AROI Newsletter

June 2024 Vol.20, Issue 2

From the office of AROI

Dear All,

Greetings from AROI !!!
We are already in the middle of the year. Academic meetings including AROI-ICRO teaching Programs, AROI-ESTRO courses and various academic meetings were successfully conducted by our esteemed AROI & ICRO members.
We also welcome all the new members of AROI. We are excited to have you as part of our membership and we look forward to see you in our events and conferences. As we move forward, we encourage you to stay connected with our association, participate in our events, and share your ideas and feedback with us. Your involvement is vital to the success of our association, and we look forward to working with you to achieve our mission and goals.
AROI is looking forward to meet all its members in forthcoming annual conference at Mangalore. The abstract submission is open and we sincerely hope that the enthusiasm of our members will make it a grand success. We also invite the ICRO fellowship applications to be announced during the 44th AROICON 2024.

Best Wishes

Dr. Rajesh Vashistha
Chair AROI

Dr. Manoj Gupta
President AROI

Dr. V Srinivasan
Secretary General AROI

Dr. S N Senapati
President Elect AROI

AROI Newsletter

Inside this issue

Dr. Vikas Jagtap

Vice President - North East AROI
ICRO Joint Secretary (East)

Deputy Medical Superintendent
Additional Professor & HOD
Department of Radiation Oncology
NEIGRIHMS, Shillong

Newsletter Editor

From the office of ICRO

FICRO applications

Secretary – ICRO
Dr. Gautam Sharan

Vice Chairman – ICRO
Dr. Mahdup Rastogi

Chairman - ICRO
Dr. Rakesh Kapoor

Guidelines and Instructions for nomination of candidates

An individual elected as a Fellow of the Indian College of Radiation Oncology is expected to:

Stand out among peers in the profession as a person of distinction at the national/ international level.

Have distinguished himself/herself in the profession:

as a physician in his / her specialty; and/or

in service to Medicine in patient care, teaching, public health work and/or health administration.

The Eligibility Criteria for the Fellowship of Indian College of Radiation Oncology:

Founder Members of the ICRO

OR

Membership of the ICRO for at least 5 years and possessing more than 15 years of experience after post-graduation.

Founder members are automatically eligible for award of the Fellowship, subject to submission of Application and the payment of the Admission Fees for the Fellowship. (Fellowship Fees-Rs 7800/- Includes the GST)

For other than Founder Members, Application needs to be submitted and after Election as a Fellow, a communication will be sent to the Elected Fellows for depositing the Admission Fees for the Fellowship, by the due date as per the communication.

Fellowships will be awarded after the receipt of the Admission Fees.

Format of the Application Form and the Instructions can be downloaded from the AROI Website. A soft copy of the application is to reach Dr. V Srinivasan, Secretary ICRO through e.mail (secretaryicro@gmail.com, dr.gautamsharan@gmail.com) so as to reach him not later than 12 midnight of **30th August 2024**. A hard copy of the application along with all supporting documents is to reach the Secretary, ICRO (Address given in the application form) at the earliest but not later than **10th September 2024.** The applications will be valid for a period of 2 years (The current year, if received by deadline, and for the subsequent year).

Late applications will be considered only for the Election of Fellows for the subsequent year.

Admission Fees for ICRO Fellows:

Rs 7800/-(Rupees Seven Thousand and Eight hundred only. This includes GST), through DD / Online Bank Transfer to "AROI-ICRO",

Name of A/C:AROI-ICRO
Bank: State Bank of India
Bank Address: Millerganj, Ludhiana, Punjab-141001
Account No: 39535445525
IFSC: SBIN0000731
Type of Account: Current

FICRO applications

The Nominees are to be Proposed and Seconded by Members of AROI of GOOD STANDING of FIFTEEN YEARS duration. The PROPOSERS AND SECONDERS MUST BE_ICRO MEMBERS. Soft copy of the Application must reach the Secretary, ICRO by midnight of **30th August** of the year of Election, with a copy to the Chairman, ICRO. Documentary evidence of all Statements/Experience/Awards must be attached to the HARD COPY of the Application and is to be sent to the Secretary, ICRO so as reach him/her on or before **10th September** of the year of Election. The attention of the Proposer and Seconder making the nomination is invited to the Guidelines and Instructions laid down for the purpose.

1. The Proposer and Seconder nominating the candidate should certify from personal knowledge the professional and scientific standing/achievements of the candidate
2. Every candidate shall be proposed and seconded by a statement in writing signed by at least two Life Members of AROI of GOOD STANDING of FIFTEEN YEARS duration. The PROPOSERS AND SECONDERS MUST BE_ICRO MEMBERS.

INSTRUCTIONS

1. Five copies each and a CD/DVD of the following documents must accompany the application for nomination.
    i. A precise statement limited to 120 words on nominee's professional and scientific standing/ achievements which form the basis for nomination signed by proposer/seconder.
    ii. Information as per format prescribed, duly completed. Follow the same section numbers in their submission as in the nomination form avoiding reference to enclosed appendices.
    iii. List of publications:
        a) Two separate lists of publications i.e. one in Journals included in Medical Databases, Medical Literature analysis and retrieval system (Medlar) etc. and other one in Journals, not included in medical database but published in Journals of National Societies/Professional Associations.
        b) Be written in chronological order and should include (1) Names and initials of all authors, (2) Title of article, (3) Title of publication abbreviated, (4) Volume number, (5) First and last page number, (6) Years of publication.
        c) Reference to books should include: (1) City of publication (2) Name of Publisher (3) Year of Publications.
        d) Abstracts and Proceedings of Conferences etc. should not be included in the list of publications.
2. Five copies each of six published papers considered to be best by the proposer. The Citation Index of six best published papers of the nominee and Average Impact Factor of the Journals in which the six best papers have been published may also be provided along with nomination for Fellowship. (Impact factor of the Journal in the year of publication of the concerned article).

From the office of ICRO

FICRO applications

The under-mentioned guidelines may also please be noted in this connection:

1. Only Life Members of AROI of GOOD STANDING of FIFTEEN YEARS duration and who are ICRO Members can Propose or Second the Nominee.
2. A Member may not propose more than three names for Fellowship in a year. He/ She may, however, second any number of proposals.
3. The candidate shall be Indian citizen. Exceptionally a foreign national who may have done outstanding work in India or for India in his/her own country may be considered.

Note: Nominations which are either incomplete or not according to the prescribed format will not be processed.

