

Patient was started on palliative chemotherapy using doxorubicin and ifosfamide. Unfortunately, interim CT scan done after 4 cycles of chemotherapy demonstrated disease progression. There was no suitable clinical trial available in Malaysia. Clinician prescribed Imatinib 400mg daily dose to patient. CT-scan showed liver metastases was stable for 1 year and patient experienced grade 1 nausea. Latest CT-scan after 12 months of imatinib showed progression in liver metastases.

CONCLUSION

At present, there are no targeted therapy for metastatic NUTM1-rearranged neoplasms and more specifically for MGA-NUTM1 fusion subtype. We used imatinib after failure of chemotherapy and it helps patient to achieve disease control for 1 year.

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MULTIMODALITY TREATMENT APPROACH IN A PATIENT WITH METASTATIC COLON ADENOCARCINOMA

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INTRODUCTION

Multimodality treatment including systemic therapy, cytoreductive surgery (CRS) and hyperthermic intraperitoneal chemotherapy (HIPEC) is a feasible and effective treatment approach for selected patients with metastatic colorectal cancer. We present a case of a 28-year-old female with Krukenberg tumour from recurrent colon adenocarcinoma.

REPORT

The patient underwent laparoscopic left hemicolectomy and omentectomy in September 2021 for a pT4aN2aM1c splenic flexure adenocarcinoma, with an omental deposit that was surgically excised. Tumour is microsatellite stable, and RAS mutations were not detected. She did not receive systemic therapy post-operatively due to personal reason. Computed tomography (CT) scan in September 2022 showed bilateral solid ovarian masses and a left perinephric collection. There was no mass at the anastomotic site, however biopsy from the site showed adenocarcinoma suggesting a local recurrence as well. CEA and Ca125 were raised. FOLFIRI and cetuximab was given prior to surgery, with good biochemical and radiological response. Pre-operative PET-CT scan showed only a low FDG-avidity at the bilateral adnexal masses. Selective peritonectomy, extrafascial hysterectomy with bilateral salpingo-oophorectomy (EHBSO), left ureterectomy and nephrectomy, plus HIPEC with mitomycin C was performed in September 2023, without complications. Metastatic disease was detected in the right and left ovaries, as well as the left ureter. Post-operatively, the patient received maintenance therapy with capecitabine and cetuximab from October 2023 till now. She remains well and active. Tumour markers have normalised since surgery.

CONCLUSION

In addition to systemic therapy, CRS and HIPEC can be performed in selected patients with metastatic colorectal cancer. Multidisciplinary team discussion and pre-operative work up are crucial. While the aim of multimodality approach is to maximize treatment options, careful selection of cases is essential to achieve the best results in terms of survival outcome and patients' quality of life.

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DABRAFENIB AND TRAMETINIB IN BRAF V600E MUTANT METASTATIC NSCLC

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INTRODUCTION

BRAF mutations have been reported in 1-5% of NSCLC. This mutation results in the activation of the mitogen-activated protein kinase (MAPK) pathway and may promote tumour cell growth and proliferation. Mutant BRAF proteins signal through mitogen-activated extracellular signal regulated kinase 1 and 2 (MEK1 and MEK2), stimulating cell growth. Dabrafenib, a BRAF kinase inhibitor, inhibits the MAPK pathway in BRAF mutated cells, leading to regression and decreased proliferation of the cells. Trametinib, a MEK inhibitor, inhibits growth of BRAF V600E mutant cells.

OBJECTIVE

To describe a case of BRAF V600E mutated metastatic NSCLC treated with Dabrafenib in combination with Trametinib.

CASE REPORT

A 75-year-old lady presented with 2 months history of cough and back pain which caused her to be wheelchair dependent. PET CT revealed a right lung lower lobe mass measuring 3.5x 1.4cm with multiple bone metastasis. Right lung biopsy confirmed the diagnosis of lung adenocarcinoma with BRAF V600E mutation. Baseline cancer markers were elevated, CA 19.9 was 51235 and CEA was 423. Patient received radiotherapy to thoracic and lumbar spine for pain relief. Following radiotherapy, she started on Dabrafenib and Trametinib. PET CT 2 months and 8 months post treatment both showed complete metabolic response to treatment. Cancer markers normalized after 6 months of treatment, CA 19.9 was 24 and CEA was 2.9. Clinically her cough and back pain resolved after 3 months of treatment. ECOG performance status improves from 3 to 0. Treatment is well tolerated with no toxicities reported.

CONCLUSION

Dabrafenib and Trametinib have shown good radiological, clinical, and biochemical responses and a manageable toxicity profile in patients with BRAF V600E mutant metastatic NSCLC.

INCENTIVES FOR CHILDREN RECEIVING RADIOTHERAPY: SHARING OF EXPERIENCE FROM HWKKS

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INTRODUCTION

Treatment with radiotherapy can cause anxiety and distress for paediatric patients and their families. There is often a need for sedation or general anaesthesia for radiotherapy simulation and daily treatment. Radiotherapy centres worldwide have adopted various methods and strategies to alleviate the negative psychological impacts and improve the experience of paediatric patients and their caregivers. However, various obstacles impede the implementation of such strategies. One example is the lack of resources in many centres that primarily treat adult patients and may not prioritize paediatric patient experience, particularly when the paediatric patient volume is low. This is more prominent in low to middle-income countries like Malaysia.

REPORT

We describe our experience in providing radiotherapy services to paediatric patients in Hospital Wanita dan Kanak-Kanak Sabah, which is a regional cancer centre providing both adult and paediatric oncology and radiotherapy services in the state of Sabah in East Malaysia, and our efforts in improving the paediatric experience during radiotherapy. A total of 118 children aged between 22 months to 14 years old underwent radiotherapy at the Radiotherapy and Oncology Department from 2017 to 2023. The most common diagnoses are acute lymphoblastic leukemia (ALL), nasopharyngeal carcinoma (NPC), and central nervous system (CNS) tumours. Strategies used include beam direction shall (BDS) mask acclimation, and tour of the CT simulator and LINAC areas prior to simulation and treatment. All children completing radiotherapy are also given incentives in the form of toys and certificates of completion, as part of our effort to improve the paediatric radiotherapy experience.

CONCLUSION

Incentives are amongst the many strategies that can be used to improve the paediatric experience during radiotherapy. The use of various strategies in the radiotherapy unit aims to alleviate patient and caregiver anxiety, and is a continuous effort to provide and foster a paediatric-friendly environment and overall better paediatric radiotherapy experience.

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NEOADJUVANT PERTUZUMAB AND TRASTUZUMAB IN THE TREATMENT OF HER2 POSITIVE BREAST CANCER IN PUBLIC CANCER CENTER: CHALLENGES AND EXPERIENCES

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INTRODUCTION

Pertuzumab and trastuzumab plus standard neoadjuvant chemotherapy have been shown to improve the pathological complete response (pCR) rate to 46-58% with acceptable toxicities in locally advanced HER2-positive breast cancer[1], which pCR has a better long term outcome[2,3]. However, pertuzumab is not readily available in public hospital as it has not been listed into Ministry of Health Medicines Formulary (MOHMF) yet. We would like to share the challenges and experiences of using neoadjuvant pertuzumab and trastuzumab.

METHODS & MATERIALS

We retrospectively analyzed the results of HER2-positive breast cancer patients treated with neoadjuvant pertuzumab and trastuzumab in combination with chemotherapy from January 2022 to December 2023.

RESULTS

Number of total neoadjuvant chemotherapy patients for HER2+ are twenty-one. Only nine patients had neoadjuvant pertuzumab and trastuzumab with a median age of 56 years. For disease burden, 33% (n=3) was T3, while 56% (n=5) was T4, and 89% (n=8) were nodal positive. 22% (n=2) patients' hormone receptors were positive. All patients had 3 cycles neoadjuvant anthracycline followed by 3 cycles taxane plus pertuzumab and trastuzumab. 89% (n=8) underwent surgery with 89% overall response rate, 22% (n=2) achieved pCR, while 67% (n=6) had partial response of more than 75% reduction in tumor size. One patient progressed during the treatment. The adverse events noted were bone pain (n=2), diarrhea (n=1), and left ventricular systolic dysfunction (n=1) but complete cardiac recovery followed.

DISCUSSION

Challenges faced included baseline ECHO schedule; treatment funding; medication storage and tracking; paperwork, including supporting letters and medication special approval applications etc. Multidisciplinary teamwork and coordination are remarkably important.

CONCLUSION

Neoadjuvant pertuzumab and trastuzumab exhibit remarkable effectiveness and safety, with manageable adverse effects. The drug's accessibility and cost restrict the number of patients who can benefit from this medication. With the hard work of multidisciplinary teams, we can make a change for public patients.

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REBUNG TRAIN-THE-TRAINER COMMUNITY NURSES COMPETENCY PROGRAM IN CANCER SCREENING AND NAVIGATION FOR EARLY DIAGNOSIS OF CANCER

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INTRODUCTION

Malaysia faces the challenge of diagnosing cancer at significantly more advanced stages, resulting in lower survival rates. Addressing this issue requires a crucial cancer-control strategy focused on the early detection of both symptomatic and asymptomatic individuals. In this context, nurses emerge as pivotal figures, capable of enhancing cancer screening uptake and guiding patients through the complex cancer care journey to ensure prompt diagnosis.

REPORT

The REBUNG (Reducing Barriers in Cancer Early Diagnosis In The Urban B40 Group) is an implementation science project that pilots an ecosystem that maps care facilities, enhance cancer health promotion and care pathways for the underserved urban community. Hence, the REBUNG Train-The-Trainer Community Nurses Competency Program for Cancer has been devised to enhance nurses' knowledge and skills, aiming to augment their expertise in cancer risk assessment, symptom recognition, performing clinical breast examination, and assisting in the navigation of cancer care pathways. The program consists of 3 modules: an online Global Breast Educator course in collaboration with the Know Your Lemons Foundation; two weeks of clinical competency attachment in the hospital; and an online leadership and training skill-sharing session.

CONCLUSION

A group of 14 nurses from diverse clinical settings around Petaling Jaya completed the program. They have been entrusted as key individuals to establish a hub with a broader community reach, dedicated to facilitating optimal care pathways for the early diagnosis of cancer. The Train-The-Trainer Community Nurses Competency Program represents an innovative approach to enhancing the competencies of community nurses. By leveraging a peer-based training model, the program fosters a culture of continuous learning, knowledge sharing, and skill development.

A CASE OF PROSTATE GERM CELL TUMOUR: A CASE REPORT

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BACKGROUND

Primary Extragonodal Germ Cell Tumours (EGGCTs) that originate from the prostate are extremely rare and easily misdiagnosed[1].

CASE REPORT

A 37-year-old gentleman presented with acute urinary retention. An ultrasound showed prostatomegaly with thickened bladder wall. His PSA level was 0.9ug/L. Transurethral resection of prostate was done and HPE was reported as prostate adenocarcinoma with neuroendocrine differentiation, Gleason score 4+3(7). PSMA/PET scan revealed no distant metastasis. MRI Prostate showed cT3bN0M0 and he was referred for robotic prostatectomy. Due to a high index of suspicion in view of his age, his histopathological specimen was sent for a second opinion to a histopathologist highly specialized in germ cell tumours. She then reported a mixed germ cell tumour with components of Yolk sac(80%), Teratoma(15%) and Seminoma(5%). AFP was 386ng/mL, BHCG was 0.8mIU/mL, LDH was 152U/L.

Prior to initiation of chemotherapy, a repeat CT scan showed small lung and liver lesions, suggestive of metastasis or infection. He completed a total of 4 cycles of Bleomycin + Etoposide + Cisplatin and CT post chemotherapy showed partial response. AFP was 5.8ng/mL, BHCG was <0.2mIU/mL, LDH was 260U/L.

