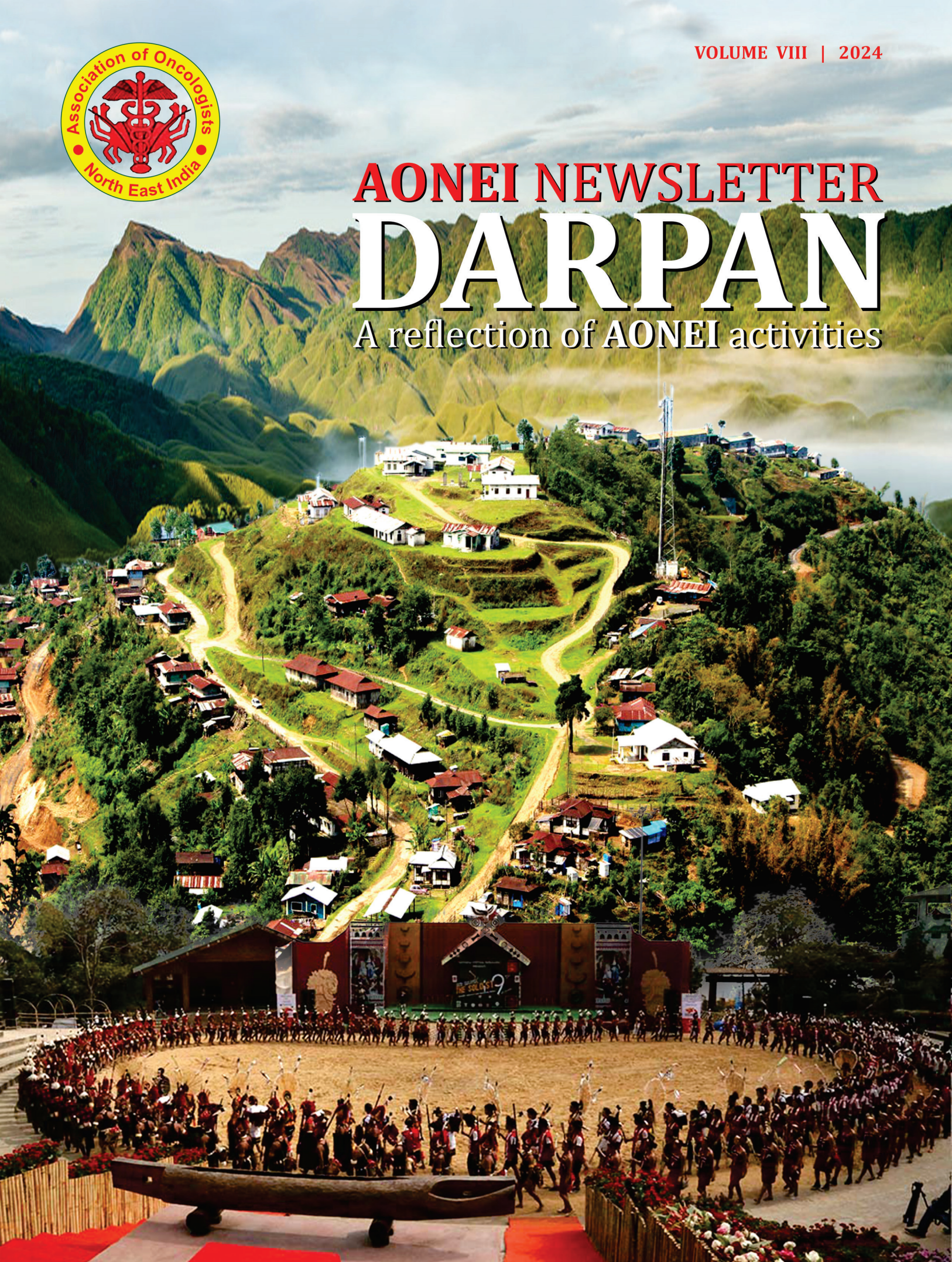
VOLUME VIII | 2024

Association of Oncologists North East India

AONEI NEWSLETTER

DARPAN

A reflection of AONEI activities



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VOLUME VIII | 2024

editor : **Dr Gaurav Das** *dtp & design* **: Surachandra Phuritsabam**

Dr. Gaurav Das
Editor
DARPAN
A Reflection of AONEI Activities

Editorial

North-East has the dubious distinction of being the 'cancer capital' of the nation but at the same time, to tackle the menace, there is an ever-increasing workforce of dedicated oncology specialists and personnel of allied services working in the region. **The Association of Oncologists of North-East India (AONEI)** is nearly the ideal organization which gives ample space and opportunities for all of them to exchange ideas, formulate plans and add direction to the discourse of oncology services in this part of the country, which has been kind of secluded from the mainland for various geopolitical reasons. Darpan – A Reflection of AONEI activities is a canvas which portrays the aforementioned exercise. The current issue of this newsletter has, in addition to the activity reports, numerous scientific articles written by experienced oncologists as well as students pursuing specialist courses in oncology. Their insights will definitely engage the readers into a stimulated discussion on each subject matter. Most certainly, the 19th Annual Conference of AONEI at Kohima in February 2024, will add stimulus to further inspired articles in the next issue. Long live AONEI.

Dr. J N Buragohin
President, AONEI

Message

"Coming together is a beginning, staying together is progress, and working together is success." – *Henry Ford*

It's a great opportunity and an excellent platform to work with young minds of AONEI. I congratulate our founder members who got together and formed this association 20yrs back. As an organisation we have done a lot but many more need to be done to fulfil the aims and objectives of our society.

North east has higher levels of tobacco exposure than national average and indigenous food habits probably leads to high volumes of cancer incidence in this part of the country, especially Head and Neck squamous cell carcinoma. As AONEI with the help of other funding organisations we can do research work in collaboration, because "Todays research is tomorrow's treatment". I urge our AONEI members to come forward and together make a difference in our society. As an individual expert in the field of oncology, we can reach areas that have not been explored before and spread the knowledge of oncology, specially in prevention and early detection. We should make sure that every individual gets standard treatment including palliative care.

I congratulate the organizing committee of 19th AONEI annual conference headed by Dr V Khamo, Organizing Chairman and Dr Keduovinuo Keditsu, Organizing Secretary, for giving lots of effort to organize the conference with excellent academic programs along with participation of many national faculties. I hope this conference will help all of us immensely.

I also appreciate Dr Gaurav Das for taking all the pain and effort to bring out this issue of AONEI newsletter.

Lastly, I would like to end with a quote by Ratan Tata,

"If you want to walk fast, walk alone. But if you want to walk far, walk together."

Dr. Abhijit Talukdar
Organizing Secretary, AONEI

Dear Members,

We know that the cancer incidence, data for 2012-2016 from the PBCRs, shows the highest incidence of cancer in India was from the North East Region. Hence the AONEI is placed in a unique position to address the various aspects of cancer care of this region. The new committee & all AONEI members have put in lot of efforts for homogeneity of treatment across all disease groups in various parts of the region. We all know the harmful effects of tobacco and with this anti-tobacco theme various Anti-Tobacco Runs awareness programs were conducted in Guwahati, Dibrugarh & Silchar by AONEI members in association with other organizations.

Uniform & evidence based treatment is an important part of cancer care, with this objective various CME were organized: - 18th Annual conference was organized by department of Surgical oncology Dr B Borooah Cancer Institute on 3rd to 5th february with the theme Challenges in oncology along with a live surgical workshop.

CME on Tobacco related cancer was held on 31/05/2023 at Hotel Palacio, Guwahati.

CME on Rectal Cancer was held on 29/07/2023 at Vivanta Hotel, Guwahati.

CME on Ovarian Cancer was held on 28/10/2023 at Hotel Palacio, Guwahati.

Many new members have joined the association and it is exciting & important period for AONEI to engage itself with various stakeholders in improving cancer care for this region & we as oncology professional cannot escape from it.

I welcome all new members to the family and with existing members we can move forward in a positive way.

Long live **AONEI !**

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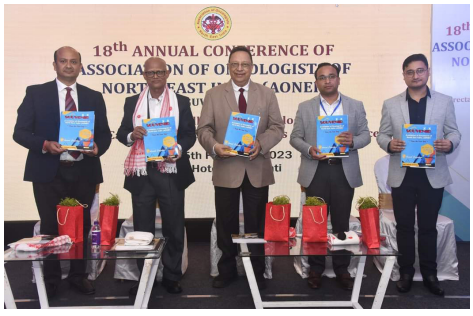
Conference
and
CME Reports

18th Annual Conference of AONEI, Guwahati 3rd to 5th February, 2023 :

This annual conference was attended by more than 250 delegates from entire North-East India as well as from other parts of the country. The event included one live surgery workshop on colorectal cancer and breast cancer with surgeries including laparoscopic low anterior resection, breast oncoplastic surgery, sentinel node biopsy, lymphovenous anastomosis and chemoport insertion. There were three scientific sessions with 37 scientific talks including panel discussions, 61 scientific competition papers and 17 video competion presentations. The programme was inaugurated by the Chief Guest Prof. (Dr.) Dhruba Jyoti Borah, Vice-Chancellor, SSUHS, Assam. He also officially released AONEI Newsletter. Dr. C. Bhuyan delivered the AONEI Oration with a talk on "*Standalone Oncologist - North-East India Perspective*". The award winners are as follows -

Report By :
Dr. Gaurav Das
Organizing Secretary

Release of AONEI Newsletter



Release of Conference Souvenir

Video Competition Awards :

Sl. No.	Name	Video	Prize
1	Dr. Clara A. O. (BBCI)	Whipple's Surgery	1st
2	Dr. Manthan N. T. (BBCI)	VATS Lung Lobectomy	2nd
3	Dr. Eshwarya J. K. (BBCI)	Extraperitoneal Peritonectomy	3rd
4	Dr. Shivendra P. (GMCH)	Zero Ischemia NSS	4th
5	Dr. Dibyajyoti D. (BBCI)	Lap. Right Hemicolectomy	5th

18th AONEI Annual Conference Results :

Sl. No.	Name	Prize
1.	Dr. P. Manasa, SCI	First
2.	Dr. Arun PS, BBCI	Second
3.	Dr. Siddhartha Basuroy, BBCI	Second
4.	Dr. Prashasthi Sharma, BBCI	Third
5.	Dr. Amrita Talukdar, BBCI	Third
6.	Dr. Dibyajyoti Deka, BBCI	Fourth
7.	Dr. Mudassir Bashir, BBCI	Fifth
8.	Dr. Abhinandan Das, BBCI	Sixth
9.	Dr. Ashutosh Sahewalla, BBCI	Seventh
10.	Dr. Rohan Nath, GMCH	Eight
11.	Dr. Tapashi Das, BBCI	Ninth
12.	Dr. Soumi Bhattacharyya, BBCI	Tenth
13.	Dr. Eshwarya Jessy Kaur, BBCI	Consolation 1
14.	Dr. Karthik Chandra Bassetty, BBCI	Consolation 2

Tezpur Cancer Center Holds Important Meeting for World Cancer Day on February 4, 2023 :

Tezpur, Assam: To mark World Cancer Day, Tezpur Cancer Center hosted a special meeting featuring respected doctors, Dr. Venkata Pradeep, Dr. Sanjeev Gupta, and Dr. Suhas, all members of the Association of Oncologists in Northeast India (AONEI). The meeting focused on making people more aware of preventable cancers, addressing the gaps in cancer care, stressing the need for early detection, and encouraging collaboration among oncologists in the region.

Meeting Highlights:

Preventing Cancers: The doctors highlighted the importance of lifestyle changes and regular check-ups to prevent certain types of cancers. Dr. Venkata Pradeep urged everyone to adopt healthier lifestyles and get regular screenings to catch potential issues early. "The key is prevention. By living healthier and spreading awareness, we can significantly reduce the impact of preventable cancers."

Closing the Gap: Dr. Sanjeev Gupta talked about the differences in cancer care and emphasized the urgent need to make sure that everyone has equal access to quality treatment. The discussion focused on strategies to ensure that everyone gets the care they need. "It's our responsibility to make sure that everyone, no matter who they are, can get the cancer care they need. Let's work together to close the gap."