Chairman, ICRO	Secretary, ICRO
Dr. RAKESH KAPOOR Prof & Unit Head Deptt. of Radiotherapy & Oncology. Tertiary Cancer Centre, PGIMER, Chandigarh. Professor In-charge Procurement Equipment Purchase, PGIMER. Chairman Indian College Of Radiation Oncology. Founder Director Homi Bhabha Cancer Hospital & Research Centers Punjab (Unit of T.M.C, Mumbai) D.A.E. (Govt of India) Email: : drkapoor.r@gmail.com, Inst. Email :kapoor.rakesh@pgimer.edu.in	**Dr. Gautam K. Sharan** Medical Director HOD & DNB Coordinator, Radiation Oncology Jawaharlal Nehru Cancer Hospital & Research Centre, Idgah Hills, Bhopal- 462 001, MP, INDIA E.mail: secretaryicro@gmail.com dr.gautamsharan@gmail.com

FOR ELECTION OF ICRO FELLOW, AN OVERALL ASSESSMENT IN ALL SPHERES WILL BE DONE AND VARIOUS CRITERIA WILL BE CONSIDERED AND NOT ONLY EXCELLENCE IN ONE PARTICULAR SPHERE ALONE

Congratulations

46TH ICRO Winner

1st

Dr. Pratheesh C

Max superspeciality Hospital , Saket, New Delhi

Guide - Dr. Charu Garg

2nd

Dr. Rohit Golla

Jawaharlal Nehru Cancer Hospital, Bhopal

Guide – Dr, Gautam Sharan

From the office of AROI

Applications Invited for: Fellowships/ Grants/ Best Papers

S.No.	Name of Fellowship	No's	For	Age Group	Fellowship Grant (in Rs)	Basis	Member ofAROI For #/yrs.	Min Papers	Regularly AttendingAROI conferences	Already availed fellowship in the past
1. Overseas										
1.1	AROI Fellowship	1	Radiation Oncologist	>50	1.5 Lakhs	MD/DNB	20	5	Yes	Then weightage to be given To those who have not Availed any Fellowship (or Any other Candidate is not available)
1.2	AROI Fellowship	2	Radiation Oncologist	41-50	1.5 Lakhs	MD/DNB	10	5	Yes	
1.3	AROI Fellowship	3	Radiation Oncologist	35-40	1 Lakh	MD/DNB	5	3	Yes	
1.4	AROI Fellowship	3	Radiation Oncologist	30-35	1,00,000	MD/DNB		3	Yes	
2. Within India										
2.1	AROI Fellowship	1	Medical Physicist	<40	30,000	DRP/MSc(MP)	2	BASED ON THERESUME AND INTERVIEW ATTHE CONFERENCE & PREFERENCE GIVEN TO PAPER PRESENTERS	Yes	
2.2	AROI Fellowship	1	Radiation Oncologist	< 35	30,000	MD/DNB	3			
2.3	AROI Fellowship	1	RT Technologist	<45	15,000	AERB Certified	Yes			No
2.4	Neil Joseph Fellowship	6	3rd year PG student		20,000	Student MD/DNB	Yes	RESUME AND INTERVIEW		

3.1	Best Proffered Paper forSenior Members	1	Radiation Oncologist	>40 - ≤50		Post MD/DNB >10 Yr.	10-15 years	
3.2	Best Proffered Paper forSenior Members	1 1	Radiation Oncologist	-≤40		Post MD/DNB 5-10 yr.	5-10 years	
3.3	Dr. G.C. Pant YoungDoctor Award	1	Radiation Oncologist Post MD/DNB	<40	30,000 For fellowship	Post MD/DNB 3 yrs.	3 years	
3.4	Dr. M S Gujral Gold Medal	1	Doing MD/DNB		15,000+Medal		Yes	
3.5	Dr. M C Pant Gold Medal	1	MD /DNB (Course ongoing)		10,000+Medal		Yes	
3.6	Gold Medal Medical Physics	1	Physicist/Radiation oncologist with physicist	<30	10,000	DRP/MSc in Med. Physics	Yes	

From the office of AROI

Applications Invited for: Fellowships/ Grants/ Best Papers

Procedure for Application:

1. Applicants have to send a copies of date of birth certificate, the publications mentioned under each Fellowship and Self-certified proclamation that they are working full time in radiotherapy (soft and hard copy both)
2. Fellowship amount will be given to candidates after 15% tax deduction.
3. All the applications for fellowship/ best paper awards be sent along with the full paper and the letter from head of department/ institute to the office of Secretary General AROI by 5 PM, 30 August 2024
4. No Objection certificate from their head of Department if selected to go for 4weeks fellowship. Fellowship must be completed before August 2025.
5. PG Students shall send recommendation for presenting best paper through Head of the Department.
6. For best paper NOC for publication in JCRT (if selected). PG students should approach for best paper through their HOD/guide.
7. For fellowship more than 35 years age category should be ICRO member.
8. Mailing address and details -
    a) Dr. V Srinivasan: secretaryaroi@gamil.com , vsrinivasan09@gmail.com
    b) Dr. Manoj Gupta : presidentaroi.manoj@gmail.com

Postal address: Dr. V. Srinivasan, Secretary General, Head Radiation Oncology , MIOT International Hospital , Chennai 600089
Mob : 9841022366, E-mail: secretaryaroi@gmail.com , vsrinivasan09@gmail.com

From the office of AROI

APPLICATIONS INVITED FOR AROI NATIONAL CONFERENCE AND AROI - ICRO / AROI – ESTRO COURSES

Bids are invited to hold

1. **National AROI Conference of 2026**

2. **AROI ICRO Teaching Program**
   a) AROI-ICRO Sun PG Teaching Course 2026
   b) AROI-ICRO Sun PRODVANCE Course - East & West Zone 2025
   c) AROI-ICRO Sun PRODVANCE Course - North & South zone 2026
   d) AROI-ICRO INTAS RADIOBIOLOGY COURSE – 2026

3. **AROI-ESTRO Teaching Course for 2026**

   a) Gynae Teaching Course
   b) Head & Neck Teaching course
   c) Advanced Technology teaching course

3. **Best of ASTRO – 2026**

4. **YROC 2026**

How to Apply

Forwarded by Head of the Department & Head of the institute

Should be through Zonal / State Chapter of AROI

Application should reach to Dr. V. Srinivasan, Secretary General AROI, by 31 August 2024. HOD-Radiation Oncology, MIOT International Hospital, No.4/112, Mount Poonamallee Road, Manapakkam, Chennai- 600089, TN, Mob : 9841022366, E-mail: secretaryaroi@gmail.com , vsrinivasan09@gmail.com

Dr. Manoj Gupta
President AROI

Dr. V Srinivasan
Secretary General AROI

Technical advances in Radiotherapy in Cancer management
"Hobson's choice or Horned dilemma"

Dr. Rakesh Kapoor
Professor & Head Unit-II,
Department of Radiotherapy & Oncology, PGIMER, Chandigarh
Founder Director Homi Bhabha Cancer Hospital & Research Centre (Punjab) (Unit of TMC, Mumbai), DAE. Govt. of India
President G.I. Oncology Society of India
Chairman Indian College of Radiation Oncology (ICRO)
Secretary General, World NCD Federation

The incidence of cancer continues to rise globally, posing a significant challenge to healthcare systems worldwide. It is responsible for nearly 10 million deaths in 2020 alone and accounting for approximately one in six deaths globally.