Radical prostatectomy was done revealing residual mature teratoma.

DISCUSSION

Primary EGGCTs are uncommon, with most originating from the midline of the body. More than 60% are seminomas arising from the mediastinum or retroperitoneum. Mixed EGGCTs of prostate are rare, with only four published cases[2-5].

In this case, we highlight the challenges of making an accurate diagnosis. Initially, the patient was diagnosed as prostate adenocarcinoma, and a relook histology revealed Primary Mixed EGGCTs. Tumour markers were raised, however definite diagnosis was established by histopathological evaluation only. Missing or delaying a diagnosis of EGGCT will delay or inhibit the initiation of systemic therapy which may be a lifesaving treatment.

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CENTRE EXPERIENCES ON THE ABDOMINAL COMPRESSION TECHNIQUE IN SBRT LIVER

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INTRODUCTION

To evaluate the effectiveness of abdominal compression (AC) in liver stereotactic body radiotherapy (SBRT) by examining couch shifts detected through cone-beam computed tomography (CBCT) performed before treatment.

MATERIALS & METHODS

A retrospective analysis was conducted on previous liver SBRT cases treated at Sunway Medical Centre which included 15 patients across 87 fractions. Couch shifts in vertical, longitudinal, and lateral directions during the first time CBCT for each fraction were recorded and analyzed.

RESULTS

The analysis revealed that 61% of the fractions required a vertical couch shift of less than 0.3cm,whereas 40% for longitudinal and 79% for lateral couch shifts. Despite these outcomes, outliers were noted. Planning target volume margin(mPTV) based on the first time CBCT variation are 0.6cm (vertical), 1.1cm (longitudinal) and 0.5cm (lateral). Reposition was required for the value that exceeded 0.5cm.

DISCUSSION

Contributing factors of the results include cooperation of patient, patient conditions, the inherent limitations of the AC technique, the challenges in tumor identification through CBCT and outcome variations in using surface-guided radiation therapy(SGRT) for patient positioning. From the margin results, it showed that increment of margin needed if the first CBCT used for treatment, but there will be overdose to normal liver tissue. Improvements can be made by enhancing patienteducation, improving AC device maintenance, optimizing CBCT imaging protocols and SGRT could improve overall treatment accuracy.

CONCLUSION

It is insufficient with AC setup as indicated by most patients requiring minimal couch shifts, inconsistency position of gel-like liver and the limitation of the AC. Use of AC technique for SBRT required a standard protocol to ensure efficiency in patient positioning and treatment.

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FINAL OVERALL SURVIVAL IN PHASE 3 SPOTLIGHT: ZOLBETUXIMAB + mFOLFOX6 IN CLDN18.2+ HER2− ADVANCED GASTRIC/GASTROESOPHAGEAL JUNCTION ADENOCARCINOMA

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BACKGROUND

SPOTLIGHT showed significant improvements in PFS/OS with first-line (1L) zolbetuximab + mFOLFOX6 vs placebo + mFOLFOX6 in patients with CLDN18.2+, HER2−, locally advanced (LA) unresectable or metastatic gastric/gastroesophageal junction (mG/GEJ) adenocarcinoma. We present the prespecified final OS analysis.

METHODS

Patients were randomized 1:1 to zolbetuximab IV 800 mg/m^2 (C1D1) followed by 600 mg/m^2 (every 3 weeks) + mFOLFOX6 IV (D1, D15, D29) for four 42-day cycles or placebo + mFOLFOX6; patients without PD continued with zolbetuximab or placebo, + folinic acid and 5-FU (investigator's discretion), until PD or discontinuation criteria were met. Primary endpoint was PFS per RECIST v1.1 by IRC. OS was key secondary endpoint; additional secondary endpoints were ORR and safety. Ad hoc analyses examined PFS/OS in per-protocol set (PPS; patients adherent to protocol) and TTP by BOR.

RESULTS
At data cutoff (September 8, 2023), 565 patients were assigned to zolbetuximab (n=283) or placebo (n=282) arms. In zolbetuximab vs placebo arms, median follow up was 18.0 vs 17.9 months (PFS) and 33.3 vs 31.4 months (OS). Median PFS (11.0 vs 8.9 months; HR, 0.73 [95% CI, 0.59–0.91]; *P*=0.0024) and OS (18.2 vs 15.6 months; 0.78 [0.64–0.95]; *P*=0.0075) were significantly longer in zolbetuximab vs placebo arms. Separation of PFS/OS curves occurred earlier in PPS (excluded most early withdrawals) vs ITT population. ORR was similar in zolbetuximab vs placebo arms in ITT (48.1% vs 47.5%) and patients with measurable lesions (61.1% vs 62.4%) – TTP for patients with BOR of CR/PR was numerically longer in zolbetuximab vs placebo arms. Safety/tolerability were maintained (no new findings).

CONCLUSIONS
Zolbetuximab + mFOLFOX6 continued to demonstrate significant improvement in PFS/OS vs placebo + mFOLFOX6, with no new safety signals—supporting zolbetuximab + mFOLFOX6 as a new option for 1L treatment of patients with CLDN18.2+, HER2–, LA unresectable or mG/GEJ adenocarcinoma.

KEYWORDS
zolbetuximab, CLDN18.2, gastric or gastroesophageal junction adenocarcinoma

GHOST CELL ODONTOGENIC CARCINOMA ARISING FROM RECURRENT DENTINOGENIC GHOST CELL TUMOR

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INTRODUCTION

Ghost cell odontogenic carcinoma is defined as a malignant odontogenic epithelial tumor thought to arise from calcifying cystic odontogenic tumor, a dentinogenic ghost cell tumor, or both (1). It is a rare malignancy with incidence of 0.23% of all odontogenic tumors with only about 50 cases documented to date (2)(3). We report a unique case of a ghost cell odontogenic carcinoma of maxilla arising from recurrent dentinogenic ghost cell tumor.

CASE REPORT

A 34 year-old male presented with 3 months history of painless swelling with bleeding over left upper gingival in July 2023. Punch biopsy revealed dentinogenic ghost cell tumour with evidence of malignancy changes. Total resection of tumor was advised but he refused and only agreed for enucleation. He was closely monitored and unfortunately presented 6 months later with swelling over left cheek which grew rapidly. Rebiopsy was done and HPE reported similar finding. CECT Head and Neck revealed recurrence with locally aggressive tumour at the left maxilla with extension into left maxillary sinus. He underwent left total maxillectomy and left supraomohyoid neck dissection. HPE reported as Ghost Cell Odontogenic Carcinoma, Ki-67 proliferative index of 70-80% with lymphovascular invasion. He then received adjuvant radiotherapy to fasciocervical 60 Gy/30#/6 weeks and is currently closely monitored and planned for reconstructive surgery later.

CONCLUSION

Radical surgical resection is the primary modality for dentinogenic ghost cell tumour as 53% reported to have recurrence after enucleation (4,5). Close monitoring is vital due to the potential aggressive malignant transformation. Wide surgical excision with clean margins is the treatment of choice although its combination with adjuvant radiotherapy, with or without chemotherapy, remains controversial in ghost cell odontogenic carcinoma (6). Further additional studies are needed for us to understand the nature as the detailed pathology and treatment remains inconclusive.

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LUNG CANCER IN SARAWAK, MALAYSIA

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INTRODUCTION
Lung cancer is one of the most common cancers in Malaysia, accounting for 10% of all cancers[1]. Lung cancer can be subdivided into non-small cell lung cancer (NSCLC) and small cell lung cancer. Majority of lung cancer in Malaysia were diagnosed at late stage. In this study, we aimed to evaluate the clinical characteristics of patients with lung cancer in Sarawak.

MATERIALS & METHODS
This retrospective study evaluated the data of patients with lung cancer diagnosed between year 2017-2023 in Sarawak. Demographic data, clinical characteristics and pathological features were collected. Analysis was done by SPSS version 22.

RESULTS
582 patients were diagnosed to have lung cancer. It is more common in male (57%) than female (43%). The median age was 65 year (21-91). 225 patients were Chinese, 141 were Iban, 114 were Malay and remaining were of other ethnicities. 50.8% were ex/active smoker, 44.9% were never smokers. Adenocarcinoma (73.1%) was the most common histology followed by squamous cell (10.7%), small cell carcinoma (9.8%) and adenoasquamous carcinoma (1.7%). The stage at diagnosis were as follows: stage I (6.5%), II (4.3%), III (13.4%) and IV (75.7%). Among NSCLC, 65% has oncogene driven NSCLC with EGFR mutation being the most common driver mutations. In term of staging investigation, 96% had CT scan as initial staging investigation and only 27% had PET CT scan done. 22% patients had brain imaging done at diagnosis.

DISCUSSION
Our study provided real world data on lung cancer in Malaysia. Majority was diagnosed at advanced stage, adenocarcinoma in histology and EGFR mutation was present in 65% of patients with NSCLC.

CONCLUSION
In Sarawak, majority of our patients presented with advanced stage at diagnosis. This analysis provides an overview of clinical characteristics of lung cancer patients in Sarawak, Malaysia.

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KEYWORDS
Lung cancer, Sarawak

KNOWLEDGE, ATTITUDE AND PRACTICE OF FOOD SAFETY AMONG CANCER PATIENTS RECEIVING CHEMOTHERAPY AT A TEACHING HOSPITAL

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INTRODUCTION

Cancer patients receiving chemotherapy are at a higher risk of developing foodborne infections due to the suppressed bone marrow. Therefore, it is crucial for them to follow the food safety guidelines while preparing food at home.

MATERIALS & METHODS

This study was a cross-sectional study using a quantitative research method. A convenience sample of 325 cancer patients from Universiti Malaya Medical Centre (UMMC) were recruited to participate in the study. They were asked to complete an online questionnaire which required about 5 to 10 minutes to complete.

RESULTS

The overall findings indicated that the participants had moderate knowledge, positive attitudes and good practice in food safety. They lacked knowledge regarding food storage at the right temperature and the risk of washing raw meat before cooking.

DISCUSSION

Age and gender were found to be associated with knowledge; gender and marital status influenced attitude, whereas age, gender, employment status and food preparation at home affected practice. Pearson's correlation test showed that food safety knowledge, attitude, and practice were correlated to each other.

CONCLUSION

The findings highlight the need to provide additional health education on food safety to reduce the risk of foodborne infections among cancer patients.

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BARRIERS AND CHALLENGES OF MULTIDISCIPLINARY TEAM MEETINGS SCOPING REVIEW – UPDATES ON TRANSLATION OF RESEARCH FINDINGS

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INTRODUCTION

Multidisciplinary Teams (MDTs) are vital to oncology care, providing comprehensive and coordinated care for cancer patients. The advent of precision medicine and cancer genomics has added complexities, emphasising the need for effective multidisciplinary collaboration. Previous scoping review using Arksey and O'Malley's framework identified common barriers such as resource limitations (time and finances), interpersonal issues, lack of clinical information, non-attendance of key personnel, and neglect of patient preferences. New challenges include integrating non-traditional specialties, incorporating clinical trials, and addressing technological gaps. Hence, this study aims to evaluate the translation of scoping review findings within Sarawak General Hospital (SGH).

MATERIALS & METHODS

This is a cross-sectional study evaluating the translation of scoping review findings in MDTs conducted within SGH from October 2023 to May 2024.