Early Detection Matters: Dr. Suhas spoke passionately about the importance of finding cancer early. The doctors urged people to prioritize regular check-ups and screenings, explaining that catching cancer early can greatly improve the chances of successful treatment. "Finding cancer early can make a huge difference. Regular check-ups and more awareness can empower people to take control of their health."

Working Together for Northeast India:

The AONEI members stressed the need for oncologists in Northeast India to work together.

They discussed ways to collaborate, share resources, and improve cancer care in the region.

The meeting at Tezpur Cancer Center ended with a commitment from the AONEI members to continue raising awareness about cancer prevention, early detection, and ensuring that everyone in Northeast India has access to quality care. The doctors emphasized the need for ongoing efforts to make a lasting impact on the fight against cancer in the region.

Report by:
Dr. Venkata Pradeep
Organizing Secretary

No Tobacco Day CME :

It was held on 31st May 2023 at Hotel Palacio, Guwahati with two scientific session on Oral Cavity Cancer and Lung Cancer respectively. It was a successful event attended by more than 100 delegates. A 'No Tobacco Day' Walkathon was held earlier in the day.

Report by:
Dr. Abhijit Talukdar
Organizing Secretary

On 31st May, 2023, Pratishruti Cancer and Palliative Trust observed "World No Tobacco Day" as a Walkathon, to create awareness about the health hazards caused by tobacco consumption. The event was organised in collaboration with AONEI (Association of Oncologists if North East India), NSS Cell of Dibrugarh University, District Tobacco Control Cell and District Administration.

The event was graced by Deputy Commissioner, Mr. Biswajit Pegu (IAS), Dr. Sanjeeb Kakati, Principal, AMCH, Dr. Ramesh Saharia, Dr. G. S. Agarwal and Dr. Rina Ahmed. About 30 other organisations of Dibrugarh also participated in the same.

The Walkathon was flagged off by Honorable Deputy Commissioner. The Walkathon started from Chowkidingee field to Doordarshan Kala Kendra and back to Chowkidingee field, wherein certificates and refreshments were provided to all the participants.

Report by:
Dr. Gayatri Gogoi
Organizing Secretary

CME on Rectal Cancer :

A **CME** on **RECTAL CANCER** was organized by AONEI on 29th July 2023 and was well attended by more than 100 delegates, including specialists in various fields of oncology, general surgeons and students. The program agenda is listed below in Fig. 1. The highlight of the program was high and enthusiastic participation from the student community, with several scientific papers related to rectal cancer. Dr. Shruti Chakraborty, pursuing DM in Oncopathology at BBCI won the first prize for paper presentation. Her paper was on "Correlation of Tumour Infiltrating Lymphocytes and Tumour Staging in Rectal Carcinoma: A Study in a Tertiary Cancer Care Centre in North East India". Dr. Manthan Thakkar, MCh Surgical Oncology student of BBCI won the second prize for "Short Term Outcomes of Laparoscopic vs Open Mesorectal Excision for Rectal Cancer: A Retrospective Study". The 3rd prize went to Dr. Goutham Raj for the topic "Acute toxicities and treatment tolerance in neoadjuvant treatment in carcinoma rectum". He was from Radiation Oncology Department of State Cancer Institute, Guwahati.

CME ON RECTAL CANCER (AONEI, GUWAHATI)

29th July 2023, Saturday. Hotel Novotel.

Scientific Agenda:

Inaugural speech by President of AONEI (Dr J N Buragohain) at 03:00 PM

Sl. No.	Topic	Speaker	Time	Slot duration
Moderators: Dr Purujit Choudhary, Dr. Siddhartha Phukan, Dr. Ganesh Das, Dr. Abhijit Talukdar				
1	Applied anatomy of the rectum	*Dr. Shivaji Sharma*	03:30 PM to 03:45 PM	15 mins
2	How to read an MRI for rectal cancer?	*Dr. Pratap Kakati*	3.50 PM to 04:05 PM	15 mins
3	How to work up a case of rectal cancer	*Dr. Rajiv Paul*	04:10 PM to 04:25 PM	15 mins
Moderators: Dr Manoj Choudhury, Dr. N N Das, Dr PP Das, Dr Joydeep Purkayastha				
4	Sphincter preservation surgery	*Dr. Niju Pegu*	04:35 PM to 04:50 PM	15 mins
5	APR, ELAPE and bTME	*Dr. Caleb Harris*	04:55 PM to 05:10 PM	15 mins
Moderators: Dr. BC Goswami, Dr. AK Kalita, Dr. Dipak Sarma, Dr. Kanakeswar Bhuyan				
6	Current standards for radiotherapy in locally advanced rectal cancer	*Dr. Vikas Jagtap*	05:20 PM to 05:45PM	25 mins
8	How to sequence TNT treatment?	*Dr. PS Roy*	05:50 PM to 06:15 PM	25 mins
Moderators: Dr. UR Das, Dr. Rocket Brahma, Dr. Anupam Sarma, Dr. Anupam Mahanta				
11	Components of a comprehensive HPE report	*Dr. Jagannath D Sarma*	06:25 PM to 06:40 PM	15 mins
12	Systemic treatment for M1 rectal cancer	*Dr. Duncan Khanikar*	06:45 PM to 07:05 PM	20 mins
PANEL DISCUSSION				
13	Panel discussion for locally advanced rectal cancer	*Moderator: Dr. Gaurav Das* *Panellists:* *Dr. Areendam Barua (SO)* *Dr. Kiran K. (SO)* *Dr. Ghritashree Bora (RO)* *Dr. Partha Medhi (RO)* *Dr. Umesh Das (MO)* *Dr. Raghavender (MO)* *Dr. Palash Das (Radiologist)* *Dr. Sandeep Taparia (NM)* *Dr. Lopamudra (Pathologist)*	07:15 PM to 08:00 PM	45 mins
Judges: From all disciplines				
14	**Post-graduate Award Paper presentation**		**08:00 PM to 09:00 PM**	**8 + 2 mins**

*** Three best papers will be selected by the selection committee and the results will be declared during the CME (anyone absent during announcement will be automatically disqualified and next candidate offered the chance)*

JUDGES WILL BE FACULTY FROM EVERY DISCIPLINE

Vote of Thanks by Organizing Secretary

GALA DINNER

Fig. 1: The Scientific Program

Fig. 2: A well-attended CME with more than 100 delegates

Report by:
Dr. Gaurav Das
Organizing Secretary

CME ON OVARIAN CANCER: Basic to Recent Advances :

On October 28, 2023, an informative CME on Ovarian cancer took place, organized by AONEI(Association of Obstetrics and Gynecology of Northeast India) in collaboration with GOGS (Guwahati Obstetrics and Gynaecological Society). This enlightening event was hosted at the Palacio Hotel on G.S. Road in Khanapara, Guwahati.

The day commenced with a spirited Quiz competition for postgraduate students, Mch, DM, and M.S. residents. An impressive nine teams participated, representing institutions such as the Dr Borooah Cancer Institute, State Cancer Institute, and GMCH O&G Department. Dr. Shivaji Sharma undertook the role of quizmaster, while Dr. C. Bhuyan and Dr. Kuddush Ahmed were the esteemed judges for this captivating competition.

Following this engaging start, the first scientific session took place, where several vital topics were expertly addressed. Dr. Dimpy Begum delved into the 'Surgical Anatomy of Ovary,' Dr. Shiraj Ahmed explored the 'Pathogenesis of Ovarian Cancer,' and Dr. Dippy Aggarwal shared insights on the 'Approach to Adnexal Mass.' Dr. J.D. Sharma and Dr. Anupam Sarma presided as chairpersons for this informative session.

Subsequently, the inauguration ceremony unfolded, graced by prominent figures in the field. Dr BC Goswami, Director of the State Cancer Institute, served as the Chief Guest, with Dr. AC Kataki (Former Director of BBCI) and Dr. B. B. Borthakur (Director of BBCI) as esteemed Guests of Honour. The respective presidents

of AONEI and GOGS delivered the welcome address, Dr. Jadunath Buragohain and Dr. Panchanan Das. Dr. Debabrata Barman, the organizing chairperson of the CME, also took the opportunity to address the gathering. Dignitaries were then felicitated, and a ceremonial lamp lighting marked the commencement of the second session, chaired by Dr. Abhijit Talukdar, Dr. Gokul Chandra Das, and Dr. Dipti Goswami.

In this session, attendees delved into subjects such as the 'Surgical Management of Early Ovarian Cancer' by Dr. Areendam Barua, 'Total Laparoscopic Pelvic Node Dissection using HD 1000 in Gynaecological Cancer' by Dr. Deepak Neog, and the 'Surgical Management of Advanced Ovarian Cancer' by Dr. Debabrata Barman. The third session, chaired by Dr. Asish Gupta and Dr. Jyotiman Nath, examined the 'Managing upper abdomen and thorax in cytoreductive surgery' by Dr. Gaurav Das and the role of Surgery in recurrent ovarian cancer as presented by Dr. Rajiv Paul.

The fourth session explored the realms of chemotherapy and targeted therapy in ovarian cancer,featuring Dr. Duncan Khanikar and Dr. Venkata P. Babu as the distinguished speakers. Dr. C. Bhuyan and Dr. Panchanan Das presided over this session. The agenda then turned to HIPEC (Hyperthermic Intraperitoneal Chemotherapy) and the management of non-epithelial tumours of the ovary. Dr. Jadunath Buragohain provided insights into 'HIPEC and its role in ovarian cancer,' while Dr. Arpita Ray discussed the management of non-epithelial tumours of the ovary. This session was chaired by Dr. S.I. Bora, Dr. Mukul Chandra Das, and Dr. Deepjyoti Kalita.

The scientific session reached its zenith with a thought-provoking panel discussion on ovarian cancer.

Dr. Pankaj Deka skillfully moderated the discussion, which included distinguished panelists such as Dr. Neelakshi Mahanta, Dr. Tarali Pathak, Dr. Bipul Deka, Dr. Ganesh Das, Dr. Himadri Shikhor Das, Dr. Gautam Sarma, Dr. Duncan Khanikar, Dr. Priyanka Sharma, and Dr. Rajkumar Prakash. The active participation and insightful discussions throughout the day made this CME event a resounding success.

The event's closing moments were graced by Dr. Abhijit Talukdar, Secretary of AONEI, who extended a heartfelt vote of thanks to all the participants, speakers, organizers, and attendees who contributed to the success of this insightful CME on Ovarian cancer. Dr. Talukdar's appreciation encapsulated the collaborative spirit and dedication that made this event a memorable and enriching experience.

Fig. 1: Quiz Contest

Report by:
Dr. Upasana Baruah
Organizing Secretary

Other notable activities included Cancer Awareness Camps at Pathsala and Dakshin Guwahati.

At the time of compilation of this Newsletter a CME on Bone Marrow Transplant has been planned with the following agenda.

CME on : "Bone Marrow Transplant – Where do we stand ?"
Organised By : IMA Guwahati Branch, AONEI, NEISHTM in association with Yashoda Hospital, Hyderabad
Venu : Hotel Palacio Date : 20/01/2024

AGENDA

Day : Saturday, Time : 5.30pm to 9.30pm

TIME	TOPIC	SPEAKER	CHAIRPERSON
5.30pm to 6.00pm	Post-graduate Quiz on Hemato-Oncology	Dr Abhijit Phukan	
6.00pm to 6.30pm	Inauguration	Dr G C Das - President IMA Guwahati Dr P K Gogoi -President NEISHTM DR J Bhattacharyya - Chairman,Org. Committee Dr J N Buragohain - President AONEI Dr Ganesh Jaishetwar - Yashoda Hospital	
6.30pm to 6.50PM	Journey Of Hematopoietic Stem Cell Transplant in GMCH	Dr Damodar Das	Dr P K Gogoi Dr Nilakshi Mahanta Dr Anupam Mahanta
6.50pm to 7.10pm	Hematology for Non-Hematologists-bridging the gap	Dr Asif Iqbal	Dr B P Chakraborty Dr Apurba kr Bhattacharya Dr Manisha Deka
7.10pm to 7.40pm	Bone Marrow Transplants-Revolutionary treatment for blood disorders and Blood Cancers	Dr Ganesh Jaishetwar	Dr Amit Kumar Bhattacharyya Dr C Bhuyan Dr Jina Bhattacharyya
7.40pm to 8.40pm	Case Base Panel discussion on BMT	*Moderator* Dr Abhijit Phukan	*Panel members* Dr Ganesh Jaishetwar Dr B C Goswami Dr Umesh Das Dr Gaurav Das Dr Anupam Sarma Dr Sandeep Taparia
8.40-9.20	Quiz Final	Dr Abhijit Phukan	
9.30-10.30	Dinner		

ChatGPT in Oncology : Opportunities and Challenges

Dr. Gautam Sarma, Dr. Partha Pratim Medhi and Mr. Hrishikesh Kashyap

Department of Radiation Oncology,
All India Institute of Medical Sciences Guwahati, Assam

INTRODUCTION

The field of oncology is a complicated area that focuses on diagnosing, treating, and managing many cancers. With technological breakthroughs and the expanding significance of artificial intelligence (AI) in healthcare, chatbot apps have emerged as a viable tool to change patient care in this specialized field. AI Chatbot such as Chat Generative Pre-Trained Transformer (ChatGPT), Bard, Bing, etc, with the advent of machine learning algorithms and natural language processing, have shown great potential in aiding the treatment workflow not only for healthcare professionals but also for patients and caregivers in an effective manner, promoting seamless communication and streamlining clinical operations.