According to the World Health Organization (WHO), the incidence, prevalence and mortality in cancer (both male and female) have shown increasing trends as per GLOBOCAN 2022 data (Figures 1 and 2).

The site-wise incidence of various cancers shows that lung cancer is the highest followed by breast, colorectal, prostate etc. Also, the highest mortality is seen in lung cancer patients as per the GLOBOCAN data (Figures 3 and 4). Despite these alarming numbers, advancements in cancer treatment have led to improvements in survival rates and outcomes. Presently, there are various modalities of cancer treatment, including Radiation Therapy, Surgery, Chemotherapy, Immunotherapy, Vaccines and Targeted treatments. Each treatment modality has its benefits and side effects and has contributed to improving local control as well as overall survival in the management of various cancers. In certain cancers, the treatments have contributed to the cure rates of more than 5-10 years, which has led to an increased survivorship in patients of cancer.

Radiotherapy has played a pivotal role in the management of various malignancies. Statistics reveal that radiotherapy is utilized in approximately 70%-80% of all cancer cases, either as a primary treatment modality or in combination with surgery and/or chemotherapy. This can be used as a 1) Primary modality, 2) Adjuvant, 3) non-adjuvant/concurrent and 4) palliative. The effectiveness of radiotherapy is evident in its impact on cure rates and long-term survival. For example, in cancers such as breast cancer, early-stage treatment with radiotherapy has contributed to cure rates exceeding 90% in some cases. Similarly, in prostate cancer, radiotherapy has significantly improved survival rates, with 5-year survival exceeding 95% in localized disease. The success of radiotherapy exceeds to other malignancies as well like cervical cancer, anal canal and head and neck cancers. These advances in the treatment require a plethora of initial advanced Radiological and immuno-pathological investigative workup which may become mandatory in radiation treatment planning of patient-specific situations.

	Males	Females	Both sexes
Population	3 972 735 747	3 912 335 034	7 885 070 781
Incidence*			
Number of new cancer cases	10 311 610	9 664 889	19 976 499
Age-standardized incidence rate	212.6	186.3	196.9
Risk of developing cancer before the age of 75 years (cum. risk %)	21.8	18.5	20.0
Top 3 leading cancers (ranked by cases)**	Lung Prostate Colorectum	Breast Lung Colorectum	Lung Breast Colorectum
Mortality*			
Number of cancer deaths	5 430 284	4 313 548	9 743 832
Age-standardized mortality rate	109.8	76.9	91.7
Risk of dying from cancer before the age of 75 years (cum. risk %)	11.4	8.0	9.6
Top 3 leading cancers (ranked by deaths)**	Lung Liver Colorectum	Breast Lung Colorectum	Lung Colorectum Liver
Prevalence*			
5-year prevalent cases	25 747 272	27 756 915	53 504 187

Figure 1: Incidence, prevalence and mortality due to cancer in both males and females. [1]

Technical advances in Radiotherapy in Cancer management

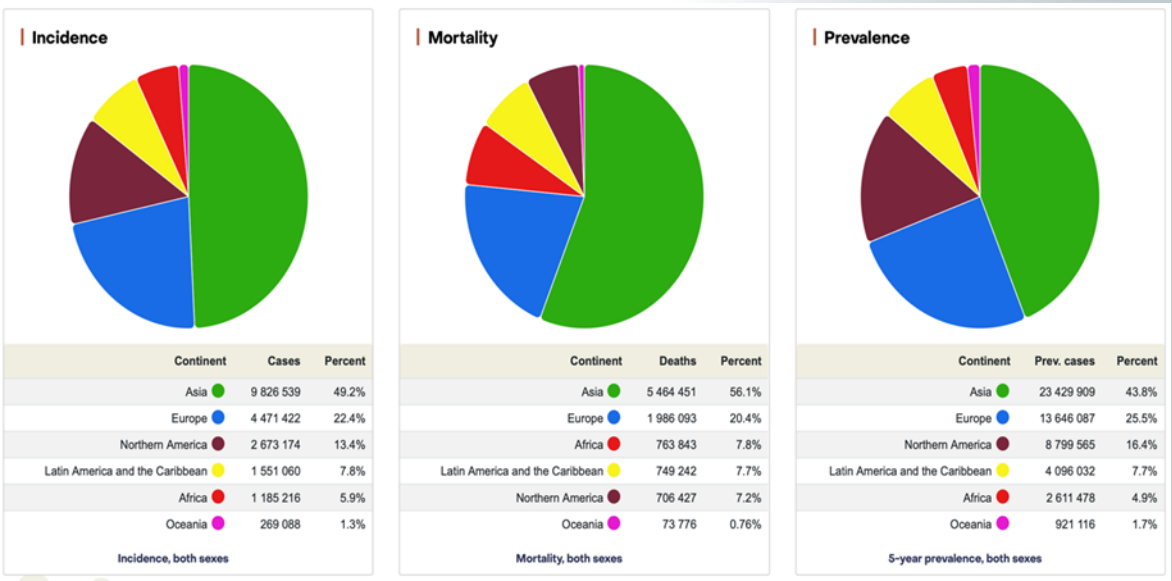


Figure 2: Cancer incidence, prevalence and mortality worldwide [2]