RESULTS AND DISCUSSION

SGH hosts seven MDTs, including a recently added monthly neuro-oncology MDT with invited experts from the American Society of Clinical Oncology. Early notification and global expert input have improved participation and mitigated interpersonal challenges and bias in oncology management. In addition, high volume MDTs such as Colorectal and gynaecology MDTs prioritise complex cases and ensure early communication of MDT dates. All team members are expected to attend and actively participate. Teleconferencing and hybrid MDTs facilitate participation from external teams, benefiting patients by saving time and resources through virtual collective decision-making. However, the full potential of next-generation sequencing remains untapped in the public setting, and there is no centralized clinical trials database.

CONCLUSION

This study shows that a modified local approach towards setting up MDTs can be sustainable and that all participants generally benefit from a multidisciplinary approach, in particular, developing professional respect and awareness of other disciplines scope of work. However, the improvement of MDT is an ongoing effort.

COST-EFFECTIVE SAMPLING KIT FOR MICROBIOME RESEARCH IN LOW RESOURCE SETTINGS

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INTRODUCTION

Immune checkpoint inhibitors were approved for treatment of advanced and metastatic head and neck squamous cell carcinoma (HNSCC) post KEYNOTE-48, with improved response rates from 23% to 43% when used with chemotherapy [1, 2]. The reason for non-responsiveness in the remaining 57% of patients remained undetermined. Recent studies suggest the microbiome may be involved [3]. However, commercial sampling kits from the West, touted as the gold standard, make microbiome research prohibitively costly and less accessible to researchers in low resource settings. It is crucial to identify cost-effective alternatives.

MATERIALS & METHODS

We developed a cost-effective kit using nucleic acid preservation buffer and phosphate buffered saline in place of commercial proprietary buffers for collecting stool and oral fluid [4]. The kit was internally validated through DNA quality and microbial diversity using Nanodrop and 16S sequencing respectively. We also evaluated the kit's use by HNSCC patients in an investigator-initiated clinical trial in Malaysia.

RESULTS

Internal validation yielded high quality DNA ($A^{260/280}$ = 1.87 – 1.90). 16S sequencing revealed no bacterial overgrowth across sample types, indicating effective microbiome preservation. For the clinical trial samples, use of the kit yielded 39 stool and 51 oral fluid samples. DNA yield of 38/39 stool and 42/51 oral fluid samples fulfilled minimum requirements for downstream sequencing (≥10ng/µL; $A^{260/280}$ = 1.8 – 2.0). $A^{260/280}$ indicated high DNA purity in both sample types.

DISCUSSION

While reputable commercial kits cost up to 25USD each, our kit is estimated to cost only 2USD and can be prepared from common laboratory chemicals. Our kit fulfills the purpose of commercial kits by yielding high quality DNA of decent concentration, meeting downstream sequencing requirements.

CONCLUSION

We hope that improved sample collection affordability will increase the representation of patients from low resource settings in microbiome research, enabling them to potentially

benefit from future medical advancements leveraging the microbiome to enhance treatment response.

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THE DILEMMA OF A SMALL ROUND CELL TUMOUR

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INTRODUCTION

Desmoplastic small round cell tumour (DSRCT) is an extremely rare, aggressive sarcoma affecting young males in the second or third decade of life. It originates from the serosal surface of the abdominal cavity and often presents as a widespread abdominopelvic mass with nonspecific gastrointestinal symptoms. DSRCT can easily be misdiagnosed due to its similarity to Ewing sarcoma and Wilms' tumour. Previous studies found that cytokeratin, EMA, desmin, vimentin, and WT1 protein are detected in the majority of patients. The EWS-WT1 fusion gene produced by chromosomal translocation of t(11;22)(p13;q12) is diagnostic. Here, we present a case of DSRCT in our centre.

CASE REPORT

A 26-year-old man, presented with altered bowel habits, back pain and difficulty ambulating for two months. CT scan showed large retroperitoneal masses with widespread lymphadenopathies, liver and bone metastases. Left inguinal biopsy performed. HPE shows fibro-collagenous tissue infiltrated by small blue round neoplastic cells with high proliferative index, positive for CD56, desmin, WT1, and EMA, and concluded to favour nephroblastoma. Peritoneal mass and liver biopsy were repeated. The first sample was reviewed together. Immunohistochemical staining shows similar positivity. He was treated as metastatic soft tissue sarcoma and received one cycle of IVA chemotherapy regime. Second opinion by an expert sarcoma pathologist however concluded it as desmoplastic small round cell tumour. The positivity of EWSR1 gene rearrangement supported this. His chemotherapy changed to VDC/IE regime. He has started to respond clinically and ambulate with aid. We will see his radiological response soon.

CONCLUSION

DSCRT has no widely accepted treatment protocol. Current management includes combination of chemotherapy, radiation, aggressive cytoreductive surgery and intra-peritoneal hyperthermic chemotherapy (HIPEC). Despite the multimodal therapy, outcomes remain poor and survival is dismal. Given its rarity, large randomized trials cannot be performed. A better understanding of disease biology has identified potential targets to be explored in future clinical trials.

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GENETIC TESTING AND DECISION-MAKING FOR BREAST CANCER PATIENT DURING PREGNANCY - A CASE STUDY

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INTRODUCTION

This case report explores the decision-making process of a pregnant woman diagnosed with germline triple-negative breast cancer (TNBC) who has a family member with a BRCA1 pathogenic variant. We examine the challenges and complexities in her decision-making for genetic testing and risk management during pregnancy.

REPORT:

The patient, a 36-year-old pregnant woman with TNBC and a family history of early breast cancer (sister diagnosed at 38), was offered predictive testing after her sister was found to carry a BRCA1 pathogenic variant. Her positive test result led to discussions on risk management, including the possibility of mastectomy and bilateral salpingo-oophorectomy (BSO) post-delivery. Consideration was given to nipple-sparing mastectomies and breast reconstruction to facilitate breastfeeding. However, breast reconstruction post-bilateral mastectomy may impact the quality of life, affecting body image and leading to grief, particularly if breastfeeding is not possible. Tailored information is crucial to manage patient expectations and aid in surgical decision-making.

CONCLUSION

This case highlights the necessity for comprehensive discussions with healthcare professionals specializing in breastfeeding and cancer risk management for pregnant women with breast cancer. It underscores the importance of a multidisciplinary approach, considering the patient's medical history, familial cancer risk, autonomy, and potential risk management strategies, to facilitate informed decision-making

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'FROM TERATOMA TO THYROID CARCINOMA'. A CASE OF PRIMARY MALIGNANT STRUMA OVARII

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INTRODUCTION

Struma ovarii (SO) is categorised as monodermal ovarian teratoma, comprising predominantly (>50%) thyroid tissue [(1)]. Struma ovarii is rarely malignant but Malignant Struma Ovarii (MSO) accounts for about 5% of SO and 0.01% of all ovarian tumours with papillary and follicular carcinoma being the most common [(3,4,5)]. We report a case of primary MSO with local dissemination and its management conundrum.

REPORT

62-year-old lady, Para 1 with history of left ovarian cystectomy >30 years ago, presented with progressive abdominal distension. CA125 was elevated at 1453u/ml. CT-Abdomen-Pelvis revealed large solid cystic pelvic mass with papillary projection and internal calcification. She underwent TAHBSO, PLND, omentectomy and appendectomy for suspected ruptured epithelial ovarian tumour. Histopathological examination revealed papillary thyroid carcinoma (PTC) of bilateral ovaries. Following that, total thyroidectomy was performed but it was negative for malignancy. No further treatment initiated. However, just 4-months later, she complained of new abdominal swelling. CT-TAP showed recurrent large left pelvic mass. Patient underwent debulking surgery and intraoperatively noted ruptured tumour with intra-abdominal seedlings. HPE concluded as metastatic PTC. Subsequently, she was referred for radioiodine ablation therapy (RAI). Serum Thyroglobulin was low at 0.18ng/ml but Anti-Thyroglobulin Antibody was positive.

CONCLUSION

Due to the rarity of MSO, diagnostic criteria and subsequent management are not clearly defined. CT finding typically reveals non-specific cystic appearance and features such as mass size, wall thickness and presence of internal structures may suggest presence of MSO [(6)]. Definitive diagnosis is always with histopathogical confirmation. There has been advocate on managing MSO as per other germ cell tumour, but many recommend treatment as per thyroid carcinoma [(7)]. Following an initial surgery; based on the staging, total thyroidectomy is recommended and the patient should subsequently undergo RAI and thyroid hormone suppression therapy [(8)]. Follow-up strategy should include serum thyroglobulin level monitoring with Anti-Thyroglobulin Antibody.

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DILEMMA IN MANAGING SEROUS BORDERLINE OVARIAN TUMOUR WITH DISTANT LYMPH NODE INVOLVEMENT

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INTRODUCTION

Serous borderline ovarian tumour (SBOT) represents the most common subtype of borderline ovarian tumour (BOT) (1). In contrast with ovarian carcinoma, most BOTs have excellent prognosis, younger predilection, and present at an earlier stage (2). However, in a minority of cases, late recurrence with malignant transformation results in poor outcomes. SBOTs commonly have peritoneal implantation and approximately 30% have lymph node involvement (LNI) at diagnosis. The importance of LNI in predicting prognosis is still controversial, leading to a treatment dilemma. We present a case of SBOT with distant LNI.

CASE REPORT

A 23-year-old lady presented with a 2-month history of worsening abdominal distension and constitutional symptoms. Initial scan showed extensive disease involving bilateral ovaries; gross ascites; and multiple enlarged pelvic, para-aortic, inguinal and axillary lymph nodes (LN). Diagnostic laparoscopy revealed cauliflower-like growth arising from bilateral ovaries, widespread peritoneal nodules, and enlarged pelvic and inguinal LNs. Biopsies of the ovaries, peritoneal nodules, and inguinal LNs confirmed typical SBOT with non-invasive implants based on WHO classification. She received 4 cycles of induction chemotherapy demonstrating partial response, and subsequently underwent debulking surgery with axillary node dissection. Despite extensive sampling, there was no evidence of invasion hence confirming SBOT from all samples taken, including the axillary LN. Adjuvant chemotherapy or surveillance strategy was discussed with the patient, who opted for surveillance.

CONCLUSION

Due to the lack of evidence of the benefit of adjuvant treatment, it is not recommended irrespective of the risk factors in clinical setting. Contradictory results from small studies regarding the importance of LNI has led to the dilemma for surgeons and oncologists in tailoring treatments for patients with extensive SBOT. Hence, it is important to inform patients regarding prognostic uncertainties when counselling them for active surveillance. Close monitoring with a better follow-up guideline is essential to detect early recurrence.

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CLINICAL UTILITY AND ADVANTAGES OF LIQUID BIOPSY: CASE STUDIES UNVEILING REVOLUTIONARY DIAGNOSTIC INSIGHTS

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INTRODUCTION

Precision medicine is revolutionising oncology patient care, with liquid biopsy testing at the forefront of this transformation. Unlike tissue biopsies, liquid biopsy—particularly those utilising next-generation sequencing (NGS)—offers a groundbreaking, non-invasive alternative that captures the dynamic landscape of tumour heterogeneity, enables timely selection of targeted therapies, and monitors genetic alterations[1].

Notably, lung cancer accounts for the majority of liquid biopsy cases at 79.6%, with a positivity rate of 57.8% at Oncode from 2022 to date. We present compelling case studies demonstrating the clinical utility and advantages of liquid biopsy.

REPORT

Sensitivity. A lung cancer patient previously identified with only the EGFR L858R variant, liquid biopsy NGS detected the EGFR T790M mutation at 0.1% VAF. Similarly, in a colon cancer patient, liquid biopsy NGS identified KRAS G12V at 0.7% VAF, which was undetectable by PCR. NGS demonstrates superior sensitivity in detecting low-level mutations, enabling early intervention.