ChatGPT, the breakthrough language model developed by OpenAI with its remarkable powers and adaptability, has taken the internet by storm since its launch on November 30, 2022 [1]. Powered by deep learning techniques, ChatGPT leverages a neural network architecture called Transformer, which revolutionized natural language processing (NLP) upon its introduction in 2017. Its strength lies in adaptability through fine-tuning, excelling in diverse language tasks. Pre-trained on vast internet data, ChatGPT's comprehensive understanding of language structure enables applications like summarization, sentiment analysis, and translation. Particularly popular in chatbots, its remarkable accuracy and contextual relevance make it a versatile tool. OpenAI has released versions like GPT-2, GPT-3, and GPT-4, each distinguished by size and language coverage. GPT-3.5, now in use with 200 billion more parameters than GPT-3, showcases a continual advancement in language models.

While ChatGPT has become widespread in various sectors, its prospective application in cancer promises a bright future. Oncology-focused medical practitioners and researchers can benefit from ChatGPT by using their strong natural language processing abilities to diagnose and stage tumours, interpret radiological images, and provide therapy recommendations based on the most recent clinical guidelines. Hence, using ChatGPT with caution by healthcare practitioners can improve patient outcomes, increase individualized care, and expand understanding and treatment choices in different cancer types.

ChatGPT IN THE MAJOR DOMAINS OF ONCOLOGY:

1. ***Screening & Diagnosis:*** ChatGPT holds great promise in automating the dissemination of information to patients regarding cancer prevention and screening. Several studies have highlighted its capacity to streamline breast and lung cancer screening processes by integrating up-to-date guidelines [2, 3]. This suggests

that healthcare professionals could leverage ChatGPT to enhance oncologic diagnosis and screening when provided with accurate symptom-related input. However, it is crucial to emphasize that while ChatGPT can be a valuable tool, it must strictly adhere to medical ethics and cannot serve as a substitute for physicians in the diagnostic process [4].

2. ***Telemedicine Services:*** ChatGPT could enhance virtual doctor-patient interactions by offering virtual assistance and remote guidance. Its applications include triaging cancer patients, conducting initial assessments during radiation therapy or chemotherapy, and providing support for home care. By educating patients about various cancer types and treatment processes and preparing them for telemedicine appointments, ChatGPT can contribute to improved patient readiness and outcomes. Additionally, the integration of ChatGPT in telemedicine services has the potential to eliminate language barriers, ensuring effective communication between healthcare professionals and patients speaking diverse languages, thereby enhancing access to oncologic care.

3. ***Medical Documentation:*** Healthcare professionals often grapple with the formidable task of handling medical documentation, which consumes valuable time and introduces the risk of common errors[5]. The accuracy of medical records is paramount, necessitating recorders to adeptly capture and precisely document all pertinent medical information derived from patient interviews. While ChatGPT has demonstrated its ability to generate formal discharge summaries swiftly based on physician input [6], it is acknowledged that manual verification by a doctor is essential before finalization. Numerous studies have indicated the promising potential of integrating ChatGPT with effective prompting techniques to streamline healthcare documentation. However, this integration requires careful consideration to address ethical and practical challenges, mitigating potential harm. Additionally, ChatGPT can produce clinic letters with commendable correctness and humanness scores. Whether incorporated as a language assistant or leveraged with provided templates, clinicians stand to gain substantial time savings and heightened precision in their medical documentation processes [7,8].
4. ***Patient Education & Communication:*** Giving cancer patients a comprehensive grasp of their diagnosis and treatment choices is critical for making informed decisions and improving the overall quality of care. ChatGPT has the potential to be an excellent tool for offering patient-friendly cancer information and support [9]. ChatGPT can be pretty helpful in assisting patients in comprehending complicated cancer diagnoses and the vast array of possible treatment choices. When given a patient's medical history, diagnosis, or treatment plan, ChatGPT may provide plain English explanations and descriptions, eliminating jargon and sophisticated medical terminology that patients may find difficult to understand. This feature enhances clarity and reduces anxiety and fear in people who have been diagnosed with cancer. In addition to that, cancer treatment decisions are often intricate and emotionally charged. Hence, ChatGPT can assist patients in making informed choices in such scenarios by offering information regarding the advantages and risks associated with different treatments. Moreover, it can address patients' inquiries about treatment processes, potential side effects, and lifestyle adjustments during cancer treatment.

5. ***Scientific Writing & Research:*** ChatGPT has the potential to aid clinical scientists/researchers with literature reviews by facilitating topic selection, executing literature searches, choosing pertinent articles, and ensuring precise citation and referencing of oncology-related topics. By streamlining numerous laborious tasks, ChatGPT can enhance the capacity of researchers to carry out thorough and efficient reviews. Thereby saving valuable time in research processes that typically demand more human effort. This allows researchers to concentrate on the critical aspects of their work, potentially accelerating the publication process and ensuring quicker dissemination of research results [10].

SHORTCOMINGS IN USE OF ChatGPT:

Indeed, while ChatGPT and similar language models offer valuable applications in diverse fields, including oncology, it is essential to acknowledge and address certain limitations. These drawbacks should be considered to ensure a nuanced and informed approach to utilizing these tools in oncology. Some of the critical limitations include:

1. ***Ethical Concerns:*** Using ChatGPT gives rise to significant ethical concerns about authorship, accountability, transparency, bias, and the potential dissemination of misinformation. In order to uphold the integrity of health science publications, publishers may need to establish specific criteria for incorporating ChatGPT as a co-author. Nevertheless, it is essential to recognize that additional research is required to assess both the effectiveness and ethical implications of deploying AI chatbots like ChatGPT across diverse disciplines. Despite some peer-reviewed papers having been recently published with ChatGPT listed as an author, the World Association of Medical Editors (WAME) has recommended against including ChatGPT in the list

of authors for such publications, given the limitations above.

2. ***Limited Data:*** To maintain the effectiveness of ChatGPT in oncology settings, it is imperative to address its current limitations. The model's training data, last updated in September 2021, may result in errors due to its constrained human-like understanding and lack of recent input data. This limitation underscores the importance of ensuring the accuracy and relevance of information, hindering its usability in the rapidly evolving field of medical research and advancements. Regular updates are essential to enhance ChatGPT's applicability in oncologic practice. These updates will rectify potential inaccuracies and enable the model to stay abreast of the latest medical knowledge. By doing so, ChatGPT can contribute to more informed and reliable decision-making in healthcare.

3. ***Lack of Human Interaction:*** Clinical examination and assessment are crucial in oncology. Despite AI tools' efficiency and speed in accessing patient information, the essence of oncologic care is deeply rooted in the human touch—characterized by patience and empathy. Direct communication between patients and healthcare professionals is vital, fostering a sense of comfort and reassurance among patients. Regarding trust and credibility, the interpretation of AI-generated chat responses significantly differs in medical and health-related matters compared to other products and services. In healthcare, the human touch remains invaluable for comprehending and addressing complex medical information and behaviours.

FUTURE RECOMMENDATIONS:

In the forthcoming years, AI chatbots such as ChatGPT are anticipated to impact the healthcare domain, particularly in oncology substantially. There is an expectation that ChatGPT will be seamlessly integrated into all text editing software. Advanced systems will be developed to detect even subtle data manipulations ChatGPT performs to address concerns about the accuracy of generated content. Currently, editors face the challenge of meticulously inspecting the output of ChatGPT, and there is a persistent difficulty in adequately citing the resources it utilizes. However, continuous research efforts are dedicated to overcoming these obstacles and presenting practical solutions. To mitigate potential misuse, scholarly journals should establish stringent guidelines for using AI in academic papers. ■

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Catalyzing Change : The Transformative Potential of Artificial Intelligence and Machine Learning in Radiation Oncology Practice

Dr Jahnabi Das and Dr Jyotiman Nath

Department of Radiation Oncology, Dr. B. Borooah Cancer Institute, Guwahati

Introduction

The field of radiation oncology is continually advancing, with practitioners gaining access to an expanding pool of data through the progress in advanced imaging processing techniques and the introduction of novel imaging modalities. Artificial Intelligence (AI), often synonymous with machine learning, is technically evaluated in the context of present challenges within the field of radiation oncology. Russell and Norvig define AI as "The designing and building of intelligent agents that receive precepts from the environment and take actions that affect that environment" [1]. In a more insightful perspective, Goel defines AI as "the science of building artificial minds by understanding how natural minds work" [2].

A radiation treatment regimen is determined after a series of visits to a radiation oncology clinic, culminating in the final diagnosis, staging, and prognosis. The RT treatment process involves various stages, including imaging, segmentation of targets and organs-at-risk (OARs), treatment plan development, onboard imaging, treatment delivery, and quality assurance (QA) checks after a protocol has been assigned. These stages demand a high degree of precision, substantial human-machine interaction, and significant labour, making them time-consuming. Following treatment completion, patients return to the clinic for follow-up and toxicity management.

Machine Learning (ML), a subfield of artificial intelligence, enables computer systems to gradually acquire, refine, and expand their knowledge from diverse incoming data without explicit programming. AI and ML play a crucial role in decision-making processes, reducing or eliminating the need for human intervention and efficiently completing time-consuming, repetitive tasks to enhance the accuracy, robustness, and speed of RT processes. Integrating ML also frees up time for other fulfilling activities such as research, teaching, patient counselling, and quality assurance [3].

AI-driven approaches hold significant potential for enhancing patient safety and minimizing radiation toxicity in radiation therapy. By leveraging AI, radiation oncology can benefit from advanced predictive models, personalized treatment planning, and real-time monitoring, ultimately leading to improved outcomes and reduced side effects for patients.

The Applications of AI in the Field of Radiation Oncology.

1. Easing Clinical Workload:

The initial stages of the clinical radiation treatment workflow involve patient intake and assessment, typically requiring a consultation with the radiation oncologist. This consultation encompasses a comprehensive review of the patient's symptoms, medical history, physical examination, diagnostic procedures, pathological and genetic data, prognostication, comorbidities, and the assessment of irradiation toxicities risk. Subsequently, the radiation oncologist proposes a treatment strategy after synthesizing this extensive data. A significant challenge faced by physicians in this process is the continuous accumulation of data that surpasses what can be quickly assimilated and interpreted by humans.

To address this challenge, the development of decision support systems at the point of care heavily relies on AI-based techniques. AI has demonstrated its potential in medical imaging assessments and natural language processing within electronic medical records, offering early promise in aiding clinical management decisions and therapy selection for cancer patients. Despite this potential, AI-based models have not yet been fully integrated into standard clinical practice. The introduction of automation, driven by AI, holds the promise of reducing costs, increasing productivity, and minimizing errors, ultimately benefiting patients in their healthcare journey.

2. Treatment Planning and Preparation:

The process of treatment planning commences with simulation sessions where the patient is immobilized to prevent significant movement, and in most cases, images are acquired to assist in formulating the treatment plan. The collaboration between radiation oncologists and medical physicists is typically essential in this intricate process, especially considering its complexity, which varies based on the site of the illness. Achieving effective patient immobilization is subjective and requires close cooperation.