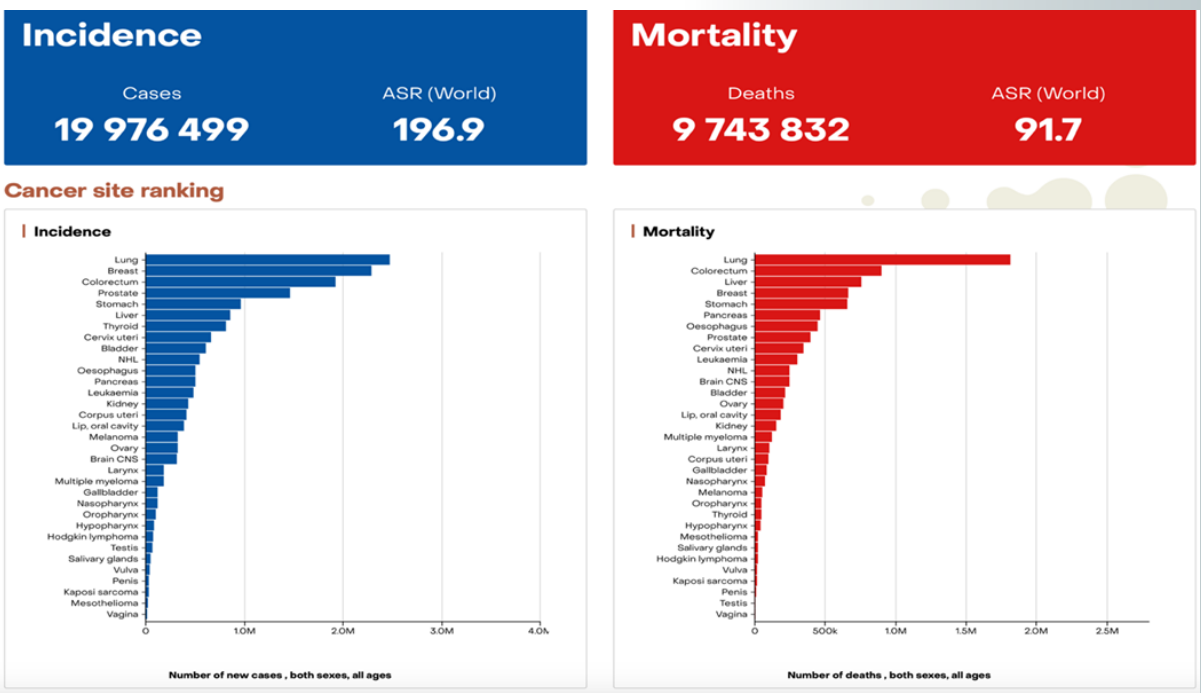
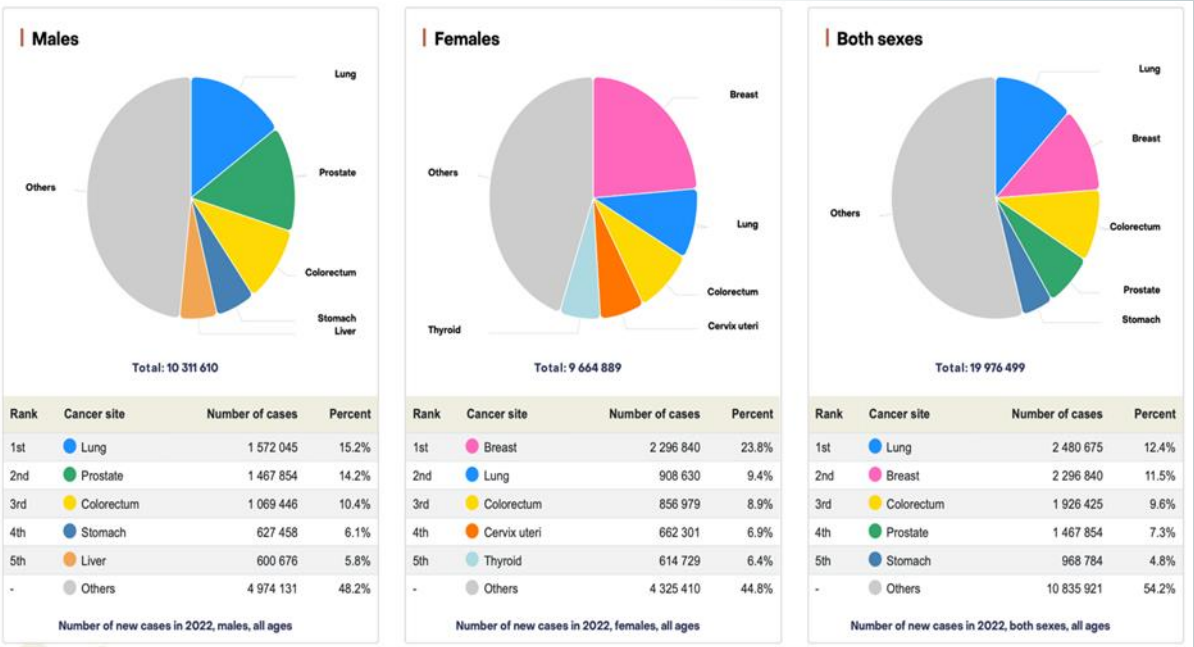


Figure 3: Site-wise incidence and mortality of cancer as per GLOBOCAN 2022. [3]

Technical advances in Radiotherapy in Cancer management



Rank	Cancer site	Number of cases	Percent
1st	Lung	1 572 045	15.2%
2nd	Prostate	1 467 854	14.2%
3rd	Colorectum	1 069 446	10.4%
4th	Stomach	627 458	6.1%
5th	Liver	600 676	5.8%
-	Others	4 974 131	48.2%

Number of new cases in 2022, males, all ages

Rank	Cancer site	Number of cases	Percent
1st	Breast	2 296 840	23.8%
2nd	Lung	908 630	9.4%
3rd	Colorectum	856 979	8.9%
4th	Cervix uteri	662 301	6.9%
5th	Thyroid	614 729	6.4%
-	Others	4 325 410	44.8%

Number of new cases in 2022, females, all ages

Rank	Cancer site	Number of cases	Percent
1st	Lung	2 480 675	12.4%
2nd	Breast	2 296 840	11.5%
3rd	Colorectum	1 926 425	9.6%
4th	Prostate	1 467 854	7.3%
5th	Stomach	968 784	4.8%
-	Others	10 835 921	54.2%

Number of new cases in 2022, both sexes, all ages

Figure 4: Top 5 most frequent cancers in both males and females. [4]

The incidence of cancer continues to rise globally, posing a significant challenge to healthcare systems worldwide. It is responsible for nearly 10 million deaths in 2020 alone and accounting for approximately one in six deaths globally.

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The site-wise incidence of various cancers shows that lung cancer is the highest followed by breast, colorectal, prostate etc. Also, the highest mortality is seen in lung cancer patients as per the GLOBOCAN data (Figures 3 and 4). Despite these alarming numbers, advancements in cancer treatment have led to improvements in survival rates and outcomes. Presently, there are various modalities of cancer treatment, including Radiation Therapy, Surgery, Chemotherapy, Immunotherapy, Vaccines and Targeted treatments. Each treatment modality has its benefits and side effects and has contributed to improving local control as well as overall survival in the management of various cancers. In certain cancers, the treatments have contributed to the cure rates of more than 5-10 years, which has led to an increased survivorship in patients of cancer.

Radiotherapy has played a pivotal role in the management of various malignancies. Statistics reveal that radiotherapy is utilized in approximately 70%-80% of all cancer cases, either as a primary treatment modality or in combination with surgery and/or chemotherapy. This can be used as a 1) Primary modality, 2) Adjuvant, 3) non-adjuvant/concurrent and 4) palliative. The effectiveness of radiotherapy is evident in its impact on cure rates and long-term survival. For example, in cancers such as breast cancer, early-stage treatment with radiotherapy has contributed to cure rates exceeding 90% in some cases. Similarly, in prostate cancer, radiotherapy has significantly improved survival rates, with 5-year survival exceeding 95% in localized disease. The success of radiotherapy exceeds to other malignancies as well like cervical cancer, anal canal and head and neck cancers. These advances in the treatment require a plethora of initial advanced Radiological and immuno-pathological investigative workup which may become mandatory in radiation treatment planning of patient-specific situations.