Detection Capability. A NSCLC patient underwent chemotherapy and radiotherapy without prior detection of EGFR/BRAF/ALK/ROS1 genetic alterations; subsequent liquid biopsy NGS revealed an EGFR exon 20 insertion, prompting a change to targeted therapy. Additionally, liquid biopsy NGS assays can detect actionable fusions regardless of the partner genes, e.g., ALK rearrangements involving BABAM2 was identified in an NSCLC patient, surpassing the limitations of standard fluorescence in situ hybridisation (FISH) assays at detecting rare or less common fusion partners[2]. Liquid biopsy NGS for another lung cancer patient experiencing treatment failure with EGFR TKIs detected an EGFR T790M mutation in *cis* configuration with C797S, explaining the TKI resistance.

Monitoring & Concordance. A lung adenocarcinoma patient's initial tissue biopsy NGS detected EGFR exon 19 deletion at 48% VAF, thereafter starting gefitinib treatment. Follow-up liquid biopsy NGS detected the same variant at 2.6% VAF, indicating EGFR TKI responsiveness. This high concordance between tissue and liquid biopsy results underscore the utility of liquid biopsy for ongoing monitoring.

CONCLUSION

These case studies underscore the transformative impact of liquid biopsy NGS in oncology. Its sensitivity, detection capability, and monitoring benefits provide practical, cost-effective, and valuable information for optimising treatment strategies.

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UNLOCKING HOPE: NEXT GENERATION SEQUENCING (NGS) A GAME CHANGER IN RARE SUBTYPE THYMIC CELL CARCINOMA

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INTRODUCTION

Thymic carcinomas is a rare mediastinal neoplasm and little is known about its tumorigenesis. Theres no effective treatment except complete resection and the prognosis of the advanced and recurrent cases are poor. Because of their paucity, clinical studies are very limited. NGS has been adopted in clinical oncology to advance personalized treatment of cancer especially to identify novel and rare cancer mutations. NGS has the ability to fully sequence all types of mutations for a large number of genes in a single test at a relatively low cost. This method is effective and ideal for rare tumours like thymic carcinoma to analyse the molecular mechanism of tumorigenesis.

REPORT

A case of 69 years old lady who presented with shortness of breath, reduced oral intake, loss of weight. CT Imaging revealed a large anterior mediastinal mass consistent with a thymic mass. Right Video Assisted Thoracoscopic, incisional biopsy mediastinal mass was performed. Histopathology examination shows tumor arising from thymic with clear cell component. In view of rarity of the disease there was delay before an end diagnosis. A restaging scan prior surgery shows metastatic disease in the liver. Six cycle of palliative chemotherapy was given. This was followed by palliative radiotherapy to the mediastinal mass to relieve the compression symptoms. Subsequently enrolled into Atlas Study. NGS analysis identified CTCCR3::MAML2 fusion hence rare variant of mucoepidermoid carcinoma was confirmed. Therefore the diagnosis amended as a clear cell variant of mucoepidermoid carcinoma trachea/bronchus or thymus.

CONCLUSION

There is no doubt that emergence of NGS constituted a turning point for diagnosis and treatment of rare thymic cell carcinoma. Therefore a recommendation to include NGS testing as a part of diagnostic tool in all the rare tumours for early initiation of treatment should be implemented

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PEMBROLIZUMAB TREATMENT IN MALIGNANT MELANOMA WITH PRE-EXISTING VITILIGO: A CASE REPORT

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INTRODUCTION

Cutaneous melanoma represents the most aggressive form of skin cancer, whereas vitiligo is an autoimmune disorder that results from the destruction of melanocytes which affects about 2% of the world's population.[1,2] Immunotherapy intravenous pembrolizumab is one of the anti-programmed death-1(PD-1) agents commonly used in the treatment of malignant melanoma with vitiligo as one of the most frequent dermatologic adverse events in which the incidence rate ranging between 9.6% to 25%.[3] There are not many cases reported for the management of malignant melanoma with pre-existing vitiligo receiving pembrolizumab.

REPORT

We report the case of a 64-year-old gentleman with pre-existing vitiligo who was diagnosed with metastatic malignant melanoma. He started immunotherapy treatment with intravenous pembrolizumab after progression of disease with two lines of chemotherapy. However, there is risk of worsening skin hypopigmentation with the use of pembrolizumab. Hence, dermatology team was consulted for co-management whereby he was started on topical steroids and given education regarding sun protection. During immunotherapy, there is an increase in skin hypopigmentation at the areas affected which are at the forehead, bilateral foot, and elbow. Despite this, it doesn't affect his quality of life. To date, the patient shows good clinical response to treatment according to the schedule with manageable skin toxicity. Unfortunately, he succumbed to his disease after 8 months of treatment due to progression of disease in the brain.

CONCLUSION

Pembrolizumab is known to have a high incidence rate of skin adverse reactions and may cause a flare of pre-existing vitiligo. With a rational approach and close monitoring, side effects are manageable, and patients can benefit from the treatment while maintaining a good quality of life. Therefore, it is important to educate the patient regarding the risks and benefits of the treatment given as well as the prevention that can be done to avoid worsening toxicity.

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CLINICAL CHARACTERISTICS OF NON-SMALL CELL LUNG CANCER IN SARAWAK, MALAYSIA

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INTRODUCTION

Non-small cell lung cancer (NSCLC) accounts for 80-85% of all lung cancers[1]. It can further subdivide into squamous and non-squamous histology[2]. In this study, we aimed to evaluate the clinical characteristics of patients with NSCLC in Sarawak.

MATERIALS & METHODS

This retrospective study examined data of patients with NSCLC diagnosed between year 2017-2023 in Sarawak. Data on clinical characteristics and pathological features were collected. Analysis was done by SPSS version 22.

RESULTS

Among 581 lung cancers patients, 522 (89.8%) had NSCLC. It is more common in male (53.4%) than female (46.6%). The median age was 65 year (21-91). 45.8% were ex/active smoker, 49.8% were never smokers. Adenocarcinoma (81.4%) is the most common histology followed by squamous cell (11.9%) and adenoasquamous carcinoma (1.7%). The stage at diagnosis were as follows: stage I (6.9%), II (4.2%), III (13.6%) and IV (75.3%). Among all patients, the common comorbid included hypertension (42.7%), dyslipidemia (25.1%), diabetes mellitus (16.5%) and ischemic heart disease (3.6%). Cough (57.9%) is the most common presenting symptoms, followed by weight loss and poor appetite (33.7%), dyspnea (24.9%), and chest pain (8.8%). 11.8% were diagnosed incidentally while working for other causes. Among patients with advanced NSCLC, 91 (23.2%) patients had brain metastasis at presentation and more commonly among patients with oncogene driven compared to non-oncogene driven NSCLC (26% vs 18.4%).

DISCUSSION

Our study provided real world data on NSCLC in Sarawak, Malaysia. Our data largely consistent with previous reported data with adenocarcinoma being most common histology and a quarter had brain metastasis at diagnosis.

CONCLUSION

NSCLC is a heterogenous disease. Majority of our patients presented with advanced stage and significant proportion patients were affected by brain metastasis at presentation. This analysis provides insights into clinical features of our population with NSCLC.

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KEYWORDS

Clinical Characteristics, non-small cell lung cancer

PRIMARY NEUROENDOCRINE LUNG CARCINOMA MANIFESTING AS UNCOMMON ORAL CAVITY LESION - A HARBINGER OF GRAVE PROGNOSIS?: A CASE REPORT

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INTRODUCTION

Metastatic dissemination to oral cavity is unusual, accounting for approximately 1% of all oral malignancy. However, a quarter of cases found oral cavity metastasis discerned as the first manifestation of an occult malignancy at distant site.

REPORT

We report a case of neuroendocrine carcinoma of lung in a 58-year-old Iban gentleman, presenting a two-month history of ulcerated and hemorrhagic mass afflicting the lower gingival as the first sign of his primitive lung malignancy. Clinically, the exophytic gingival lesion mimicked a high-grade carcinoma of oral cavity. He is a heavy smoker with no medical illness. The initial histological evaluation from the gingival mass shows metastatic high-grade carcinoma. Computed tomography staging shows a large solid left upper lung mass measuring 4x5x5 cm. A lung biopsy was performed and revealed combined small cell lung carcinoma (45%) and large cell neuroendocrine carcinoma (55%). Neoplastic cells are positive for Synaptophysin with a high Ki-67 proliferative index of 60%. Both histopathological findings show similar morphology. He had palliative radiotherapy to oral cavity 20Gy/5# over 1 week and ongoing platinum-based doublet chemotherapy. However, he experienced clinical progression evidenced by rapidly and expansive enlargement of oral cavity mass with bilateral cervical lymphadenopathy and impaired nutritional status.

CONCLUSION

Gingival metastasis of a primary lung carcinoma is rare. Unfortunately, the identification of metastatic oral cavity typically signifies widespread disease and indicates a grim overall prognosis.

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CHEMOTHERAPY-INDUCED PNEUMATOSIS INTESTINALIS IN GASTROESOPHAGEAL CANCER

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INTRODUCTION

Pneumatosis intestinalis (PI) indicates the presence of gas within the bowel wall.[1] Oncological therapies are secondary causes of PI, often at tumour sites in the respiratory and gastrointestinal (GI) systems & in palliative settings.[2] Approximately a third of these cases are asymptomatic and discovered incidentally on computed tomography (CT) scans.[2] PI is mainly reported with targeted therapies within the first 12 weeks of treatment rather than with cytotoxic chemotherapy; however, 5-fluorouracil is the most frequently reported cytotoxic chemotherapy agent.[3-5] PI is often localized in the large bowels, typically presenting with mild or absent symptoms, with few fatalities.[1,2] The pathogenesis involves interactions of mucosal integrity, intraluminal pressure, and bacterial flora, though exact pharmacological mechanisms are unclear.[6] We report a series of PI cases in gastroesophageal (GOJ) adenocarcinoma identified incidentally on interim CT scans during chemotherapy.

REPORT

Two patients, with mean age of 62 and no comorbidities were diagnosed with GOJ adenocarcinoma. One, with peritoneal metastasis, received palliative Folinic acid, 5-fluorouracil and Oxaliplatin (FOLFOX) chemotherapy; the other, with stage III, received perioperative 5-fluorouracil, Leucovorin, Oxaliplatin and Docetaxel (FLOT) chemotherapy. Both patients underwent 8-12 weeks of chemotherapy before their interim reassessment CT scans, revealing partial treatment response and incidental PI findings. Intramural gases were seen in the large bowels extending into the pericolic fat, with associated air locules in the portal vein & intraperitoneally. Both patients were asymptomatic and non-neutropenic, hence were managed conservatively without surgery and resumed their chemotherapy. Follow-up CT scans 4 weeks post-chemotherapy revealed uncomplicated resolution of PI in one patient and decreased PI features in the other.

CONCLUSION

Awareness of this rare radiological finding is crucial for timely management, especially in symptomatic patients. Cytotoxic chemotherapy induces GI mucosal damage, which could lead to PI. With advancements in systemic cancer therapy, understanding the mechanisms of PI behind different therapies is essential.

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CLINICAL CHARACTERISTICS AND TREATMENT OF SMALL CELL LUNG CANCER IN SARAWAK

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INTRODUCTION

Approximately 10-15% of lung cancers are due to small cell lung cancer (SCLC), which is associated with extremely poor overall survival with survival rate of 6.9% at 5 years even with best available treatment. In this study, we aimed to describe the clinical characteristics and treatment of SCLC in Sarawak.

MATERIALS & METHODS

This retrospective study examined data of patients with SCLC diagnosed between year 2017-2023 in Sarawak. Data on clinical characteristics and treatment were collected. Analysis was done by SPSS version 22.