AI can contribute by anticipating potential challenges during treatment simulation, drawing from previously gathered information about the patient's anatomy obtained through diagnostic imaging. Additionally, AI can propose solutions based on training data from algorithms, thereby expediting and enhancing the treatment planning process.

An approach to mitigate uncertainty involves acquiring MRI data, which provides electron density information and eliminates the need for CT scans by generating synthetic CTs. AI has demonstrated its capability in generating synthetic CT images using MRI scans of the pelvis and brain. Treatment plans developed with synthetic CTs have shown minimal dosage variations compared to those created with actual CT scans. This strategy not only reduces the number of imaging appointments for patients but also minimizes radiation exposure from CT scans, potentially enhancing therapeutic effectiveness and cost savings. Planning radiographers, equipped with the necessary skills for contouring organs at risk, along with advanced practitioners and consultant radiographers trained in gross tumour volume contouring, can benefit from the automation of administrative and routine clinical tasks such as organ at risk contouring. This automation can decrease the clinical load, allowing for the redistribution of essential healthcare resources.

3. Automated Modification and Enhancement of Radiation Therapy:

Artificial Intelligence (AI) holds the potential to automate the planning process for Radiation Therapy (RT), leading to a reduction in treatment variability among patients. Several tools, including radiographer scheduling software, Paretio guided navigation techniques, and clustering analysis of pre-defined plans, can be employed to automatically generate RT plans.

The implementation of Image-Guided Radiation Therapy (IGRT) involves acquiring CT and multiple cone-beam CT images. To capture these images, therapeutic radiologists often use low-dose procedures, resulting in images with a low signal-to-noise ratio. Recent research has indicated that AI can play a role in enhancing image quality by automatically removing noise from low-dose CT images. These AI-driven approaches, while administering a low dose to the patient, have the potential to optimize imaging resolution and signal-to-noise ratio, thereby adding an extra layer of safety to the process.

4. Review and Confirmation of Pre-Treatment:

After receiving approval from the radiation oncologist for the treatment plan, the medical physicist takes on the responsibility of performing plan checks and other quality assurance measures. To enhance the efficiency of specific quality assurance (QA) tasks, such as machine and patient-specific QA assessments, AI solutions have been introduced to reduce the reliance on laborious and repetitive manual measurements.

Innovative AI algorithms have been developed to predict QA passing rates based on the treatment plan, potentially eliminating the need for traditional physical dose measurements. This AI-driven approach not only streamlines the QA process but also identifies potential causes of errors, contributing to an overall improvement in the effectiveness of pre-treatment reviews and confirmations.

5. Dose Optimization :

Optimizing dose to the target with the aim of minimizing both short- and long-term toxicity stands as one of the key objectives in Radiation Therapy (RT). Deep learning algorithms can play a significant role in consistently predicting toxicological outcomes. Future studies aiming to enhance the consistency of research findings will likely involve the utilization of larger and more diverse datasets, necessitating the standardization of study procedures.

Indeed, various AI algorithms have been applied to every task within the radiation therapy workflow (Table 1).

Table 1: Various AI algorithms used for different task in the workflow of radiation therapy.

AI Method	Description	Selected application in Radiation Oncology	Selected Examples
XG Boost	A kind of predictive modelling that consists of a collection of less effective models, typically decision trees	Outcome prediction using structured data, such as tabular data on comorbidities, dosimetric indices, age, and so on, as well as radiomic features extracted from radiographic images. [4]	Prediction of radiation-related fibrosis of neck muscles based on MRI data from patients with nasopharyngeal carcinoma Prediction of tumour motion ranges using 4D CT images in patients receiving radiotherapy for lung cancer. [5]
Neutral networks	Algorithms with multiple layers, each made up of nodes activated in response to input, are somewhat modelled after the neural networks seen in the human brain.	Radiation dose quality assurance (QA)	Pretreatment dose verification in patients receiving radiotherapy for prostate cancer or nasopharyngeal carcinoma. [6]
Convolutional neural networks (CNN)	Convolutional layers in neural networks are used for perception, whereas fully linked layers are used for cognition.	Outcome prediction from unstructured data, for example, derived from radiographic images	Prediction of rectal toxicities of radiotherapy for cervical cancer. [7]
Fully convolutional neural networks (FCN)	Convolutional layers in neural networks are used for perception, whereas fully linked layers are used for cognition.	Image segmentation using unstructured imaging data Prediction of radiation dose distribution	Organ-at-risk segmentation in CT images of patients receiving radiotherapy for head and neck cancer This study aims to predict the 3D dose distribution of SBRT in patients with prostate cancer and; similarly, dose distribution in patients receiving radiation therapy for nasopharyngeal carcinoma. [8]
Variational auto-encoders (VAE)	Neural networks that transform input data into low-dimensional latent vectors by performing dimensionality reduction	outcome forecasting using unstructured data, such as radiography pictures	Radiation pneumonitis prediction in patients with non-small-cell lung cancer (NSCLC) intrahepatic disease control failure prediction and overall survival prediction in patients treated with SBRT for hepatocellular carcinoma. [9]
Reinforcement learning (RL) with deep Q networks	In RL, an agent is trained to interact with its surroundings by carrying out “actions” and reaching “states”; specific actions result in “rewards,” which can be both positive and negative.	Adaptation of radiation dosage	Automated radiation adaption procedures for NSCLC patients. [10]

Challenges of AI in Radiation Oncology

The integration of AI tools in radiation oncology poses several challenges that require careful consideration and strategic planning. While these tools offer promising capabilities, overcoming certain obstacles is crucial for their successful adoption in clinical practice.

Initial Investment of Time and Resources

Implementing AI in radiation oncology demands an initial investment of time and resources. Efforts are needed to comprehend the utility and limitations of these tools, necessitating a restructuring of existing clinical workflows.

Clinical Adoption Hurdles

The primary challenge lies in achieving clinical adoption. Many AI tools are still in the proof-of-concept phase, lacking external validation. Building trust with AI systems is essential, especially as some machine learning algorithms are perceived as "black boxes," making it challenging to interpret their outputs.

Interpretability and Explainability

The opacity of AI, particularly in deep learning algorithms, poses challenges in terms of interpretability and explainability. Despite ongoing efforts to enhance understanding through research on interpretability and explainability, the inherent complexity of AI systems hinders widespread acceptance.

Three key criteria can be employed to evaluate the potential deployment of existing AI tools in a clinical setting, considering their limitations:

Assessment of Time and User's Capacity

Evaluating the time available for assessing AI-generated results and the user's capacity to gauge accuracy is crucial. Users must have adequate time to critically evaluate outputs, acknowledging the potential misalignment between AI processing speed and user assessment.

Correctability of Inaccurate Results

The ability to correct inaccuracies promptly is essential. Assessing whether users can intervene and rectify inaccuracies contributes to the reliability and adaptability of AI tools in a clinical context.

Impact of Inaccuracies on Patients

Understanding the impact of inaccuracies on patient outcomes is vital. Evaluating potential consequences in clinical decisions ensures patient safety and the effectiveness of medical interventions.

It's crucial to note that while specific AI algorithms excel at tasks that may challenge human capabilities, their perception and interpretation of data differ from human cognition. Furthermore, in the context of low- and middle-income countries, distributed learning holds great promise for delivering individualized, evidence-based care. However, careful attention must be given to respecting stringent privacy laws, adhering to standardization protocols, and upholding ethical guidelines to ensure the responsible and effective implementation of AI technologies in healthcare settings.

Conclusion

In conclusion, the integration of AI and ML in radiation therapy operations offers opportunities to enhance patient care, streamline workflows, and allocate more time to essential tasks. To fully realize the transformative impact of these technologies, early introduction in medical education and radiation oncology residency is crucial. The responsible integration of AI can bring about significant advancements, ultimately improving patient outcomes and advancing the field of radiation oncology. It is imperative to understand, organize, prioritize, and continually enhance AI and machine learning without bias, ensuring their meaningful contribution to the next generation of healthcare professionals. ■

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Oral Metronomic Chemotherapy in Pre-operative Setting - History and Current Status

Dr Dibyajyoti Deka and Dr Anupam Das

Department of Head & Neck Oncology Dr. B. Borooah Cancer Institute, Guwahati

Oral cavity cancer is one of the most common incident cancers in India, and along with lip cancer, it accounted for 10.3% of all cancers in India as per GLOBOCAN 2020 [1]. About 60% of oral cavity cancers present in advanced stages and may require multimodality treatment, including complex surgeries. Oral cavity Squamous cell cancer (OCSCC) has an incidence of 9–22 per 100,000 than tumours from other sites [1]. Smoking, alcohol consumption, and betel nut use are the major contributors to OCSCC carcinogenesis. More importantly, OCSCC patients exposed to these traditional carcinogens tend to have poorer treatment outcomes than human papillomavirus (HPV)-related Head and neck Squamous cell cancer (HNSCC) patients. In addition, the long-term (5-year) survival rate is unsatisfactory (approximately 50%) [2]. According to the GLOBOCAN 2020 report, 117,384 of the 354,846 newly diagnosed OCSCC patients died from the disease [2]. Therefore, OCSCC poses a considerable burden to the healthcare systems in different world regions. The majority of OCSCC patients present with locally advanced disease, and the primary therapeutic strategy is tumor-wide excision plus radical neck dissection, followed by adjuvant radiotherapy with or without chemotherapy. Locoregional relapse and secondary primary HNSCC are the most common recurrent patterns and are curable if amenable to local treatment.

The most important chemotherapeutic agent in OCSCC treatment is platinum. In platinum-based concurrent chemoradiotherapy or palliative chemotherapy, administration of the maximum tolerated dose (MTD) of cisplatin (100 mg/m2 every three weeks) is generally considered a gold standard regimen [3,4]. The development of platinum-resistant OCSCC is a crucial factor that leads to treatment failure.

An increase in waiting time for treatment has been shown to be a negative prognosticator in head and neck cancers[4]. It has been reported that within an average waiting time of 4 weeks, up to 30% can have progressive disease (PD). It may make many patients ineligible for any form of curative treatment[3,4]. Surgery is the treatment of choice in the management of the majority of oral cavity cancers. Waiting times for surgery can be manage by giving some treatment that would prevent tumour progression, maintain it in an operable stage, and ensure that such treatment does not delay the definitive surgery. Such

treatment should be easily deliverable, minimally toxic and economical. The recommended induction chemotherapy regimens for head and neck cancer are highly toxic, and hence, it is not feasible to use them during the waiting period. Further, it has been shown that there are no survival benefits of neo-adjuvant chemotherapy for oral cavity cancer [5]. Oral metronomic chemotherapy can be a viable option. It was developed originally to overcome drug resistance by targeting tumour vasculature. Recent studies have shown that metronomic therapy exerts anticancer activity in multiple ways. Recent studies have shown that metronomic therapy exerts anticancer activity in multiple ways.

Definition of Metronomic Therapy- The term "metronomic chemotherapy" (MTC) is currently used for frequent and regular administration of lower doses of chemotherapeutic drugs with minimal drug-free time intervals, or simply "lower doses, longer times" in order to establish a prolonged and lower albeit an active range of plasma concentration enabling a favourable side-effect profile.

Mechanism of action of Oral Metronomic Chemotherapy–

1-Antiangiogenic drugs directly impair the action of vascular endothelial growth factor (VEGF), and the metronomic chemotherapy disables the cells enrolled in the angiogenic mechanisms, suggesting that the tumoral endothelial cells could be a better target to overcome the drug resistance [6].

2- Another demonstrated mechanism of action is the selective modulation of certain gene and protein functions in tumour cells, which can be used as an antiproliferative effect on tumour cells or to sensitize the tumour to specific chemotherapy actions [6].

3-Additionally, MTC has been shown to decrease metastasis; however, the mechanism of this effect has not been established [7].

Most trials on metronomic schedules focus on one of three settings:

1. MTC as an alternative to "conventional" chemotherapy with a more favourable safety profile.

2. MTC as a maintenance treatment after standard chemotherapy that would prolong the efficacy of conventional cytotoxic treatment.

3. MTC as a combination partner for a targeted, antiangiogenic or immunologic agent.

It is worth mentioningthat there are no large RCTs to prove the role of MTC in a pre-operative setting.