However, as with any treatment, it comes with its own set of benefits and potential side effects. Due to fear of such side effects (radiation-induced toxicity to surrounding healthy tissues) many times the patients have left treatment mid-way leading to poor outcomes. This presents patients with a complex decision-making process reminiscent of "Hobson's choice" or a "Horned dilemma". This dilemma is particularly pronounced in cases where the benefits of radiotherapy must be weighed against the risk of long-term complications and financial burden.

Despite these challenges, the landscape of radiotherapy has undergone remarkable technological advancements, ushering in a new era of precision Radiation Oncology and reduced toxicity and improved quality of life of patients post-treatment.

Technical advances in Radiotherapy in Cancer management

Artificial intelligence and artificial intelligence-based applications have made a paradigm shift in the practice of modern medicine from “clinical skills” based practice to radiology-dependent imaging-based practices. Radiology-based tests have entered all stages in the treatment algorithms of nearly all diseases. This has made the clinicians heavily dependent on radiology and imaging results, leading to a large number of radiology tests being ordered by the clinicians. The recent developments in radiology machines, such as CT and MRIs, have significantly decreased the scanning time. The CT machine manufacturers have already started talking about sub-second scanning techniques for the whole body. These advancements are crucial in the context of cancer treatment, especially with Radiation therapy where precise imaging is essential for accurate treatment and planning.

There is a new term called Radiomics which extracts information from routine medical images and, in the process, creates large databases of quantitative data, also known as “Big Data”. These data need to be uniform as far as the imaging and reconstruction parameters are concerned. This uniformity ensures that the algorithms can work in such a fashion so that the subtle differences in the images are easily picked up. The creation of this massive database needs very high-speed processors and data processing units. Another challenge in data processing is the sharing of data across multiple sites [5]. As is the case with other biomarker studies, radiomics also might progress slowly due to suboptimal study designs and inherent technical complexity involved [6]. There are various steps involved in radiomics data collection and interpretation. Radiomics-based biomarker qualification also requires prospective multicentric trials where the biomarker is one of the primary endpoints for large-scale commercial application and validation of this technology [7]. Radiomics uses the concept that any abnormal thing contains a lot of various kinds of measurable entities such as texture, size, and shape. These measurable variables are then evaluated by complex computing operations and algorithms [8]. However, the integration of radiomics in radiotherapy has the potential to enhance treatment personalization, leading to more effective and tailored cancer therapies.

These recent advancements in cancer research have created a niche area where the latest tools have not only hastened the early diagnosis of cancer but also assisted in optimal cancer-specific targeted therapies for better patient outcomes. These tools are ever-evolving, and more such tools are expected shortly, which would decrease the turnaround time of diagnosing this dreaded disease and also decrease the overall suffering of cancer patients. Techniques such as Volumetric Modulated Arc Therapy (VMAT), Stereotactic Body Radiation Therapy (SBRT), and Stereotactic Radiosurgery (SRS) have revolutionized treatment delivery. The inclusion of various newer techniques of quality assurance with DIBH/SGRT/fiducial-based image guidance offers highly conformal dose distributions, sparing surrounding healthy tissues and organs from unnecessary exposure [9]. SBRT and SRS enable precise targeting of tumors with high doses of radiation in fewer fractions, enhancing treatment efficacy while minimizing side effects. The integration of advanced technologies and techniques like SBRT and SRS has expanded the scope of precision radiotherapy, making it an indispensable component of modern cancer management protocols.

While the challenges of radiotherapy-related side effects are real, the landscape is evolving positively with technological advancements and tailored approaches. By embracing these advancements and fostering patient-centred care, we can navigate the "Hobson's choice" and optimize a course towards better cancer care and survival.

The treatment journey, with its empowering access to information with complexities in decision-making (particularly in the field of Radiotherapy), resembles more of a Horned Dilemma from the patient's perspective. However, for healthcare workers, this journey represents a Hobson's choice, where they must carefully weigh the available options and make decisive choices based on patient needs, evidence-based practices, and ethical and financial considerations.

References

1. Population data, GLOBOCAN 2022, https://gco.iarc.who.int/media/globocan/factsheets/cancers/39-all-cancers-fact-sheet.pdf
2. The Global Cancer Observatory, https://gco.iarc.who.int/media/globocan/factsheets/populations/900-world-fact-sheet.pdf
3. International Agency for Research on Cancer, Cancer Today, WHO, https://gco.iarc.fr/today/en/fact-sheets-populations#global
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Tapping the potential of Liquid Biopsy: Harnessing Urine for Advancing Cancer Diagnosis and Treatment with Focus on Trans-renal circulating tumor DNA

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Department of Radiation Oncology
Himalayan Institute of Medical Sciences
Dehradun

Dr. Ajeet Kumar Gandhi
Additional Professor
Department of Radiation Oncology
Dr Ram Manohar Lohia Institute of Medical Sciences
Lucknow

In recent decades, there has been a remarkable surge in the diversity of therapies available for treating both early and advanced-stage cancers (1). Alongside this expansion, there has been a growing emphasis on tailoring treatments to individual patients, driving the need for molecular profiling techniques to guide precision medicine effectively (2). The term "Liquid biopsies" refers to the examination of biomarkers present in bodily fluids, primarily blood, offering valuable insights in to both the patient's condition and the underlying cancer (3). This method presents a less invasive alternative to traditional needle biopsies and is particularly beneficial for sampling tumours in challenging anatomical locations (4). Liquid biopsy methods address issues like sample representativeness, which can be problematic with small tissue biopsies (5). While most research has focused on blood-based biomarkers such as circulating tumour DNA (ctDNA), circulating tumour cells (CTCs) and circulating microRNAs, recent studies have revealed the presence of these cancer indicators in non-blood fluids like cerebrospinal fluid, urine, pleural fluid and peritoneal fluid (6). This broader interest in liquid biopsies from various sources is supported by advancements in ctDNA detection and analysis technologies (7). This review examines the potential of Urine as a source of ctDNA and its unique or complementary role in oncology, alongside the challenges involved in translating these alternative biomarker assays from the laboratory to clinical practice.

What is Liquid Biopsy?