RESULTS

Out of 581 lung cancer patients, 57 (9.8%) were due to SCLC. SCLC was more common among male (88%) than female (12%). The median age of our cohort was 63 years (46-82). 15 patients were Chinese, 16 were Iban, 13 were Malay and remaining were of other ethnicities. 98% were active/ex-smoker. The performance status of our patients were as follows : 0 (n=3), 1 (n=21), 2 (n=4), 3 & 4 (n=9). Majority (68.4%) were extensive stage at diagnosis and remaining were limited stage. Cough (22/57, 38.5%) was the most common initial presenting symptoms, followed by weight loss/poor appetite (35.3%) and dyspnea (26.3%). For treatment of limited stage SCLC, 6 patients received definitive chemoradiotherapy, 2 patients received surgery and adjuvant chemotherapy, 1 patient treated with palliative systemic therapy. For extensive stage SCLC, 27 patients received palliative intent systemic therapy, 1 patient received radiotherapy alone, 10 was treated with best supportive care upfront.

DISCUSSION

Our study provided real world data on clinical features of SCLC in Sarawak. Consistent with previous report, majority were smoker and diagnosed at advanced stage.

CONCLUSION

SCLC is an aggressive lung cancer with poor prognosis. More works needs to be done to improve the outcome with better screening and more effective systemic therapy. This analysis provides real world data of SCLC in Sarawak.

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CLINICAL CHARACTERISTICS AND TREATMENT OF ALK POSITIVE LUNG CANCER IN SARAWAK, MALAYSIA

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INTRODUCTION

Anaplastic lymphoma kinase (ALK) rearrangement is an uncommon gene mutation in non-small cell lung cancer (NSCLC)[1]. The prognosis is significantly different compared other molecular subtypes due to highly effective tyrosine kinase inhibitor (TKI). In this study, we aimed to describe the clinical characteristics and treatment of ALK positive NSCLC.

MATERIALS & METHODS

This retrospective study examined data of patients with ALK-positive NSCLC diagnosed between year 2017-2023 in Sarawak. Data on clinical characteristics and treatment were collected. Analysis was done by SPSS version 22.

RESULTS

ALK rearrangements were detected in 30/401 (7.5%) NSCLC patients, being more common in female (56.6%) than male (43.3%). The median age of our patients was 55.5years (34-83). Majorities (60%) were never smokers and 33.3% were active/previous smokers. 90% were stage IV and 10% were stage III at initial presentation. In term of histology, all patients had adenocarcinoma. 93% (28/30) of ALK rearrangement were diagnosed by immunohistochemical stain (IHC) method and remaining by NGS. 33% (10/30) patients had brain metastasis at diagnosis. The first treatment received were as follows: ALK TKI [crizotinib (n=3), ceritinib (n=4), alectinib (n=6, brigatinib (n=1), lorlatinib (n=2)], platinum based chemotherapy (n=10), best supportive care (n=2). 8 patients received ALK TKI in the second line setting [alectinib (n=4), lorlatinib (n=2), ceritinib/crizotinib (n=1 each)]. 9 (30%) patients did not receive ALK TKI in their treatment journey.

DISCUSSION

Our study described real world data on ALK positive NSCLC in Sarawak. The prevalence of ALK rearrangement is slightly higher compared to the previous report. Despite highly effective therapy, 30% of patients did not receive ALK TKI.

CONCLUSION

ALK rearrangement present in a significant amount of NSCLC patients. More works need to be done to improve the access of highly effective ALK TKI to this group of patients.

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KEYWORDS
Treatment, Anaplastic lymphoma kinase, lung cancer

THE SILENT ALARM: FROM BACK PAIN TO LEUKAEMIA

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INTRODUCTION

Low back pain is a common medical condition, usually undifferentiated during initial presentation.

REPORT

A 25-year-old gentleman presented with low back pain after heavy lifting 3 days prior. He was discharged with analgesia and physiotherapy referral as neurological examination was normal. Within the following fortnight, he had 3 hospital visits for similar complaints. MRI thoracolumbar spine showed annular tear of L5/S1 herniated disc, bone marrow signal intensity was normal. During the 4th visit, blood investigations revealed hyperleukocytosis (93.3x10^3/µL) with predominant neutrophils (89.2%). Otherwise, haemoglobin, and platelet counts were normal. Full blood picture sent was suggestive of myeloproliferative leukaemia likely Chronic Myeloid Leukaemia (CML). Patient was urgently referred to Haematology team and definitive diagnosis of Acute Myeloid Leukaemia (AML) with BCR-ABL1 was established. The absence of hepatosplenomegaly further supported the diagnosis in comparison to CML in myeloid blast crisis. Induction chemotherapy started together with Ponatinib. Patient currently still undergoing treatment under the Haematology team.

CONCLUSION

AML is common in males, as in this case.[1] However, there was only symptoms of back pain which could be confused with bone pain in AML complicated with concurrent MRI findings.[2] Only 0.5-3% of AML cases exhibit the BCR-ABL1-positive subtype.[3] Both AML and CML key treatments are chemotherapy and targeted therapy but AML require rapid treatment due to its fast progression and poor prognosis. Despite initial unremarkable findings, persistent back pain warranted further investigation, leading to the diagnosis of AML. This emphasizes the importance of early consideration and detection of haematological malignancies and the need for timely and prompt management.

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EFFICACY OF PERIOPERATIVE FLOT IN GASTRIC CARCINOMA AND GASTRO-OESOPHAGEAL JUNCTION CARCINOMA IN ACHIEVING PCR: RETROSPECTIVE ANALYSIS IN A SINGLE INSTITUTION EXPERIENCE

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INTRODUCTION

Gastric carcinoma (GC) has a high incidence rate of 7% in Asian countries.[1] Perioperative FLOT has been the standard of care for potentially resectable GC and Gastro-oesophageal junction (GOJ) carcinoma.[2] This study aims to evaluate the proportion of patients with pathological complete regression (pCR) in the primary tumor after preoperative chemotherapy.

MATERIALS & METHODS

This retrospective analysis included patients diagnosed with locally advanced, resectable GC or GOJ who received perioperative FLOT at Penang General Hospital between July 2019 and December 2023. Patient data were obtained from departmental records.

RESULTS

Our cohort comprised 43 patients, majority were men (69.8%) with median age of 58 years old (29-75). GOJ carcinoma made up 72% of the cohort. 35 patients (81.4%) completed preoperative FLOT, whereby 30 of them (85%) proceeded with surgical resection. Among the 30 patients who underwent surgical resection, 3 patients (10%) achieved pathological complete response (PCR), 22 patients (73%) achieved margin-free (R0) resection. The median time patients received their first chemotherapy from time of diagnosis was 6 weeks with 15 patients receiving it within 4 to 6
weeks. Postoperatively, 24 patients (55.8%) initiated adjuvant FLOT, but only 17 of them (39.5%) completed total 8 cycles perioperative FLOT. The most common grade 3 and 4 toxicities were diarrhea in 2 (4.6%) of 43 patients, 1 (2.3%) neutropenia, 1 (2.3%) laryngospasm, 1 (2.3%) infection.

DISCUSSION

Our cohort obtained a PCR rate of 10%, which is lower than the 16% reported by FLOT4 trial.[3] This discrepancy could be attributed to variables, such as patients' tolerance to full course preoperative treatment, diagnostic and referral process to initiation of treatment. Diarrhea was our most frequent toxicity (4.6%), while FLOT4 patients had more neutropenia (52%).

CONCLUSION

Our cohort observed a comparable PCR in the primary tumor with preoperative FLOT. We aim for a prospective data collection and analysis in the future.

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USING PARAFFIN WAX BASED IN RADIOTHERAPY TREATMENT USING ELECTRON FOR PATIENT WITH BASAL CELL CARCINOMA AT RIGHT TIPS OF NOSE: A CASE STUDY

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INTRODUCTION

Basal cell carcinoma (BCC) is a common skin cancer affecting the head and neck region. Radiotherapy is a viable treatment option for BCC, offering excellent cosmetic outcomes and functional preservation. However, delivering precise radiation doses to tumors on the nose can be challenging due to the complex anatomy and proximity to critical structures. This case study explores the feasibility and effectiveness of paraffin wax-based radiotherapy treatment with electron beams.

PURPOSE

The aim of this study to evaluate the efficacy of custom-made paraffin wax during electron beam treatment for patient with BCC.

METHODS

This case study enroll a 71-year-old female with BCC at right tips of nose with a dome shaped skin nodule. Patient was simulated using Mark on Set (MOS) method. Patient was treated 33 fractions at 4 cm D_max using 12 MeV electron beam at LINAC (ELEKTA SYNERGY) with head mask. A customized paraffin wax bolus was fabricated to ensure uniform dose distribution and uniform dose delivery during the treatment sessions.

RESULTS & DISCUSSION

The usage of custom-made paraffin wax in radiotherapy treatment shows several advantages such as a more homogenous treatment beam, more accurate immobilization, improved target coverage and better consistencies in treatment delivery.

CONCLUSIONS

This case study highlights a successful of paraffin wax based in radiotherapy treatment for BCC at right tips of nose. The technique demonstrated precise set-up and efficacy dose delivery with minimal side effects and excellent cosmetic results

KEYWORDS

Paraffin Wax, Basal Cell Carcinoma, BCC, Radiotherapy, Electron.

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PRIMARY ADULT EWING'S SARCOMA OF KIDNEY: A RARE ENTITY

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INTRODUCTION

Ewing's sarcoma (ES)/primitive neuroectodermal tumours (PNET) are high-grade small round blue cell tumours often found in children and adolescents and rarely in the adult population.[1,2] The extra-osseous ES represents nearly 6% of the ES family of tumours. However, renal localization is very rare and has a poor prognosis; where there is no consensus concerning the treatment of renal ES, treatment is extrapolated from osseous ES.[3,4] We report a rare case of renal ES and the treatment modality.

REPORT

A 60-year-old man with underlying hypertension was noted to have locally advanced renal mass by imaging when he presented with right flank pain and constitutional symptoms in mid-2022. He underwent right radical nephrectomy in July 2022, with HPE proven to be ES/PNET of the right kidney, positive lymphovascular invasion, histologic grade 3, and involved surgical margin. Immunohistochemistry (IHC) examination showed the tumour cells were strongly positive for CD99, NKX2.2, focal positivity to FL1, Vimentin and Cyclin D1. He was on closed imaging surveillance and only referred to us when the renal bed tumour recurred with liver and lung secondaries in March 2023. Due to poor performances of Eastern Cooperative Oncology Group (ECOG) 3 at progression, he was offered single agent doxorubicin, where he completed 6 cycles in September 2023 and only achieved stable disease but improved ECOG to 1. He progressed again two months later, in November 2023, and was commenced on etoposide-ifosfamide, however he stopped at 5 cycles due to treatment toxicity and the progression of the disease in March 2024.

CONCLUSION

Due to the high invasiveness and poor prognosis of tumors, early diagnosis and intervention are crucial to achieving a promising outcome. Once diagnosed, multidisciplinary approaches and multimodal therapy, including radical nephrectomy, radiotherapy, and systemic chemotherapy, are highly recommended to prolong survival.[5]

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KEYWORDS

Ewing's sarcoma (ES)/primitive neuroectodermal tumours (PNET), Kidney mass

CASE REPORT: KETAMINE USE IN REFRACTORY NEUROPATHIC PAIN OF MALIGNANT PERIPHERAL NERVE SHEATH TUMOUR

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INTRODUCTION

Cancer related neuropathic pain is very challenging to manage despite various treatments. Ketamine at subanesthetic doses shows promise for it, but evidence for parenteral and oral administration is limited. This report details a patient with refractory cancer-related neuropathic pain managed with parental and enteral ketamine adjunct to opioids without adverse effects.