Clinical Experience in Head and Neck Cancers-

Advanced head and neck cancers are another group of cancers with limited surgical options and inadequate efficacy of cytotoxic chemotherapy. Metronomic methotrexate and celecoxib were evaluated in platinum-resistant oral cancer without achieving an acceptable efficacy [8,9]. Another study from India on oral cancer studied a metronomic regimen of oral MTX and celecoxib starting preoperatively and continuing as maintenance treatment after the standard treatment protocol. The disease-free survival rates were 86.5% in the metronomic group versus 71.6% in the control group, showing a statistical significance [8,9]. A similar study from India enrolling operable oral cavity cancer with maintenance metronomic therapy showed a median DFS of 13 months [10]. For head and neck cancer, another study evaluated metronomic oral regimen of MTX, erlotinib, and celecoxib in palliative treatment of patients with head and neck cancers and ineligible for maximum tolerated dose. The reported median PFS was 148 days [11]. The same authors retrospectively evaluated the adequacy of oral low-dose chemotherapy for palliative treatment in a heterogeneous group of head and neck cancer patients, revealing a median OS of 155 days, with oral cancers tending a shorter OS [12]. In the light of results of metronomic studies, it can be concluded that metronomic MTX may have a role in patients who are heavily treated and are still in need for chemotherapy for symptom control.

Role of MTC in pre-operative setting – A study from India

In a study by the Department of Head and Neck Oncology, Aster MIMS Kannur, Kannur, Kerala, India,a total of 68 patients received pre-operative metronomic (POMT) with a median age of 55 years (range: 34–73 years). Forty-eight (70%) were males, 29 (42%) had carcinoma tongue, and the majority (N = 52, 76%) had Stage IVA cancer. The mean duration of POMT administration was 30.45 days (standard deviation: 8.22). Thirty-seven (54%) patients had partial responses, and another 23 (34%) had stable disease. Two (3%) had disease progression on POMT. Fifty-eight (85%) underwent surgery after POMT. Margin-positive resection was seen in two patients. Half of the patients who received POMT did not experience any toxicity. Grade 3/4 toxicities were seen in four (6%) patients[13].

Our experience at Dr. B. Borooah Cancer Institute

Our institute's Department of Head and Neck Oncologyhas a long waiting period. The waiting period ranges between 3 to 6 weeks. We cater to almost 350 new patients per month and around 1500 patients at our OPD per month for follow-up. Due to this long waiting period, many patients either develop disease progression, making few of them inoperable or increase the extent of surgery, adding to more morbidity and loss of function.Due to these difficulties, we as a department started using POMT for patients with an average waiting period of more than three weeks. The regimen used in BBCI is MTX with celecoxib. We start with the regimen once routine investigation and pre-operative planning are done. Pre-OMCT clinical pictures are taken

for resection margin during surgery in case of substantial tumour shrinkage. OMCT is stopped one week prior to surgery. We do it so patients' altered physiological parameters return to normal. The tumours are resected with a pre-OMCT margin.

Our observation –

Although there are no studies conducted yet in this regard, here are a few observations

1. Most of the primary diseases respond to OMCT, with a decrease in the primary size. A few remain clinically stable, whereas a few patients show disease progression on OMCT.

2. The bulky nodal disease generally does not respond to OMCT. The nodal disease remains clinically stable in most cases at best.

Difficulties Faced-

1. Sometimes, the primary tumour responds substantially to OMCT with a major decrease in its size. This results in the surgeon's doubt regarding adequate margin during surgery.

2. Sometimes, POMT leads to derangement of haematological parameters like low platelet count and increased PT/INR that either results in a delay of surgery or substantial blood loss during surgery.

Conclusion:

Metronomic chemotherapy using the combination of methotrexate and celecoxib is a low-cost, safe and effective pre-operative therapy in patients with advanced operable oral cavity cancers in a resource-constrained setting with prolonged waiting times for surgery. More extensive randomized trials are required to determine metronomic therapy's exact benefit and duration in the pre-operative setting.■

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Segmental Arterial Clamping and Hydro-Dissection for Partial Nephrectomy in Aberrant Renal Vasculature : a case report

Dr Aditya P. Borgaonkar, Dr Shivaji Sharma and Dr. Ashutosh Sahewalla

Department of Surgical Oncology, Dr. B. Borooah Cancer Institute, Guwahati

Abstract:
In modern era, most common surgical procedure done for renal cell carcinoma is nephron sparing surgery (NSS). With advances in surgical techniques, procedure of NSS has evolved over the years like on-clamp or off-clamp technique; however, these have the demerit of limited warm / cold ischaemic time. A novel way of segmental arterial clamping can overcome demerits of both techniques. In this case report we want to share our experience on outcomes of segmental arterial clamping during partial nephrectomy.

Introduction:
Renal cell carcinoma (RCC) accounts for 2-3% of all the malignancies worldwide. Also known as the internist's tumour, most of them are found incidentally on imaging with surgical management being one of the curative components for stage I-III[1]. Partial nephrectomy (PN) - or more specifically nephron sparing surgery (NSS) - has superseded radical nephrectomy with diminished rate of complications while following principles of oncology[2, 3]. The traditionally followed method for PN was the on clamp technique leading to warm ischaemic nephron injury or off clamp technique, requiring cold perfusate and a higher volume of blood loss[4, 5]. A novel technique of selective arterial clamping can help in overcoming demerits of both without compromising oncological outcomes [6].

Case Report:
A 62 years, female, presented in surgical oncology OPD with complaints of haematuria and dull aching right flank pain for 1 month. She was a known hypertensive & hypothyroid, on regular treatment. There was no history of any substance abuse or significant family history. BMI was 19.6 and ECOG score of 0. Clinical examination had no significant findings. CECT of whole abdomen showed a 6x5.5x4cm lesion in the right renal upper pole & interpolar region abutting liver capsule without any obvious infiltration. There was no clinic – radiological evidence of any distant metastasis. As partial nephrectomy was being planned in view of history of hypertension, a CT angiography was performed which was suggestive of a single renal artery for right kidney with three renal veins independently draining upper, lower pole & interpolar region. Tumour was supplied predominantly by postero - superior division of renal artery with another feeding branch from right lumbar artery.

During surgery, after a midline incision and mobilisation of the hepatic flexure and duodenum, the Gerota's fascia was opened and the renal hilum demarcated with meticulous dissection. The three renal veins and ureter were identified and isolated away from the field with vascular loops. Aberrant artery arising from the lumbar artery (which was ligated and divided) and the renal hilar arteries were defined. Further

dissection at the hilum revealed the postero – superior branch of the renal artery which was selectively blocked with a bull – dog clamp, defining the line of demarcation. After scoring the renal capsule with an electro – cautery, dissection of the renal parenchyma was done with a high – pressure water jet. The advantage of this is that while dividing the parenchyma, it does not injure the intra – renal vascularity which can be selectively ligated and divided [7,8]. The upper pole tumour was removed, renal hilum closed with delayed absorbable sutures and haemostasis achieved. Thereafter, the Gerota's fascia was closed over the remnant kidney, a 28 Fr drain placed and the abdomen was closed. Intra – operative blood loss was 150ml and duration of surgery was 2.5 hours. Patient was discharged on day 3. Post – operative histopathology revealed a pT2N0 clear cell RCC. At 6 months follow – up, she was doing fine, with normal renal function test and no exacerbation of hypertension.

Intra-op Images:

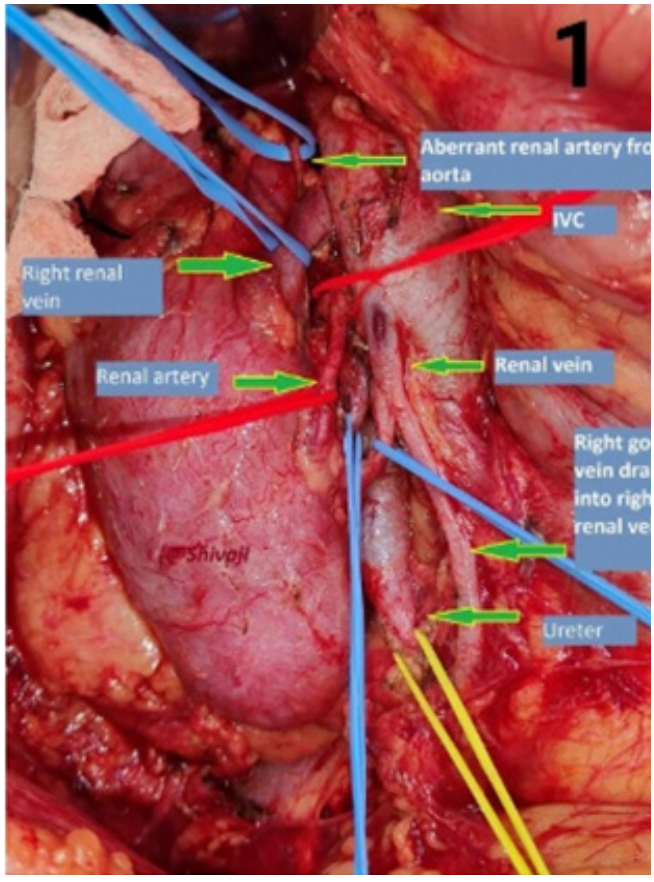

Fig 1 : Dissection of renal vasculature

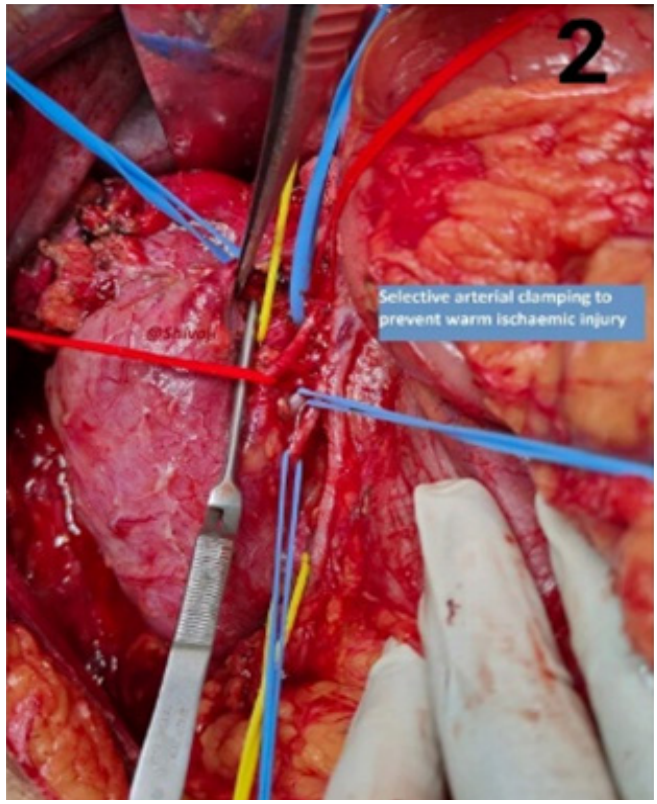

Fig 2: Selective arterial clamping of feeding branch from renal artery

Fig 3 :Parenchymal dissection using hydrodissector

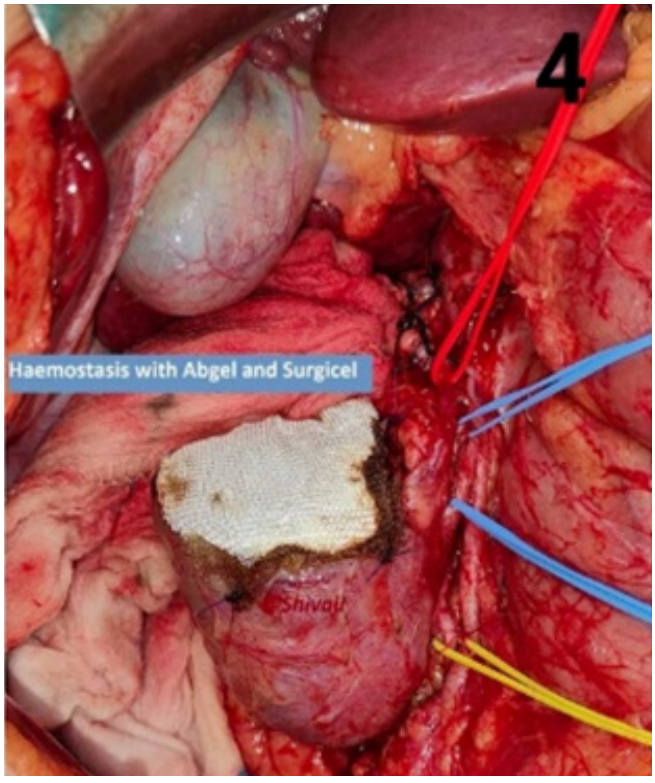

Fig 4: Partial nephrectomy bed covered with absorbable gel sponge & surgical cellulose sheet

Discussion:

RCC are the most common malignant tumours of the kidney. Most RCC are located in the renal cortex and have an insidious progression and are incidentally detected.