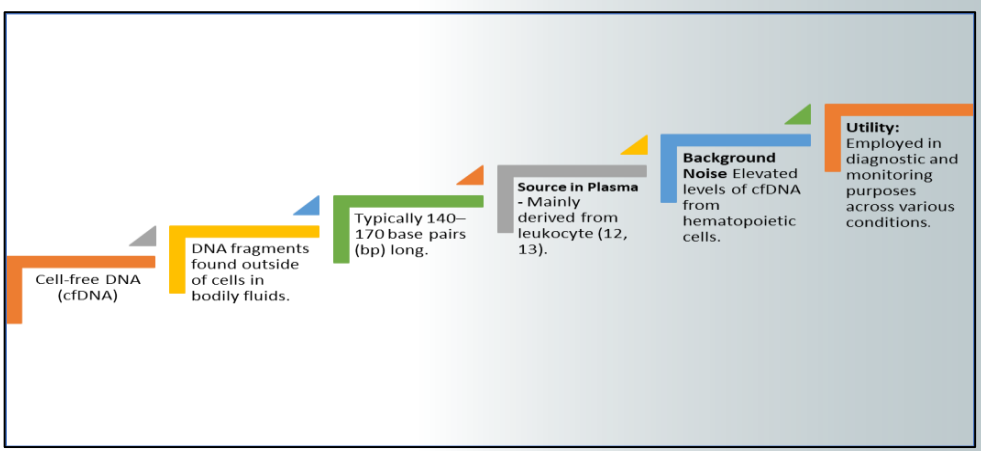
Cancer biomarkers are crucial in precision medicine, aiding in treatment planning, monitoring responses, and detecting primary or recurrent cancers (8). The analysis of bodily fluids for cancer cells or their derivatives, known as "liquid biopsy," typically involves identifying and examining CTCs or ctDNA released into the bloodstream by dying cancer cells (9, 10). This non-invasive method provides valuable insights into a patient's cancer, including tumor genetic diversity, treatment response evaluation, and identification of resistance mechanisms (11).

Despite the success of blood-based liquid biopsy, challenges like limited blood volume, difficulty in obtaining samples frequently for monitoring, and access issues for patients with limited clinical facilities exist. Given that ctDNA levels are often low in plasma, standard blood sampling volumes may not detect it in many cancer patients.

Tapping the potential of Liquid Biopsy

Monitoring ctDNA biomarker kinetics at high temporal resolution could improve clinical predictions, emphasizing the need for equitable healthcare access. Figure 1 summarizes definitions and assay considerations for cfDNA and ctDNA.

An emerging alternative approach in cancer research involves using urine as a biofluid specimen for liquid biopsy, especially for cancers originating from various organs, not limited to the urinary tract (e.g., bladder cancer). Cancers in the urinary tract can release cancer cells or tumor DNA directly into urine, a phenomenon known as "trans-renal" transit of DNA enabling access to ctDNA from distant organs. Fragments of cell-free DNA (cfDNA), including ctDNA fragments, present in the blood, filter through the kidney's glomerular filtration system into urine. These resulting ctDNA fragments in urine, termed trans-renal ctDNA (TR-ctDNA), have the potential to detect ctDNA from cancer in virtually any organ, provided ctDNA is present in plasma and capable of transiting into urine. The trans-renal passage of ctDNA offers a promising non-invasive liquid biopsy approach with wide-ranging potential applications. Figure 2 summarizes the process of derivation of TR-ctDNA. This review explores the current understanding of trans-renal DNA biology, existing studies on TR-ctDNA as a cancer biomarker, its future clinical prospects, particularly in the Indian context, and the current gaps in knowledge.



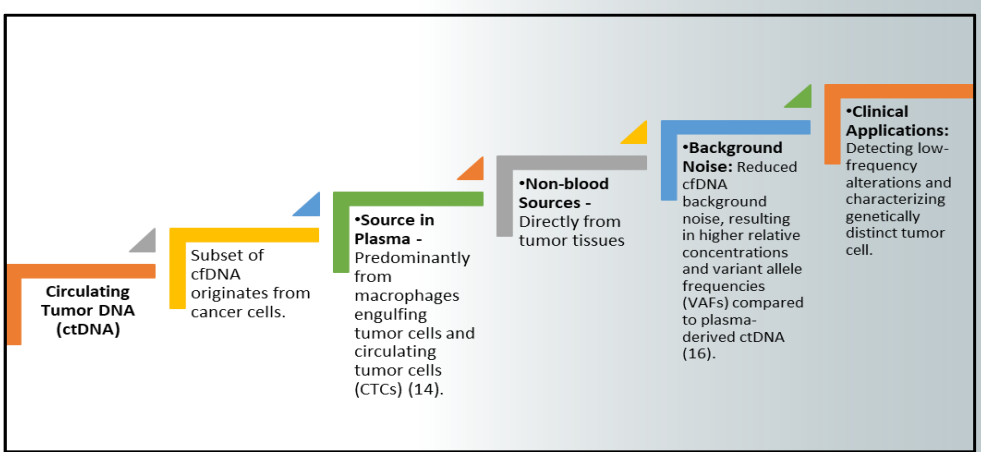


Figure 1: Definitions and Assay Considerations for cfDNA and ctDNA

Tapping the potential of Liquid Biopsy

Urinary ctDNA: Transrenal Tumor DNA

The recognition of DNA presence in urine and its potential clinical significance dates to the early 2000s (23). Urine emerges as a promising reservoir of ctDNA, allowing entirely non-invasive sampling (24).

ctDNA in urine comprises two distinct fractions:

- Firstly, trans renal tumor DNA (trtDNA) originates from plasma and traverses into urine via glomerular filtration, typically limited in size (25). The low concentration of trtDNA historically posed challenges for analysis, though modern techniques like NGS have partly alleviated these issues (26).
- Secondly, tumor cells shedding directly from the urinary tract contribute to a larger molecular weight fraction (27). The primary advantage of urinary ctDNA analysis lies in its non-invasive sampling, simplifying serial sampling and enabling home-based collection, especially pertinent in the era of remote healthcare post-COVID-19 (28).

Urine samples may also exhibit lower susceptibility to ctDNA dilution compared to blood, though cfDNA from urinary tract epithelia may pose similar challenges (29,30).

Despite these advantages, urinary ctDNA assays lag plasma-based counterparts, with certain limitations warranting attention.

- Firstly, trtDNA's passage through the glomerulus restricts fragment size.
- Secondly, variability in glomerular filtration rates, particularly in patients undergoing systemic anticancer therapy, impacts urinary trtDNA accumulation rates.
- Urine sample preservation and optimized storage conditions are vital due to unpreserved DNA's short half-life (27,31).
- Additionally, the high volume of voided urine presents technical challenges for cfDNA isolation protocols.

Figure 3 and 4 summarizes the advantages and disadvantages of the TR-ctDNA.

Clinical implication of TR-ctDNA for various non-urinary tract cancers

Some of the earlier studies demonstrated the presence of mutant K-RAS DNA in urine samples of patients with colorectal cancers using PCR analysis. Subsequently, studies also reported urinary excretion of circulating EBV DNA in patients of nasopharyngeal cancers, EGFR/KRAS mutations as TR-ctDNA in non-small cell lung cancer, T790M mutations in non-small cell lung cancer etc. Another study recently analysed the TR-ctDNA in patients of high grade glioma and several studies are evaluating TR-ctDNA for various cancer sites like breast cancer, liver cancer, pancreatic cancer and gastric cancer.