REPORT

A 27-year-old man with a malignant peripheral nerve sheath tumor underwent L4 laminectomy and tumor debulking. He experienced severe 'electric-like' pain in his left foot and ankle, rated 8/10, significantly affecting sleep and mobility. His ECOG status was 2. CT imaging showed a large infiltrative mass at the left lumbosacral area with significant bone destruction of L5 and sacral bone. Initial treatment with oral morphine (60mg/day) and amitriptyline (25mg nocte) provided limited relief despite multiple breakthrough doses.

Methadone was prescribed and titrated to 5mg twice daily, with increased amitriptyline (100mg nocte) and oral morphine (180mg/day). Despite this, pain relief was short-lived, and breakthrough doses only reduced pain to 6-7/10. A psychosocial assessment revealed no additional pain elements. Early signs of opioid toxicity appeared, necessitating a 50% reduction in morphine dosage.

A continuous subcutaneous infusion (CSCI) of burst ketamine 50mg was initiated, titrated to 100mg, which improved pain to 3-4/10 without psychotomimetic effects. However, opioid toxicity worsened, leading to the withholding of methadone, morphine, and ketamine. Once his sedation score improved, oral morphine (120mg/day) was resumed, and oral ketamine (5mg three times daily) was added. His pain improved to 3-4/10, and he could ambulate with a walking aid while awaiting palliative chemotherapy.

CONCLUSION

Parenteral burst ketamine and oral ketamine are effective adjuncts in managing refractory cancer-related neuropathic pain, especially in patients intolerant to opioids and methadone. Further research is necessary to understand the efficacy and safety of ketamine in this context.

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NON-THYROGLOBULIN SECRETING COLUMNAR CELL PAPILLARY THYROID CARCINOMA

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INTRODUCTION

Papillary thyroid carcinoma accounts for 90% of all diagnosed thyroid cancer (1). Although papillary thyroid carcinoma has favourable prognosis given its overall survival rate of 97% at 20 years, poorer outcome is seen in the more aggressive subtypes of thyroid cancer (2). Amongst these subtypes, columnar cell variant of papillary thyroid cancer (CCV-PTC) constitutes for 0.15 to 0.2% of papillary thyroid carcinoma (3). As columnar cell carcinoma is a type of differentiated cancer, it typically produced thyroglobulin, which is a protein biomarker used for post-operative surveillance (4). This case report describes a case of non-thyroglobulin secreting columnar cell variant papillary thyroid carcinoma including the challenges in management and subsequent disease surveillance.

CASE REPORT

We report a case of a 24 years old female with pT3aN1Mx columnar cell variant papillary thyroid cancer. She initially presented with neck swelling and USG neck showed left solitary thyroid nodule. Histopathological examination of the resected thyroid revealed a tumour occupying the whole left lobe measuring 7.0 x 6.0 x 4.5cm. This is composed of closely packed papillary structure with occasional follicular structure lined by neoplastic epithelial cells and these neoplastic cells are largely columnar cells with enlarged hyperchromatic nuclei. The patient is stratified into intermediate risk category and she received radioactive iodine (RAI) remnant ablation with 30 mCi. The post-therapy whole body scan showed focus of uptake at the neck region (Figure 1a). On non-contrasted CT image, there are two lesions seen in the thyroid bed measuring 1.6 x 1.6 x 2.8cm and 3.2 x 2.8 x 3.6cm (Figure 1c). The uptake corresponds to some part of the soft tissue lesion seen in the left thyroid bed hybrid image while the rest of the lesion is non-iodine avid (Figure 1b). The serum thyroglobulin level at this time was <0.1 ng/mL with TSH of >100 mIU/L.

The patient was planned for high dose RAI therapy with 120 mCi in 6 months time however, she had missed the appointment due to the symptoms of myelopathy secondary to tumor compression from spinal metastases. Contrasted CT thorax, abdomen and pelvis showed enlarged left thyroid lobe and isthmus with enlarged left level IV lymph node as well as multiple lytic destructive bone lesions at the sternum, left 4th and 9th ribs, T12, L1, L3 and L5 vertebrae, left iliac bone, left inferior pubic ramus, right pubic bone, left acetabulum and bilateral visualised proximal femur. The lesion at L1 and L5 in particular has soft tissue component extending into the spinal canal causing significant spinal canal stenosis (Figure 2). Tissue biopsy from the lesion at T12 vertebra was taken and came back as malignant tumour cells arranged in papillae with fibrovascular core, lined by pseudostratified columnar shaped

vesicular nuclei with prominent nucleoli. The immunohistochemistry (IHC) are strongly positive for TTF1 but negative for thyroglobulin, CK20, Pax8, CDX2 and SatB2. Although histological features are consistent with papillary thyroid carcinoma, the tumour does not show classical IHC staining pattern given the negative thyroglobulin and Pax8 stain.

DISCUSSION

Columnar cell variant of papillary thyroid carcinoma is identified by the presence of hypercellular neoplasm with thin papillar lined by pseudostratified epithelium (5). Classically, it demonstrates positive staining for TTF1, thyroglobulin, cyclin D1, bcl-2, b-catenin, oestrogen and progesterone expression and in 55% of cases for CDX2 staining (6). In our case, although the TTF1 and CDX2 are positive, the common marker that is thyroglobulin came back negative on IHC.

Thyroglobulin is amongst the most specific biomarker for follicular-derived thyroid carcinomas. It is expressed in the cytoplasm of normal follicular thyroid cells and colloid and commonly present in well-differentiated thyroid carcinomas (7). In a study by Steurer et al. looking at thyroglobulin expression in thyroid tumours, 98.1% of 364 papillary thyroid cancers and 95.2% of 147 follicular thyroid carcinomas showed positive staining for thyroglobulin on IHC (8). Out of 15 tissues that stained negative, 12 showed focal weak thyroglobulin staining on large sections (8). Although in our case, the tissue that went through immunohistochemistry analysis was obtained via transpedicular biopsy of T12 vertebra and the limited volume of sample may be consequential to the negative staining, the patient's low serum thyroglobulin may be reflective in the scarcity of thyroglobulin expression in the tumour itself. Apart from establishing histopathological diagnosis, thyroglobulin is also utilised in post-operative follow-up in differentiated thyroid carcinomas (4). Thus, absence of thyroglobulin expression in thyroid carcinoma may posed a conundrum in surveillance and management of the patient.

CONCLUSION

Columnar cell variant of papillary thyroid carcinoma is an uncommon subtype of papillary thyroid carcinoma which comes with poor prognosis due to its associated with higher risk of recurrence, morbidity and mortality rate. The non-Tg secreting nature of the carcinoma described in this case, attributed to absence of thyroglobulin expression on immunohistochemistry, is also rare and posed complications in directions of management and disease surveillance.

DIBH FOR LIVER STEREOTACTIC BODY RADIATION THERAPY (SBRT)

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INTRODUCTION

Liver cancer most study suggests that minimizing the mobility of internal organs, including the liver and organs-at-risk (OAR), due to the possibility of significant geometric variation. The diaphragm is a reliable surrogate for liver motion, therefore reducing diaphragm motion will result in equivalent motion (1). Liver cancer DIBH Amplitude Gated SBRT reduced target motion by freezing it in the DIBH amplitude-phase, resulting in a lower PTV margin. DIBH amplitude-based SBRT is a reliable and precise motion management approach for SBRT liver (3).

OBJECTIVE

This study assesses the stability motion management system (Active Breathing Coordinator) in DIBH amplitude-based technique for Liver SBRT (Stereotactic Body Radiation Therapy).

MATERIAL/METHODS

The Active Breathing Coordinator System (ABC) was created to assist patients in holding their breath for a short period of time. It requires inserting a plastic tube with a mouthpiece into the patient's mouth and breathing through it, much like a snorkel and a nose clip on the patient's nose. The tube is connected to a computer, allowing the staff and patient to see the breathing pattern of the patient. Since the device measures and regulates respiratory volume, the reproducibility of subject lung volume serves as its primary metric of effectiveness (2). Between July 2023 to February 2023 2 patients with Liver Metastasis received 40Gy/5#/ 1week to the liver. CBCT images was taken pre-treatment, mid treatment and post treatment. To assess the stability motion management system (Active Breathing Coordinator) the vertical (z), longitudinal (y), lateral (x), pitch, roll and rotation shift were analysed.

RESULTS

The mean and standard deviation of the shift for mid-CBCT and post-CBCT for 2 patients across various treatment sessions were recorded. The mean shift and standard deviation mid CBCT for both patient (z: 0.11(SD 0.09), y: 0.09(SD 0.11), x: 0.05(SD 0.07); pitch: 0.13(SD 0.28), roll: 0.20(SD 0.35) & rotation: 0.07(SD 0.19). The mean shift and standard deviation post CBCT for both patient (z: 0.07(SD 0.11), y: 0.02(SD 0.16), x: 0.03(SD 0.07); pitch: 0.08(SD 0.10), roll: 0.10(SD 0.32) & rotation: 0.06(SD 0.19).

DISCUSSION

These results indicate that DIBH significantly reduces mean shifts in liver position (target) from its planned position during treatment delivery, as seen from mid-CBCT to post-CBCT. The standard deviation shows that small variability of these displacement (shift) across different treatment session. Overall, DIBH shows promise in minimizing intra-fractional

motion and enhancing precision in treating SBRT liver cancer. Post-PET CT imaging indicates a positive response to radiotherapy and confirms the effectiveness of DIBH.

CONCLUSION

For appropriately selected patients, a DIBH technique using ABC system is a reliable and safe technique for treating liver SBRT is to reduce the movement of the liver and diaphragm.

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A CASE REPORT OF PRIMARY PULMONARY MYXOID SARCOMA

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INTRODUCTION

Primary Pulmonary Myxoid Sarcoma (PPMS) is an exceptionally rare, low-grade malignant tumor of the lung that poses diagnostic dilemmas due to its rarity and histological similarities with other pulmonary neoplasms. It commonly infiltrates lung tissue and develops within bronchial passages. The published data was largely based on case reports and series which concluded that PPMS was of intermediate malignancy and may originate from mesenchymal cells undergoing fibroblastic or myofibroblastic differentiation. This case report detailed the clinical presentation, radiological and histopathological findings of PPMS in our centre.

CASE DESCRIPTION

A 51-year-old gentleman, who is a chronic smoker with no known comorbidity, presented with right upper back pain for two months duration associated with cough and haemoptysis. Computed tomography of thorax showed multiple cavitating lung lesions with air fluid level at the right upper lobe with surrounding consolidations. The lesion extends medially to transesophageal groove. Additionally, there are enlarged mediastinal nodes and loculated pleural effusion. A bronchoscopy revealed extraluminal compression on the trachea's distal end, and an EBUS revealed a bulging paratracheal mucosal wall that was likely caused by external mass compression. Biopsy sample reported atypical spindled to stellate cells loosely arranged in cords and strands embedded within abundant myxoid material. These cells stained strongly positive for Vimentin and weakly positive for EMA and CAM5.2. Immunohistochemistry stains were negative for S100, Desmin, Synaptophysin, ALK, P40, CD117, CK7, CK20, TTF-1, CD34, SMA and Myogenin. The histopathological results are suggestive of PPMS.

CONCLUSION

PPMS is a rare malignant tumor of the lung. The clinical manifestations of PPMS patients may vary and are relatively non-specific. An adequate tissue sample and histopathology are essential for the diagnosis of PPMS. Multidisciplinary team involvement is crucial in the management of PPMS.

GENDER DIFFERENCES IN HEALTH-RELATED QUALITY OF LIFE AMONG CANCER PATIENTS

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INTRODUCTION

For patients newly diagnosed with cancer, not only treatment but quality of life is also a critical consideration. The impact of gender differences on the health-related quality of life (HRQoL) among cancer patients is complex. This study aims to investigate the influence of gender-specific differences in HRQoL outcomes.