Historically, radical nephrectomy was the preferred procedure for surgical management of RCC but it was associated with increased incidences of chronic kidney disease of approximately 85.7% at 6.7 years, compared to a 21% decreased risk at 64.7% following nephron sparing surgery, which resulted in partial nephrectomy as the most frequently done procedure for RCC in modern era [2,3]. Technically PN is done with clamping of renal artery to facilitate excision of tumour under clear vision but it was associated with increased risk of renal ischaemia leading to short term reduced eGFR with altered creatinine levels [4], while off-clamp technique reduced risk of renal ischaemia but had significantly increased blood loss & slightly increased chance of conversion to open surgery in cases of minimal invasive PN [5].

A novel technique of segmental arterial clamping can achieve best of both worlds without compromising on oncological principles. With delineation of vascular anatomy with pre-operative computed tomographic angiography, number of segmental arteries to be clamped, their course & required surgical approach in accessing them can be determined preoperatively facilitating tumour excision and renorrhaphy to be performed under regional parenchymal ischemia without compromising blood supply to rest of the parenchyma [6,9].

Shao P, et al, 2013, in their study of 82 patients who underwent laparoscopic PN, concluded median operative time of 90 min, median blood loss of 200ml, mean clamping time of 24 min, complication rate of 14% (only one patient required intervention), 22% reduction in GFR. They concluded that segmental arterial clamping was feasible procedure after comparing results of studies of standard PN with renal artery clamping [9].

Nohara T, et al, 2008, in their study, compared segmental arterial clamping vs standard renal artery clamping (18 vs 27 cases) for PN. The study concluded significant reduction in increase in post-operative increase in serum creatinine (p= 0.012) along with non-significant reduction in mean intraoperative blood loss but had non-significant increase in mean operative time [10].

Conclusion:

Partial nephrectomy with selective arterial clamping and hydro – dissection of the renal parenchyma is a safe & feasible technique with comparable functional & oncological outcomes when compared with renal artery clamping. However it needs availability of pre-operative CT angiography for planning approach & meticulous hilar dissection.■

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FIGO 2023 Endometrial Cancer Staging System : a critical analysis of the new "Prognostic Based" system - our experience

Dr Karthik Chandra Bassetty, Dr Debabrata Barmon, Dr Upasana Baruah and Dr Dimpy Begum

Department of Gynaecologic Oncology, Dr. B. Borooah Cancer Institute, Guwahati

Introduction:

Staging systems are the backbone of any cancer treatment. They are meant to be valid, reliable and practical[1]. Stage is a strong predictor of patient prognosis. The main bodies for cancer staging include the American Joint Committee on Cancer (AJCC) and the Union for International Cancer Control (UICC)[2]. With regard to gynaecological cancer The International Federation of Gynaecology and Obstetrics(FIGO) takes centre stage and a collaborative arrangement between the three staging systems ensures synchrony with changes in FIGO staging manifesting in the AJCC and UICC version[3].

Earlier anatomy-based staging was the norm however over the years staging has included histological prognostic factors, biomarkers and molecular data as evident in breast, head and neck and prostate cancers[1,4]. Keeping with this trend a radical shift in endometrial cancer (EC) staging was formulated by FIGO in June 2023 compared to the previous FIGO endometrial staging in 2009[5].

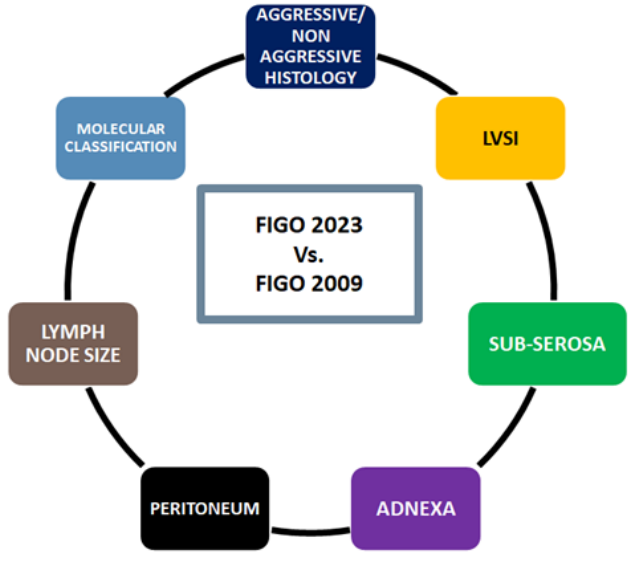

Fig 1: Shows the major changes between the FIGO 2009 system and FIGO 2023 staging systems.

Shows the new FIGO 2023 staging system compared to the previous FIGO 2009 system.

Table 1: Changes in FIGO 2009 and FIGO 2023 endometrial staging (abbreviations given below the table).

FIGO 2009		FIGO 2023	
IA	Tumour confined to endometrium or <50% Myometrium Invasion(MI)	IA1	NAH confined to polyp or endometrium
IB	≥50 % MI confined to the endometrium	IA2	NAH with MI <50 % and LVSI absent
		IA3	NAH involvement of uterus and U/L ovary*
		IB	NAH MI≥ 50% LVSI absent
		IC	AH-polyp or endometrium
II	Cervical stromal invasion	IIA	NAH + CSI
		IIB	NAH + LVSI
		IIC	AH + MI
IIIA	Serosa / adnexa	IIIA1	Ovarian and fallopian tube involvement except IA3
		IIIA2	Sub serosa or serosa involvement
IIIB	Vagina/parametrium	IIIB1	Vagina/parametrium involvement
		IIIB2	Pelvic peritoneum involvement
IIIC1	Pelvic LN	IIIC1i	Pelvic nodes micrometastasis
		IIIC1ii	Pelvic node macro metastasis
IIIC2	Para-aortic LN	IIIC2i	Para-aortic nodes macro metastasis
		IIIC2ii	Para-aortic nodes macro metastasis
IVA	Bladder / bowel mucosa	IVA	Bladder/bowel mucosa
IVB	Distant Metastasis	IVB	Abdominal metastasis beyond the pelvis
		IVC	Distant Metastasis

Abbreviations:
NAH: Non-aggressive histology- Endometrioid *Grade 1 and 2*

MI: Myometrium Invasion

LVSI: Lymphovascular space invasion (substantial)

*Criteria for IA3: Low-grade EEC, <50 % myometrium Invasion, Absence of substantial LVSI, Absence of additional metastasis, Unilateral ovarian involvement without capsule breach.

AH: Aggressive histology- Endometrium *Grade 3,* serous, clear cell, mesonephric and gastric variant of mucinous type.

CSI: Cervical stromal Invasion

The major changes between the old FIGO 2009 and the new FIGO 2023 classification system are concerning the following parameters namely:

a. Histology of the tumour:
Non-aggressive histological types are composed of low-grade *(grades 1 and 2)* endometrioid cancers, while aggressive histological types are composed of high-grade endometrioid cancer *(grade 3)*, serous carcinoma, clear cell carcinoma, mixed carcinoma, undifferentiated variant, carcinosarcoma, and mesonephric-like and gastrointestinal type mucinous carcinomas.

b. Lymphovascular space invasion(LVSI)
As per the WHO 2020 recommendation, involvement of ≥5 vessels is considered as substantial LVSI[6].

c. Involvement of sub-serosa:
As per the ISGYP recommendations[7] uterine serosa involvement is defined as a tumour reaching submesothelial fibro connective tissue or the mesothelial layer, regardless of whether tumour cells may or may not be present on the serosa surface of the uterus.

d. Adnexa involvement:
According to the 2020 edition of the WHO Classification and the European Society of Gynecological Oncology (ESGO), European Society for Therapeutic Radiology and Oncology (ESTRO), and European Society of Pathology (ESP) guidelines conservative management (as if they were two independent

primaries) is recommended for the group of patients with simultaneous low-grade carcinomas of the endometrium and the ovary if specific criteria are present as they have a good prognosis[8,9].

The 2023 FIGO staging for endometrial carcinoma assigns the category of Stage IA3 when the following criteria are met in a low-grade endometrioid endometrial cancer:

(1) No more than superficial myometrium invasion is present (<50%)
(2) The absence of substantial LVSI
(3) The absence of additional metastases
(4) The ovarian tumour is unilateral, limited to the ovary, without capsule invasion/breach *(equivalent to pT1a)*.

The cases not fulfilling these criteria should be interpreted as extensive spread of the endometrial carcinoma to the ovary *(Stage IIIA1)*.

e. Peritoneum:

Extra pelvic peritoneal metastasis is now classified as Stage IVB and is distinguished from those with peritoneal involvement that does not extend beyond the pelvis which is Stage IIIB2.

f. Metastatic Lymph nodal size:

Macro metastases are larger than 2 mm, micrometastases are > 0.2–2 mm in size and/or more than 200 cells, and isolated tumour cells are up to 0.2 mm in size and up to 200 cells[10]. A finding of isolated tumour cells does not upstage a carcinoma[11]. Ultra staging is recommended for the analysis of sentinel lymph nodes[12].

g. Molecular classification incorporation:

When feasible the addition of molecular subtype evaluation to the staging criteria should be performed as it allows a better prediction of prognosis in a staging/prognosis scheme[13]. We do as routine the following IHC markers in all endometrial cancers in our hospital MLH1, MSH 2, and MSH 6 whereas PMS POLE testing is done based on the patient's affordability. The use of molecular classification is used as shown in *Table 2*.

Table 2: Table showing the incorporation of molecular markers in the new FIGO 2023 staging system.

Stage Designation	Molecular findings in patients with early endometrial cancer*(Stage I and II after surgical staging)*
Stage IAm POLEmut	POLEmut endometrial carcinoma confined to the uterine corpus or with cervical extension regardless of the degree of LVSI or histological type
Stage IICm p53abn	P53abn endometrial carcinoma confined to the uterine corpus with any myometrium invasion with or without cervical invasion and regardless of the degree of LVSI or histological type.

Merits of the FIGO 2023 system:

The new FIGO 2023 staging system has prognostic and therapeutic significance. The inclusion of molecular markers can help to streamline the management of patients. Notable changes are the inclusion of the nodal involvement and the separation of tumors with synchronous involvement of the uterine corpus and ovary thereby helping to tailor patient management and avoid overtreatment.

Drawbacks of the FIGO 2023 system:

Molecular classification is not widely available in many parts of the world, especially in Low Middle-Income Countries (LMICs) and POLEmut testing has no defined surrogate IHC like MMRd or p53 groups. This adds to the extra pinch of the patient's wallet in an already economically backward community.

The FIGO 2023 system being a "heavy-weight" pathology-based system[14] leads to a phenomenon called “stage migration” where the patient with the same disease has a high probability of being accorded a different stage when reviewed at a different advanced center due to availability of molecular testing, depth of sub serosa involvement and use of certain histological parameters like no myometrium invasion and ≤ 50% myometrium invasion.

It is well known that the depth of myometrium invasion has poor interobserver variation and irregular endometrial/myometrium interface[15]. These factors lead to difficulty and confusion according to the stage of the patient as it keeps changing during the review of the histopathological report.

The validation for the FIGO 2023 system was not adequately done with a smaller number of study participants[16]. Division of tumours into aggressive and non-aggressive tumours is a backward step to the older Bockman's classification.

Our experience of using the FIGO 2023 system:

We recently conducted a retrospective study to study the impact of the new FIGO 2023 staging system on our patients treated at Dr Bhubaneswar Borooah Cancer Institute, Guwahati between 1st January 2017 and 31st December 2022. A total of 152 patients were included in the study.