Scope in Indian Scenario

In India, urine-based ctDNA analysis shows promise in transforming cancer diagnostics and treatment approaches (28). Non-invasive methods like urine liquid biopsies could democratize cancer screening and monitoring, addressing challenges in accessing healthcare facilities and the country's diverse socioeconomic landscape (29). With the ability to detect ctDNA from various cancer types, including those beyond the urinary tract, urine assays could provide a cost-effective and accessible solution for early cancer detection and treatment monitoring. Home-based urine sample collection and centralized laboratory testing align with the trend of remote healthcare, especially relevant in India's geographically diverse population. However, realizing the potential of urine ctDNA analysis requires efforts to standardize protocols, optimize assays, and validate biomarkers for different cancer types prevalent in India. Addressing infrastructure gaps, ensuring affordability, and raising awareness among healthcare providers and the public are crucial for integrating urine-based liquid biopsies into routine clinical practice in India

Tapping the potential of Liquid Biopsy

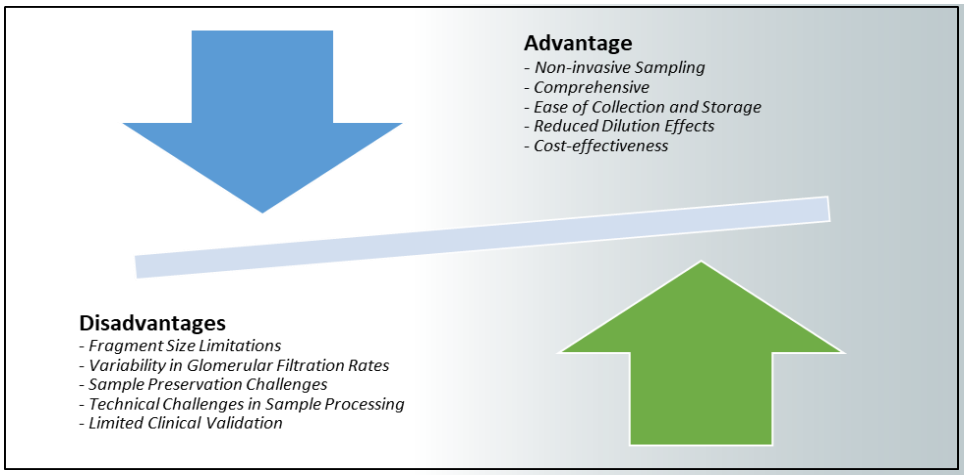


Figure 2: Model of formation of trans-renal ctDNA

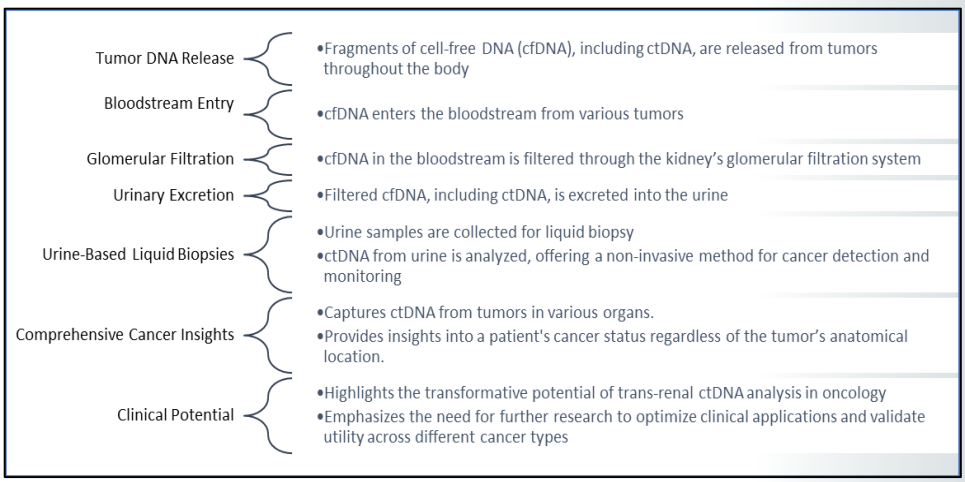


Figure 2: Advantages and Disadvantages of Trans-renal cell-free DNA (cfDNA)

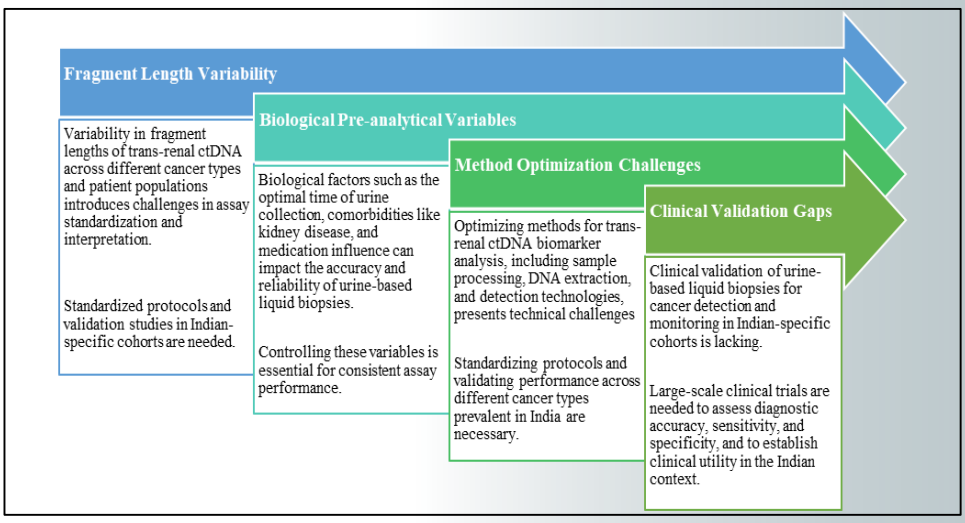


Figure 2: Limitations of Trans-renal cell-free DNA (cfDNA) in Indian Scenario

Tapping the potential of Liquid Biopsy

Conclusion

In conclusion, while challenges remain in bringing TR-ctDNA testing into widespread clinical use, research in trans-renal cell-free DNA has gained momentum over the past two decades. With its potential for broad clinical impact and accumulating evidence supporting its efficacy across diverse cancer types, TR-ctDNA represents a promising approach to liquid biopsy. Well-designed clinical trials demonstrating meaningful benefits to patients will be crucial before non-blood ctDNA assays can be broadly implemented clinically.