METHODS

Through the Asian Nations Costs in Oncology (ACTION) study, 1655 newly diagnosed cancer patients were included. Health-related quality of life (HRQoL) was assessed using the EORTC QLQ-C30 questionnaire. Psychological distress was measured using the Hospital Anxiety and Depression Scale. Participants' socio-demographics and clinical characteristics were stratified by gender and compared using the chi-square test. The HRQoL mean scores were compared using the independent t-test. All statistical analyses were performed using SPSS software, with p-value< 0.05 considered statistically significant.

RESULTS

Of 1655 patients, 39.0% were male and 61.0% were female. The median age at diagnosis was 53.0 for both genders. The mean score for global health (55.9 vs. 62.1, $p < 0.001$) and role function (59.8 vs 63.4, $p = 0.037$) has negatively affected the males compared to females. Males reported higher symptom scores for pain (35.0 vs. 32.2, $p = 0.047$) and dyspnea (21.0 vs. 14.0, $p < 0.001$). Additionally, males also showed higher rates of anxiety (42.5% vs. 37.5%, $p = 0.042$) and depression (25.8% vs. 19.9%, $p = 0.004$) than females.

DISCUSSION

The present study shows that men report lower health-related quality of life (HRQoL) compared to women, which challenges the commonly held belief that women typically have worse HRQoL outcomes. This study demonstrates that men newly diagnosed with cancer experience lower HRQoL than their female counterparts.

CONCLUSION

The findings of this study suggest that gender plays a role in influencing HRQoL among cancer patients which underscores the necessity for gender-specific interventions in cancer care to address distinct needs and improve the overall quality of life for both male and female cancer patients.

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BUDD-CHIARI SYNDROME AND HEPATOCELLULAR CARCINOMA: A CLINICAL QUANDARY

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INTRODUCTION

Budd-Chiari syndrome (BCS) has been established as an eponym of any obstruction to hepatic venous outflow tract [1]. Interestingly, BCS has been reported to have geographical variation whereby patients in Europe and United States tend to have hepatic vein obstruction as opposed to those from Asian continent and South Africa who predominantly demonstrated IVC obstruction [2]. Although the pathogenesis of hepatocellular carcinoma (HCC) in BCS patients are unclear, it has been postulated that prolonged congestion leads to hepatocellular necrosis and degeneration that causes it be more susceptible to carcinogenesis [3]. Point of oncological interest entails higher risk of developing HCC, younger age of onset and an overall poorer prognosis among patients with BCS with IVC obstruction [4]. In addition to that, HCC patients with background of BCS will inevitably present with features of chronic liver disease , hypercoagulability as well hypersplenism that impose added challenges in clinical management

REPORT

This case report explores the complexity in managing one such patient, Madam M, who was diagnosed with primary BCS complicated with MELD score of 12 since the year 1999 whereby she developed HCC 24 years later despite regular surveillance. Madam M was initially diagnosed with HCC BCLC B, in May 2023 for which she received five cycles of TACE after which her disease progressed and thus was referred to Oncology team. Madam M baseline CPS was 6 with an INR of 1.3 secondary to warfarin and grade 1 thrombocytopenia due to hypersplenism. She was started with Lenvatinib 12mg OD which rendered her to developing Grade 2 thrombocytopenia, Grade 1 Neutropenia and deranged INR. In addition to switching her warfarin to dabigatran, her Lenvatinib dose was adjusted as per recommendation and she was eventually maintained in 8mg EOD dose. Both her BCS and HCC is noted to be stable as evidenced by serial three monthly CT imaging and she was clinically asymptomatic, most importantly her quality of life is at optimum.

CONCLUSION

BCS associated HCC patient often present with complex clinical quandary which requires multidisciplinary approach in managing their condition without compromising their quality of life.

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RARE CASE OF LUNG ADENOCARCINOMA METASTASIZING TO THE COLON

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INTRODUCTION

Primary lung cancer can be attributed to non small-cell lung cancer in approximately 80% of cases. Adenocarcinoma of the lung is the commonest non small cell lung cancer worldwide. Symptomatic colonic metastasis from primary lung carcinoma is rare with 0.1% incidence.

CASE REPORT

We report a case of a 71 years old gentleman with newly diagnosed lung adenocarcinoma. He underwent 31 fractions of radiotherapy and 1 cycle on chemotherapy IV Cisplatin before developing right iliac fossa pain. CT abdomen/pelvis done; reported as enterocolitis with caecal collection,likely abscess with pneumatosis intestinalis which was treated conservatively with intravenous antibiotics. Patient had persistent right iliac fossa discomfort and presented to us after 2 weeks. Physical examination noted right iliac fossa mass measuring 5x8cm. Repeat CECT Abdomen/Pelvis confirms caecal mass likely malignant with right adrenal metastasis. He was subjected to colonoscopy which revealed fungating mass covering the caecum with adherent blood clot. Emergency right hemicolectomy was done in view of persistent drop in hemoglobin suspecting bleeding tumor. Intraoperatively noted caecal and ascending colon mass 20cm x10cm with bleeding caecum. Postoperatively patient had a stormy recovery but was discharged home well. Histopathology reported poorly differentiated carcinoma, immunohistochemistry findings are in keeping with metastatic adenocarcinoma of the lung.

DISCUSSION

Bone,liver,brain, and lymph nodes are the most common sites of lung carcinoma metastasis. In the literature, squamous cell carcinoma had higher prevelance of colonic metastasis than lung adenocarcinoma. Colonoscopy with histopathological examination is the gold standard practice for patients presenting with abdominal symptoms. Metastatic lung cancer adenocarcinoma can be differentiated from primary colonic lesions with immunohistochemistry staining positive for CK7 and negative for CK20 expression. PET CT scan can aid distant occult metastasis.

CONCLUSION

Early detection of colon metastasis can help to alleviate symptoms hence a high index of suspicion, prompt investigations and treatment should be done.

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A RARE CASE REPORT OF URETHRAL SQUAMOUS CELL CARCINOMA WITH BRAIN METASTASIS

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INTRODUCTION

Female urethral carcinoma (UC) is very rare, accounting for <0.1% of all female system malignancies. Based on Malaysia Cancer Registry, the incidence rate in female is <5/63733 between 2012 to 2016. Intracranial metastasis in UC is even more uncommon and was rarely reported in the literature. We present a case of brain metastasis from urethral squamous cell carcinoma encountered in our centre.

REPORT

A 71-year-old lady presented with a perineal mass associated with left inguinal swelling. Clinically the perineal lesion measured 2.5x2.5cm with a depth of 7cm, and the left inguinal lymph node measured 3x3cm. Vaginal and per rectal examination were unremarkable. Cystoscopy revealed papillary like projection at bladder neck with no discernible bladder mass. Tissue biopsy from urethral meatus mass confirmed squamous cell carcinoma. There was no evidence of distant metastasis from staging computed tomography (CT) thorax, abdomen and pelvis. The patient was offered induction chemotherapy cisplatin and 5-FU regime followed by concurrent chemoradiotherapy. She showed good treatment response initially with reduction in size of both primary lesion and lymph node. However, she presented with increased intracranial pressure symptoms during her course of concurrent chemoradiotherapy treatment. Emergency CT brain demonstrated ill-defined left parieto-occipital lesion suggestive of brain metastasis. In view of her declined performance status and advanced age, patient and family had opted for supportive care.

CONCLUSION

Most cases of UC that have been reported to have intracranial metastasis originate from the bladder or upper urinary tract. Given the rarity of primary urethral carcinoma, the incidence of brain metastasis is unknown but it is believed to be an aggressive cancer with a high propensity for both local invasive growth and distant metastases. Even though the condition is uncommon, brain metastasis should be taken into consideration when monitoring UC patients.

EMPOWERING FUTURE RADIATION THERAPISTS: DEVELOPMENT OF A PSYCHOSOCIAL AND SUPPORTIVE CANCER CARE [PSOSC] MODULE FOR MALAYSIAN STUDENTS

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INTRODUCTION

Radiotherapy is a cornerstone in cancer treatment, using high doses of radiation to target and reduce tumors. Despite its effectiveness, patients often face significant physical and emotional challenges that impact their quality of life. This study aims to develop a comprehensive psychosocial and supportive care module [PSOSC] tailored for radiation therapy students in Malaysia, addressing these challenges and improving patient well-being.

MATERIALS & METHODS

The module development process involved a scientific approach, including a thorough literature review of reputable sources to identify existing modules, guidelines, and recommendations for psychosocial and supportive care in cancer treatment. This review highlighted gaps and areas for improvement in the current practices of radiation therapists in Malaysia. Based on these findings, a panel of experts, including radiation therapists, oncologists, psychologists, and social workers, provided feedback on the module's content and structure to ensure its relevance and effectiveness. The module was then pilot tested among radiation therapy students to assess its feasibility and acceptability. The study was divided into two phases: module development and module evaluation through an online survey questionnaire distributed to radiotherapy students at Universiti Kebangsaan Malaysia (UKM).

RESULTS

The developed [PSOSC] module for radiation therapy students is both valid and reliable. It effectively addresses the psychosocial and supportive needs of cancer patients in Malaysia.

DISCUSSION

The development and implementation of this module underscore the importance of integrating psychosocial support into the training of radiation therapists. Future studies should explore the long-term impact of such training on patient outcomes and expand the module's applicability to other regions. This initiative not only enhances the educational experience of radiation therapy students but also contributes to the overall improvement of cancer care in Malaysia.

CONCLUSION

The systematic implementation of the [PSOSC] module for radiation therapy students in Malaysia lays the groundwork for future developments in comprehensive and patient-centered care delivery, enhancing the quality of life and well-being of cancer patients throughout their treatment course. This evidence-based and standardized training module equips radiation therapy students with the necessary knowledge, skills, and attitudes to deliver holistic care to cancer patients undergoing radiation therapy. By integrating scientific approaches and expert input, the module effectively addresses the psychosocial and supportive needs of cancer patients.

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ASSOCIATION OF DELTA RADIOMICS OF PAROTID GLANDS FROM CONE BEAM COMPUTED TOMOGRAPHY TO LATE XEROSTOMIA FOLLOWING HEAD AND NECK RADIOTHERAPY

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INTRODUCTION

Radiotherapy given to head and neck cancer patients often involves normal tissue which may result in late xerostomia. This study aims to investigate the ability of radiomics features derived from cone beam computed tomography (CBCT) imaging to predict late xerostomia based on CBCT images.

MATERIALS & METHODS

Planning CT and CBCT images at four weeks of head and neck patients treated with VMAT radiotherapy were extracted. Both parotid glands were segmented and radiomics features were extracted. Spearman's correlation was used for feature reduction. A multivariate logistic regression with forward stepwise selection was then performed to find the association of delta radiomics and clinical factors with the incidence of late xerostomia at 6-months and 12-months post radiotherapy.

RESULTS

The radiomics features from week 4 of radiotherapy were associated in detecting the late xerostomia characteristics of the patients during radiotherapy. At the outcome of 6 months, radiomics features area under curve intensity histogram (IH), and high grey level run length matrix (GLRLM) were found to be predictive of outcomes (all $p<0.05$). Among the clinical factors, the mean dose (D_{mean}) of the right parotid gland has shown a significant association with $p<0.05$. The model shows good performance with AUC of 0.704.

CONCLUSION

CT and CBCT radiomics features in planning and during treatment may predict xerostomia following radiotherapy. Future studies will focus on improving the modeling step with external validation.