As shown in Figure 2, 35 out of 152 patients (23%) had stage change with a rise in patients belonging to *Stage II and III*. Figure 3 depicts the possible change in adjuvant treatment when patients were restaged as per the 2023 staging system. Seven out of 152 patients (5%) would have been untreated and 23 out of 152 patients (15%) would have been over treated. We further observed seven out of eleven patients (63%) who would have needed chemotherapy and radiation but received lower adjuvant treatment developed distant recurrences.

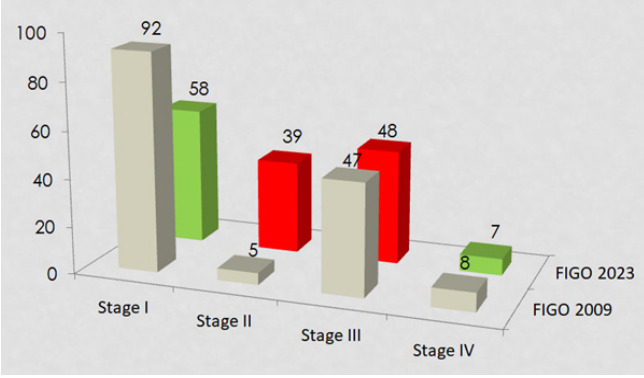

Fig 2: Bar diagram showing the reclassification of patients as per the FIGO 2023 system compared to the FIGO 2009 system.

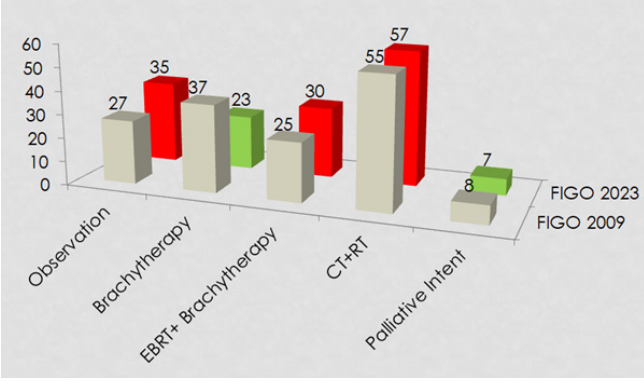

Fig 3: Bar diagram depicting the possible change in adjuvant treatment when patients are staged as per the new FIGO 2023 system compared to the previous FIGO 2009 system.

Conclusion:

There are both advantages and drawbacks of the FIGO 2023 endometrial staging system. While it serves as a radical shift to the prognostic implication of the staging system it still has grey areas which can be improved through various validation studies. ■

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Pediatric Oncology Services at Dr. B. Borooah Cancer Institute, Guwahati

Dr. Suhani Barbhuiyan , Dr. Munlima Hazarika, Dr. Manasa Kakunje, Dr. Helie P. Raval and Dr. Vineeta Singh

Pediatric Oncology Unit, Department of Medical and Pediatric Oncology, Dr. B. Borooah Cancer Institute, Guwahati

Evidence of cancer was found among the ancient Greek and Egyptian civilizations. Hippocrates was the first to use the word "*karkinos*" (meaning crab) to describe the characteristics of the disease. However, Pediatric oncology emerged as a subspeciality in the United States of America following the observations in 1948 of Farber and his associates of the benefits of chemotherapy for acute leukemia. The first recognition of pediatric oncology as a subspecialty came with the development of an academic course in Oncology Nursing as caring for a child with cancer was usually of short duration and focused on helping the child and the family to face inevitable death.

"Each of us needs to realize the enormity of the debt we owe to the past, so that we can be proud of who we are in the present and can work for a better life for our children who are yet to come"
- Maya Angelou

Though pediatric cancers account for a small proportion of all cancers, their sociologic impact is much greater. Compared to adult cancers, the disruption of the family life and functioning is usually felt more in pediatric neoplasia and it often evokes greater sympathy for its victims. In addition, pediatric cancers threaten the widely accepted concept that children should outlive their parents and that children should have gratifying, productive lives.

Achievements in Pediatric Oncology are one of the biggest success stories in oncology. The 5year survival for all pediatric cancers is now rising. However, the scenario of pediatric oncology in most resource-limited countries including India is less than international standards though we have made steady progress over the years. Pediatric Oncology in India needs to improve in all spheres like services, education, awareness and research.

The first dedicated pediatric cancer unit in India was started in Tata Memorial Hospital in 1985.In a nationwide survey of pediatric oncology services in 1988, 50% of cancer centers had adult oncologists treating children, only 10% had trained pediatric oncologists, and less than 15% had dedicated beds for pediatric patients or facilities for platelet transfusion.

In North- East India, there are a handful of trained pediatric oncologists in Assam, Manipur, Meghalaya and Tripura. To our knowledge, the only Pediatric Oncology Team with a dedicated pediatric oncology unit with outdoor and indoor services, disease management group and support services is available in Dr. B.Borooah Cancer Institute, Guwahati. Here, dedicated pediatric oncology ward was started in 2006. Thereafter, there has been regular indoor and outdoor pediatric oncology services here. The number of patients being treated here have increased manifold over the years. Around 400-500 new cases are registered under pediatric oncology every year in Dr. B.Borooah Cancer Institute. Around 1000 pediatric patients are on active chemotherapy protocols per year. Daily OPD numbers in Pediatric Oncology range between 80-120.The OPDs are held from Monday to Saturday every week. The patients undergo advanced investigations as well in the centre like immunophenotyping, immunohistochemistry, nuclear scans etc. Pediatric patients also undergo surgery and radiation in the centre including brachytherapy. Our Unit is the first to start pediatric Bone Marrow Transplant Services in North- East India. So far, 3 pediatric patients have undergone BMT successfully in our centre, youngest being 5 years old child. Pediatric Oncology Disease Management Group (DMG) was formally constituted in 2023 which includes Pediatric Oncologists, Radiation Oncologists, Oncosurgeons, Head & Neck Oncosurgeons, Gynecologic Oncologists, Oncopathologist, Microbiologists, and Anesthesiologists. All the cases are discussed in DMG Meets and treatment protocol decided as per evidence based guidelines. BBCI is one of the 5 centres in the country which has been selected by WHO for its South East Asia Regional Practice Network for childhood cancer,on the recommendation of the Ministry of Health and Family welfare,Government of India.

Pediatric patients receive free treatment under various schemes like Ayushman Bharat, HT Parekh Scheme (CSR funds), Women and Child Welfare Schemes, CanKids. Also all pediatric patients are enrolled for nutritional support by dedicated nutritionists under Cuddles Foundation. This includes free nutritional assessment, nutritional supplements, snacks, lunch, breakfast, monthly ration and parenteral nutrition. Patients are provided accommodation in Guwahati under St. Jude's Child Care, Dipshikha Foundation, Apna Ghar. St. Jude's Child Care Centre also provides free kitchen, treatment funds and non-formal education along with accommodation.

Despite all the efforts, treatment abandonment remains a major challenge in achieving the high cure rates seen in Pediatric cancers in the West. Long distance from the treatment centres,poor financial condition,lack of social support have been found as causes for treatment refusal. Creating awareness about curability of Childhood Cancers and improved social support to the families undergoing treatment can help improve the outcomes in these children.

Recently, dedicated Survivor Clinic has been started in our centre for survivors of Pediatric Cancers in association with Indian Cancer Society. This clinic documents systematically the physical and psychological after effects of cancer treatment. We also have a clinical psychologist to aid in these activities.

In the academic sphere, 2 years Pediatric Oncology Fellowship Programme was started in 2020. Prior to this, 3-6 month certification course was available in Pediatric Oncology. Various research projects and collaborations are ongoing in Pediatric Oncology in our centre.

In conclusion,Pediatric oncology needs collaborative multidisciplinary efforts to reach higher standards. We need to spread awareness and report cases to build up database to highlight unique features of the cases in our region. We are striving to improve care of children with cancer and provide them with good quality of life along with survival.

> *"Their laughter will make your heart melt; their strength will make a grown person cry. If you ever see a child fighting cancer, it will change your life forever."*

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Guest Article

Bone Marrow Transplantation (BMT) Unit

Dr Nikita Mehra

Department of Medical Oncology, Cancer Institute (WIA), Adyar, Chennai

In keeping with the criticality of addressing the clinically unmet need of refractory/relapsing haematological malignancies, Padma Vibhushan Dr. V. Shanta envisaged the establishment of a bone marrow transplantation (BMT) unit that would cater to the masses, driven by clinical diligence of the highest standards, at the Cancer Institute (WIA). This was conceptualized as early as 1977, during a visit to the Royal Marsden Hospital, England. Shortly thereafter, in 1985, though the procedure was still considered experimental and highly specialized at best, Dr. T.G. Sagar, the former Head of the Department of Medical Oncology at the Institute (who later served as its Director), completed a BMT fellowship at Leiden University, Netherlands. Subsequently, Dr. S. G. Ramanan, also a former medical oncology professor at the Institute, completed his BMT fellowship at the University of Kansas, USA.

Upon Dr. Ramanan's return, the Institute began establishing its framework for the unit, leading to its first allogeneic stem cell transplantation in 1995, on a patient with relapsed B-ALL. In almost 3 decades since then, BMTs have become routine to clinical practice at the Institute, with over 500 autologous and allogeneic procedures having been performed for haematological and solid malignancies. The number peaked last year with 70 transplants. BMTs have become a benchmark of the Institute's commitment to provide cutting-edge, highly specialized treatments at an affordable cost to patients, in keeping its ethos and mission.

Access can only be augmented significantly by affordability – and this critical need (given the broad socioeconomic spectra of patients who avail treatment at the Institute) has been staunchly met by the Tamil Nadu Chief Minister's Comprehensive Health Insurance Scheme (CMCHIS), implemented in 2009. The CMCHIS has been indispensable in providing financial support for a record number of patients to undergo autologous and allogeneic stem cell transplantation at the Institute.

In addition to the clinical and translational research projects carried out in the unit, the Institute participates in several nation-wide collaborative efforts. These include several ongoing projects with the Indian Society for Blood and Marrow Transplantation (http://www.isbmt.org)

and the Haematology Cancer Consortium (http://www.hemecancer.org). These are crucial in enabling the collective enhancement of the haematological community's knowledge and resources in India, so as to undertake BMTs broadly and more efficaciously.

Our transplant team comprises of medical oncologists and paediatric oncologists with hemato-oncology expertise, nursing staff members, and a transplant coordinator to provide patients with holistic expertise and care. In keeping with standards adhered to by the world's leading transplant centres, we have a dedicated blood transfusion team at our own Blood Bank for apheresis procedures to be seamlessly performed, with a dedicated team of radiation oncologists that plan and deliver total body irradiation (TBI)-based transplant conditioning regimens.

In addition to the immediate therapeutical benefits to the patients, several projects undertaken in the BMT unit are focused on research to improve patients' quality of life (QoL). We work closely with the Department of Psycho-Oncology to address various psychosocial concerns that our patients and their caregivers may experience across the BMT treatment-cycle.

We recently undertook a translational research project which entailed the incorporation of a low-cost, novel methodology for M-protein estimation by MALDI-TOF mass spectrometry in patient samples with plasma cell dyscrasias. We developed this low-cost, novel technique at the Institute in 2020, subsequently filing a patent for it. MALDI-TOF mass spectrometry is highly sensitive to M-protein identification at diagnosis, thus serving as a useful peripheral blood-based marker in the assessment of minimal residual disease (MRD) for multiple myeloma and AL amyloidosis.

The mission of the Institute has been to identify the unmet needs of patients (and caregivers) and to develop and implement solutions as a unified quest between clinicians, researchers, and supporting staff. Often, unmet needs are region-specific and Institute-specific. It is imperative to identify these needs proactively, so as to improve the quality of life and survival of our patients. Perhaps in doing so, we will be able to set a standard to lead the haemato-oncology community as a whole, bringing our visionaries' endeavours to a full circle.

The future of the BMT Unit:

- With the approval of CAR-T cell therapies in India for treating B-lineage leukaemias, lymphomas, and soon (as in other countries) for multiple myeloma, we will steadily work towards preparing our units and setting up SOPs for incorporating these treatment paradigms. CAR-T cell therapies have demonstrated manageable safety and (when integrated in a BMT-setting), and excellent efficacy – with significantly longer overall survival and better outcomes in patients with various haematological malignancies. The BMT unit will focus on enabling access to these therapies to achieve the same balance of affordability & accessibility in providing specialized treatments that was set by the precedent of the Unit itself.

- Establish robust infection control programmes with infectious diseases experts, microbiologists, and other expert scientists.

- Pursuing translational research projects along with clinical and lab experts to test the frontiers in BMT.

- Conducting advanced BMT training programmes for all healthcare professionals, including nursing staff members and social workers.

Our Leaders :

The Cancer Institute (WIA), Adyar, was set up in 1954. It was founded by Padma Bhushan Dr. Muthulakshmi Reddy, a freedom fighter, the nation's first woman legislator from the (erstwhile) Madras Presidency, and a stalwart who did so much for cancer care in India through many different initiatives. Our visionary leaders, the late Padma Shri Dr. S. Krishnamurthi and late Padma Vibhushan Dr. V. Shanta carried forward the ideals of the Institute. We are grateful to our leaders for ensuring that we are provided the vision, culture, values, and principles in addition to their support to continue to pursue the Institute's ideals. ■

Ethos: **'Service to All'**

Vision: **'Today's Research is Tomorrow's Treatment'**

Expert Comments by AONEI Member

Cancer Institute (WIA), Adyar, Chennai is at the forefront of Cancer research and treatment in this country. Besides offering dedicated services to the underprivileged, the center has established itself as a pioneer in research in clinical and translational medicine. HSCT unit at this institute is one such example. The vision to facilitate the development of a HSCT unit in 1985 and carrying out an Allogeneic SCT in 1995 is a remarkable feat. The complicated science behind HSCT was not properly understood at that time, and many questions were unanswered.

Going ahead, the Institute has completed 500 HSCTs. With the advent of better GVHD prophylaxis, and an increase in donor portfolio, these numbers will increase quickly, and going by the institute's central ethos of "Service to All", I am sure this numbers will represent the financially less privileged patients. I feel fortunate to know some of the

faculty members of Medical Oncology of this Institute. Your work ethics inspires me.

BBCI has also taken the baby steps in the same direction. Though the Institute was established in 1973, the road to progress was very bumpy. It was announced as a regional cancer center in 1986. However, the Institute could never break away from the administrative shackles. It was only when DAE took over the control of the Institute's administration, and the center was established as a unit of TMC, Mumbai, clear vision to fulfill the region's needs were addressed. Dr. Amal Ch. Kataki, the then Director of BBCI took active steps in realizing the unmet need of this region and facilitated the development of a HSCT center in BBCI. HSCT center was developed with limited blood bank and lab support in two isolated cabins in July, 2021. Amidst Covid-19 pandemic, we carried out 3 ASCTs in 2021(1st time in NE India). These transplants were carried out using an apheresis facility elsewhere. In Feb, 2022, Dr. Ranjita Sharma, along with our transfusion nurse and a technician were sent to ACTREC, Mumbai for training. We started Stem cell apheresis in June, 2022. Before that, we did Matched sibling donor Allogeneic SCTs in two patients with Aplastic Anemia using bone marrow grafts. The existing unit was closed down in October, 2022 due to construction of a new facility. Our new HSCT facility (also an ambitious project of Dr. Amal Ch. Kataki) with 5 hepa-filter enabled rooms was unveiled on 30th May, 2023 by PadmaShri Dr. Rajendra Badwe, the then Director of TMC. So far, this new facility undertook 5 patients for HSCT. Due to cross infections, simultaneous admissions have been kept to a minimum. We are now equipped with the infrastructure and manpower to do HLA-mismatched, haploidentical SCTs, and ABO- mismatched grafts. We our equipped with an ever-improving Microbiology team that provides us with viral PCR and Mycology services (also the 1st time in NE India). We are doing rate-controlled cryopreservation of stem cells. These developments have taken place in two years timeline. I am happy that I could be a part of this remarkable facelift in the history of this Institute. BBCI has also become a member of ISBMT and HCC to participate in the nationwide research projects. Going forward, we are envisioning to start the CAR-T cell therapy in this unit this year, and I am undertaking a training program to learn ex-vivo T-cell depletion that will improve the outcomes of our haplo-identical SCTs.

The numbers will definitely increase, but we committed to acheive long term and immediate outcomes that are at par with other leading HSCT centers, and offer all types of SCT services at the most affordable rates.

Dr. Asif Iqbal
Associate Professor (Adult Hematology)
Deptt of Medical Oncology
Dr. B. Borooah Cancer Institute, Guwahati- 16

Special Article

Connecting the Known and the New

Dr Keduovinuo Keditsu

Director Operations & Consultant Surgical Oncologist
Putuonuo Hospital, Kohima, Nagaland

This article is in response to a request from the AONEI Editor to share some insights into organizing a conference that may be of help to future organizing secretaries and committees. As the Organizing Secretary of AONEI 2024, this year in its 19th edition, I have enjoyed the benefit of accessing the know-how and experience of my predecessors.

The first person I approached to kickstart the preparation of the 19th Annual Conference AONEI 2024 was the past AONEI Secretary Dr. Vikas Jagtap (AONEI 2020). He sent me a step-by-step process on how to go about organizing a conference:

1. Select good hotel with hall
2. Form local organizing committee and prepare tentative scientific agenda
3. Contact sponsors
4. Contact hospitals and faculty
5. Contact pharmaceutical companies
6. Talk with local centres for advertisement sponsorship in souvenir
7. Make print-work ready by December.
8. Avoid last minute rush.

This outline served as an excellent reference and helped me focus on the priorities without panicking.

Tip 1: Talk to the experienced - Ask for help anytime

The first and the most important step is to discuss and collect ideas from past secretaries, organizing secretaries, presidents and office bearers. Their practical experience(s) are priceless. Dr Caleb Harris, a senior and mentor, guided me in all aspects of the planning and helped extensively in the execution of the scientific programme as well as the live workshop. The present AONEI Executive Committee members were prompt and proactive, helping me make quick decisions, guiding our team up to the minutest detail. Having the support and encouragement of such a vibrant team of seniors and colleagues is one of the most vital recipes for a successful conference.

Tip 2: Start Early – Plan Ahead

We began preparation 6 months from the scheduled date of the conference. I projected this as an acceptable timeline for organizing a regional conference with expected number of attendees at 150. In retrospect, if there is a next time, I would start much earlier. Perhaps 8 months. Coordinating with

several individuals and organizations, we need to account for delays due to holidays, paperwork, and unforeseen circumstances.

Tip 3: Formation of the Organizing Committee

When we received the assignment at the AONEI GBM in February 2023, a few of us from Nagaland who were present during the meeting formed a WhatsApp group (now 32 members) to include oncologists, other medical professionals and allied services closely involved with cancer care. Even though only nine members attended the first meeting, the quality of our discussion was robust with excellent inputs and advice from all, notably past Organizing Secretary Dr V Khamo (AONEI 2019), and Joint Secretary Dr W Nyuthe (ISGNECCON 2023). Once again proving that talking to those with experience makes a huge difference. As the Organizing Secretary, ensuring each meeting has a precise agenda is extremely important. We could cover the major steps of execution:

- Formation of local organizing committee and sub-committees
- Delegation of tasks to various committees: Scientific, Finance, Cultural & Mementos, Souvenir Magazine & Brochure, Transportation & Accommodation, Reception, Event & Food Coordination Committees. It is very important for each committee to have a team leader. It is helpful if committee members can volunteer to take this role, and help the Organizing Secretary.
- Venue selection and booking of the conference hall; Reservation of hotels other than the conference venue done in advance for the attendees.

  All Committees are equally important. However, I felt that the event coordination and management committee must be given priority as it plays a crucial role in the overall outcome of the programme.

Tip 4: Deciding on a theme

Designate a committee (we designated the scientific committee) to suggest an appropriate theme for the conference. The theme guided the committee to plan topics for the scientific programme and the speakers to focus on the key take-away messages for the delegates. Several ideas and suggestions came in (from all directions) throughout the planning & preparation period but the theme helps the committee to focus, and say "no" wherever necessary.

Tip 5: Setting the Priorities

- Brochure content, design and publication – early dissemination of flyers for the conference is a must to create awareness and interest amongst the targeted audience. People need time to plan and prepare for travel (perhaps a club in a holiday). We need a robust team to work on the contents of the brochure. The scientific committee needs to work hand in hand with the brochure committee.
- Letterhead design & sponsorship letter
- Preparing budget and expenditure plan
- Talking to sponsors and fund raising

Tip 6: Budget & Expenditure Plan

A systematic budget list must be made and should include the following:

- *Location:* conference hall and venue, accommodation for faculty, banners and stage set up, stalls and signages, audiovisuals
- *Transportation:* long distance travels (Flight/train), local transportation
- Event management expenses, photography, video recording
- *Food expenses:* all meals including gala dinner/ banquet
- *Stationery:* brochure and magazine design, magazine printing, stationary welcome kits, mementos and awards, certificates etc.
- Live workshop (if present) audiovisuals
- Hall or outdoor set up for evening programme(s)

Tip 7: Reach out to sponsors

Aim high. As the popular saying goes "Aim for the sky, at least you will reach the treetop", our finance committee worked hard. We exceeded our expectations of raising funds for this conference.

- Talking to sponsors and sending out emails – writing genuine, passionate and personal emails helped create interest amongst the sponsors, to win their trust and support.
- For a smaller scale conference such as AONEI, 3-4 main sponsors are acceptable.
- Documents required by most sponsors: Conference brochure, Tentative scientific agenda, Society Registration Certificate, PAN card, Bank details, Cancelled Cheque, GST certificate, Sponsor invitation

letter with sponsorship categories/Tariff card, Budget of conference. Keep these documents ready for use.

- An official letterhead is required for all purposes – letter to sponsors, letter to faculty, proforma invoice etc. Collect E-signatures of the organizing secretary and organizing chairman and prepare stamp for each is required for all sponsorship paperwork

- Some sponsors require slots for sponsored talks, or lectures to be given by their designated faculties, hence it is important to finalize the main sponsors at an early date.

Tip 8: Consultation of the Executive Committee at all stages of planning :
Update and consult with the Executive Committee at all times. Take into consideration all the suggestions and advice of the seniors to ensure that the planning is being done in an appropriate manner, and all standard operating procedures are being followed.

Tip 9: Invite everyone - the new as well as the old :
All themes may not permit every conference to be an all-inclusive programme such as ours. As our theme was "Expanding Horizons – What's Known and What's New", we had the liberty to choose vast topics, and include a variety of specialties and subspecialities. Our theme has allowed us to accommodate the vast body of experience garnered by pioneers and seniors in our field. At the same time, with an equal focus on the "New", our committee was able to open the platform to newcomers and juniors eager to present their research.

Tip 10: Accept challenges and do not be discouraged :
There were several unforeseen challenges starting from team building and motivation, coordination between committees, accommodating all the suggestions regarding scientific programme, faculty choice and invitations, meeting the targets as per the planned timeline, negotiating with the sponsors, and a lot of paperwork. Delayed or inconclusive confirmation from faculty regarding participation and last-minute cancellations was quite stressful. However, we were very fortunate to have very positive and supportive faculty.

As this is the 2nd time Nagaland is hosting the annual AONEI conference, the dates coinciding with the World Cancer Day, we envision that our programme will serve as a catalyst to educate and create awareness amongst the medical fraternity, the government and the public, in line with the World Cancer Day 2022-2024 theme: "Close the Care Gap".

With 100+ faculty (53 regional, 43 national and 23 local), 72% were visiting Kohima for the first time, we saw this as an opportune moment to facilitate a confluence of practitioners ranging from tertiary to primary healthcare and begin mutually beneficial dialogues and partnerships for future initiatives.

I am thankful to the editorial team for this opportunity to share a few of my personal insights. Above all, we must recognise that each conference is specific to the time, place and context in which it is being organised and held. The actions taken and lessons learnt this time may well be irrelevant for another edition. I hope that this article will serve as a post mortem and add to the annals of our collective experience. ■

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AONEI Editor & Website in-charge
Dr. Gaurav Das