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HDR INTERSTITIAL BRACHYTHERAPY AND CHEMORADIATION IN TREATING BUCCAL MUCOSA SQUAMOUS CELL CARCINOMA- A CASE REPORT

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INTRODUCTION

The aggressive nature of buccal mucosal squamous cell carcinoma (SCC) is seen in its quick growth, good penetration, and high recurrence rate. When tumours from the buccal mucosa spread to nearby anatomical structures, surgical tumour removal becomes more difficult. This means that particular reconstruction considerations related to the amount of resection must be made. Surgery is the recommended therapy, with radiation and chemotherapy also having important roles depending on the stage of the disease. In this report, we present the brachytherapy and chemoradiation approach in treating buccal mucosa SCC.

REPORT

70 year old lady with a history of betel nut chewing for 20 years was diagnosed with left buccal mucosa SCC. She presented with non-healing ulcer over left buccal region for 3 months which was associated with pain, dysphagia and loss of appetite. Upon examination there was a fungating erythematous ulcer with raised border at left buccal mucosa, extending from left oral commisures to lower gingiva nearing ginngivo buccal sulcus. Biopsy was done which reported to be well differentiated squamous cell carcinoma and later proceeded with CT-imaging which reported local lesion with suspicious lung metastases. PET- scan ruled out distant metastases, and the cancer was staged as T4aN0M0. Patient refused surgery and thus offered for brachytherapy and followed with concurrent chemo-radiotherapy. She completed 5 fractions of HDR interstitial brachytherapy, 35 fractions of EBRT and 6 cycles of chemotherapy. 3 months post treatment completion, CT imaging showed complete response. 1 year post treatment, patient is generally doing well, ADL independent, able to tolerate soft diet.

CONCLUSION

Oral mucosa interstitial brachytherapy followed by chemoraradiation may be an alternative to treat oral cancer in the case of surgery refusal patient. High-dose rate brachytherapy offers a great deal of promise for treating oral cancers.[1] Furthermore, it may be used either as a primary treatment modality or as a boost in buccal mucosal cancers provides results comparable to that of surgery, with the advantages of organ preservation, better cosmetic and functional outcomes.[2]

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EXAMINING MARITAL CHALLENGES: A QUALITATIVE STUDY ON THE IMPACT OF CERVICAL CANCER ON INTIMATE PARTNERSHIPS IN SARAWAK

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INTRODUCTION

Cervical cancer has a significant impact on intimate relationships, particularly in culturally rich and diverse regions like Sarawak. This qualitative study explores the marital strains encountered by women diagnosed with cervical cancer, emphasizing the dynamics within their intimate relationships.

MATERIALS & METHODS

In-depth interviews with eleven respondents revealed a concerning trend: five participants reported being left, divorced, or abandoned by their husbands due to their inability to meet sexual needs. This abandonment highlights the crucial role of sexual relationships in marital stability, with the affected women perceiving the cervix as their essential "crown", surpassing traditional symbols such as hair as a woman's crowning glory.

The study underscores the intricate interplay between cultural expectations and personal health crises, illustrating how cervical cancer poses challenges to conventional gender roles and marital expectations. The narratives of the participants expose a complex array of emotional, physical, and sexual difficulties contributing to marital dissolution. The finding that a woman's sexual health, symbolized by the cervix, is regarded as more significant and other traditionally valued attributes call for a reassessment of support mechanisms for these couples.

RESULTS

Based on these findings, the researcher recommends that medical practitioners integrate sexual therapy into the treatment plan for both the patient and her spouse before initiating cervical cancer treatment. This intervention could potentially alleviate the sexual dissatisfaction that seems to be a primary cause of marital breakdown. Additionally, the introduction of intimate products designed to enhance comfort and pleasure for both partners should be considered to foster a more supportive and understanding environment within marriages affected by cervical cancer.

CONCLUSION

In conclusion, this study advocates for a holistic approach to cervical cancer treatment - one that addresses not just the physical ailment but also the emotional and relational dimensions of the disease. Such an approach may improve marital outcomes and the overall quality of life for women undergoing treatment for cervical cancer in Sarawak.

KEYWORDS

Cervical cancer, marital strain, intimate relationships, sexual therapy, Sarawak.

GOING THE DISTANCE: A CASE STUDY OF LOCAL ABLATIVE THERAPY IN OLIGOMETASTATIC EGFR MUTATED NON SMALL CELL LUNG CANCER (NSCLC)

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INTRODUCTION

The landmark FLAURA trial shows significantly longer median progression-free survival (PFS)[1] and overall survival (OS)[2] with the third generation TKI osimertinib. Osimertinib is now the preferred first line treatment in EGFRm NSCLC.[3] In particular, the exon 21 L858R point mutation has inferior outcome as compared to the exon 19 deletion mutation.[4]. Several phase II trials have looked into local ablative therapy in the treatment of oligometastatic disease.[5] Amongst them is the SABR-COMET trial which had shown significantly higher median OS compared to those who received standard of care therapy.[6]

REPORT

Patient MK is a 63 years old lady with a diagnosis of right lung adenocarcinoma with synchronous metastases to brain and right ilium cT4N2M1c. Her cancer mutation harbours both EGFR exon 20 and exon 21 mutations and she was started on first line osimertinib in June 2022. Following a remarkable response to osimertinib, she received radiotherapy to all tumor sites in October 2022. The following year she developed pneumonitis which resolved with prednisolone. Her latest PET CT in April 2024 shows improving right upper lobe lung mass with resolved bilateral pneumonitis and MRI brain in March 2024 shows stable brain lesion.

CONCLUSION

Now at 24 months mark, she remains stable on osimertinib, surpassing the expected median PFS and the expectation that she would do less well due to the exon 21 L858R point mutation.

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Local ablative therapy in oligometastatic disease is safe and potentially prolongs survival in selected patients.

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SELECTION OF PATIENTS FOR LU-177 THERAPY

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INTRODUCTION

Lutetium-177 (Lu-177) therapy represents a promising advancement in the treatment for metastatic castrate-resistant prostate cancer. It provides a targeted approach to delivering radiation directly to tumor cells while minimizing damage to healthy tissues.

REPORT

A 73 year old gentleman was diagnosed with localized adenocarcinoma of prostate with iPSA of 7.2. He underwent Robot-Assisted Radical Prostatectomy which revealed poorly-differentiated adenocarcinoma, GS 9 (5+4) of the prostate with bilateral seminal vesicles invasion and positive excision margin (pT3b) with 9/11 lymph nodes positive. His PSMA PET scan showed bone metastasis at T12, L1 and L2 vertebral bodies with no other distant metastasis. He was started on ADT which further dropped his PSA to 0.105. A year later, his PSA began to rise, CT restaging showed local recurrence at prostatic bed with worsening bone metastasis. Serum testosterone was 0.5nmol/L which was castrate level. He was then given 6 cycles of Docetaxcel and IV Zometa, which he failed to respond to. He was then started on Tablet Abiraterone with prednisolone. After 1 year, he had biochemical and radiological progression, which revealed discordant disease in the liver (FDG avid, PSMA non-avid) and worsening PSMA avid bone metastasis. This patient was planned for Lu-177 therapy however progressed with symptomatic brain metastasis and was deemed unsuitable for the therapy.

CONCLUSION

Lu-177 therapy requires high expression of PSMA receptors, and several prognostic factors play a role in its use. Prior taxane chemotherapy (either one or two lines) are prognostic for worse survival outcomes with reported median OS for taxane-pretreated patients to be 10.7 months, compared with 27.1 months in the taxane-naïve group ($p \leqslant 0.001$)[1]. Distribution of disease is also informative, with hepatic metastases correlating with worse OS regardless of the degree of PSMA expression seen on PET/CT[2]. Additionally, patients with an SUV mean of $\geqslant$10 on PSMA PET/CT scan were more likely to achieve a $\geqslant$ 50% PSA response (OR 12.19 versus 2.22, $p = 0.039$).[3]

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OCCURRENCE OF UNUSUAL SITES OF METASTASES IN DIFFERENTIATED THYROID CARCINOMA DETECTED ON I-124 PET-CT. A REVIEW OF 15 CASES IN INSTITUT KANSER NEGARA

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INTRODUCTION

Differentiated thyroid carcinoma (DTC) which consist of Papillary or Follicular Thyroid Carcinoma is an uncommon cancer among Malaysian with higher incidence recorded in female, whereby it is the 7th most common cancer with age incident rate of 3.2. DTC has excellent 5-year survival of 99% (localized), 98% (regional), and >50% (distant metastasis). The common sites of metastases are lung and bone. However, presence of rare metastatic sites such as brain, kidney, adrenal and pituitary carry poorer prognosis. Thyroidectomy followed-by radioiodine therapy (RAI) are the standard modes of treatment and the ensuing post-therapy whole-body scan (WBS) are essential in staging and surveillance of DTC. The advancement of radiopharmaceutical and imaging technique technology has led to the utilization of I-124 PET-CT which has revolutionized the management of DTC particularly in detecting previously unseen lesions.

REPORT

Here, we report the occurrence of unusual sites of metastases from DTC upon review of 15 metastatic DTC cases which underwent I-124 PET-CT. 11-female and 4-male patients with mean age of 47.2-year-old (range 22-78), stage II or IV and of ATA high risk category had total thyroidectomy followed by varying courses of RAI (range 1-6 courses) via empirical or dosimetry-guided dosing with mean total cumulative dose of (847.3mCi, range 300-2000). Interestingly, due to higher resolution and sensitivity of I-124 PET-CT, numerous rare metastatic sites were identified namely renal(3), skeletal muscles(3), brain(2), adrenal(1), breast(1), pituitary(1), heart(1), and sphenoid sinus(1) in addition to the usual lung and bone metastases. Some of these patients underwent definite therapies such as surgery and radiotherapy to the aforementioned sites.

CONCLUSION

These cases highlight the drawback of conventional imaging and WBS which often unable to identify these metastases. I-124 PET-CT has shown to be a superior imaging modality in metastatic DTC and invaluable to RAI through its greater detection and dosimetry capabilities.

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LYNCH SYNDROME ASSOCIATED COLORECTAL CANCER: AN INVISIBLE PREDATOR

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INTRODUCTION

Lynch Syndrome (LS) is an autosomal dominant disorder that results from germline mutations in DNA mismatch repair genes [1]. This syndrome confers upto 80% lifetime risk of developing colorectal cancer, 60% lifetime risk of developing endometrial cancer and significantly increased risk of developing other primary cancers including gastric, ovarian, brain and pancreas [2]. As far as colon cancers are concern, LS, also known as Hereditary Non-Polyposis Syndrome commonly presents insidiously among younger age groups of patients with either colonic or extracolonic tumours [3]. Although, Rotterdam Criteria and Modified Bethesda Classification serve as general guideline in identifying high-risk populations to be screened for LS, it is crucial to note that the majority of patients with LS may not fulfill these criteria to begin with [4].

REPORT

This case reports explores a case of an 30 years old Indian patient who was initially diagnosed with stage 2 poorly differentiated mucinous adenocarcinoma of hepatic flexure of colon. Unfortunately, he developed recurrence with abdominal mass within two months post resection of primary tumour while undergoing adjuvant chemotherapy. Despite resection of the tumour followed by second line of chemotherapy, his disease continues to progress. The aggressive nature of his disease warranted genomic testing which revealed lynch syndrome. However, it is important to note that patient did not display any classical features that raise clinical suspicion of LS other than his age onset and tumour profiling. His treatment regimen underwent multiple modification as per clinical response whereby currently he is receiving triplet chemotherapy along with immunotherapy which shows stable disease in the last 10 months.

CONCLUSION

LS confers significant clinical implications in both prevalence and prognostication of colon cancers. Given the nature of LS that is rather non-specific, a high clinical suspicion is warranted in identifying these groups of patients.

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