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15th Annual Conference ISNOCON

4 – 7 April 2024
Chandigarh

Update from
Dr. Narendra Kumar

The Department of Radiotherapy & Oncology at PGIMER, Chandigarh, in collaboration with oncologists from the Chandigarh region, organized the highly anticipated "ISNOCON 2024" conference. This remarkable event was held in association with the Indian Society of Neuro-Oncology (ISNO) under the aegis of the Association of Oncologists for Brain Metastasis (AOBM). The conference took place from April 5-7, 2024, at Hotel Radisson RED Chandigarh Mohali; preceding the main event, two insightful pre-conference workshops on "Stereotactic Radiosurgery" and "Neuropathology" were conducted on April 4, 2024, at the prestigious PGIMER, Chandigarh, one of India's premier institutes of education and learning.

Under the visionary guidance of ISNO President - Dr. Neelam Shirsat, Vice-President - Dr. Atul Goel, General Secretary - Dr. Tejpal Gupta, and Chair Advisory Council - Dr. Rakesh Jalali, the conference embraced the thought-provoking theme of "Paradigm Shift in the Management of Brain Metastasis" and "Contemporary Treatment Algorithms for Meningiomas & Debatable Issues in Gliomas." The organizing chairmen, Prof. (Dr.) Ashis Pathak and Dr. Vinod Nimbran ably steered the conference, supported by the blessings of esteemed patrons Prof. G.K. Rath and Dr. S.K. Gupta.

The conference highlighted the latest breakthroughs in surgical techniques, such as minimally invasive procedures and stereotactic radiosurgery, offering targeted treatment with reduced risks to surrounding healthy brain tissue. Additionally, it delved into the pivotal role of systemic therapies, including chemotherapy, immunotherapy, and targeted molecular therapies, in effectively managing brain metastasis while minimizing adverse effects. Furthermore, the conference underscored the importance of staying abreast of the latest advancements in treating meningiomas and gliomas, two common types of brain tumors.

ISNOCON 2024 provided an unparalleled platform for neuro-oncologists, neurosurgeons, radiation oncologists, medical oncologists (both pediatric and adult), neuropathologists, neuroradiologists, neuroscientists, general practitioners, residents, and allied healthcare professionals to engage in a rich exchange of knowledge, share best practices, and collaborate on advancing the field of neuro-oncology over the course of two and a half days.

The conference featured two thought-provoking orations, Professor Subimal Roy Oration on “Perspective of WHO classification of CNS tumors: discovery of novel glioneuronal tumors and lesson learned from my Mentor” by Dr. Takashi Komori, Director of the Department of Laboratory Medicine and Pathology (Neuropathology) at the Tokyo Metropolitan Neurological Hospital, Japan and Ab Guha oration on “Brain Metastasis: Current Guideline, Clinical Trials, survival and Prognostication” by Dr. Paul Sperduto, Adjunct Professor at the Department of Radiation Oncology, Duke Medicine, Durham, NC, USA.

A special highlight of the event was the ISNO Presidential Oration and ISNO President's Award Session. The outgoing ISNO President, Dr. Neelam Shirsat, a renowned basic scientist with 25 years of research experience at the Tata Memorial Centre, Mumbai, delivered the insightful ISNO Presidential Oration. The ISNO President's Award Session recognized outstanding contributions to the field, bestowing honors upon Dr. Debnarayan Dutta for 'Outstanding Work in Neuro-Oncology' and Dr. Adhithyan for 'Best Clinician Researcher,' as selected by an eminent ISNO jury.

The conference fostered a dynamic exchange of knowledge through paper presentations from postgraduate students, senior residents, and junior faculty members, spanning three categories: 'Clinical Neuro-Oncology,' 'Basic/Translational Neuro-Oncology,'

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Update from
Dr. Narendra Kumar

and 'Teenage & Young Adult (TYA) Neuro-Oncology.' From the 95 abstracts received, 21 were selected for oral presentation, with the winners in each category receiving prestigious awards from the central body of ISNO. All oral paper presenters were awarded the 'ISNO Travel Grant' of Rs. 5000/- each, while the winner in the "Teenage & Young Adult (TYA) Neuro-Oncology" category received the Uma Chitalkar Gold Medal.

The remaining abstracts were evaluated in the poster category, and the outstanding contributions were suitably rewarded by the esteemed judges. Moreover, an engaging and interactive Neuro-Onco quiz added to the conference's vibrancy, with eight teams from various institutes participating in the preliminary round and the top five teams advancing to the final round.

The inaugural ceremony, held on the evening of April 5, 2024, was a grand affair, graced by the esteemed presence of the Chief Guest - Prof. G.K. Rath, Ex-Chief & Head of the Dr. B.R. Ambedkar Institute Rotary Cancer Hospital and Ex-Head of the National Cancer Institute, Jhajjar, AIIMS, Delhi. Prof. Rath shared his invaluable insights on the evolving landscape of oncology in India and the nation's remarkable strides in keeping pace with global advancements in technology and medical breakthroughs.

The distinguished Guests of Honor were Prof. S.C. Sharma, Professor & Ex-Head at PGIMER, Chandigarh, and Prof. S.K. Gupta, Head of the Department of Neurosurgery at PGIMER, Chandigarh. The event was further graced by the esteemed presence of ISNO President - Dr. Neelam Shirsat, ISNO Vice-President - Dr. Atul Goel, ISNO General Secretary - Dr. Tejpal Gupta, ISNO Chair Advisory Council - Dr. Rakesh Jalali, ISNOCON 2024, Member National Medical Council Dr Vijay Kumar, Organizing Chairman - Prof. (Dr.) Ashis Pathak and Dr. Vinod Nimbran, ISNOCON 2024 Organizing Secretary- Prof. Narendra Kumar, and Co-Organizing Secretary - Dr. Pankaj Kumar. The ISNO office bearers shared their invaluable experiences, tracing the society's journey from its inception in 2009 to its present-day eminence.

As the Organizing Secretary of ISNOCON 2024, Dr. Narendra Kumar expressed his profound gratitude for the overwhelming support and well-wishes received from all quarters. On behalf of the Organizing Committee, he extended his heartfelt appreciation to his seniors, dignitaries, faculty members, colleagues, delegates, and friends for their active participation and invaluable contributions, collectively making the conference a resounding success.

46th ICRO-Sun PG Teaching Program

20 – 21 April 2024

Jawaharlal Nehru Cancer Hospital & Research Centre, Bhopal

Update from
Dr. Gautam Sharan

Under the aegis of Association of Radiation Oncologists of India (AROI), and Indian College of Radiation Oncology (ICRO) with an unconditional educational support from Sun Oncology, the 46th PG teaching program on "Management of Radiation Toxicities" was successfully conducted at the seminar hall of Jawaharlal Nehru Cancer Hospital & Research Centre, Bhopal on 20th & 21st April, 2024.

Management of radiation toxicities remains one of the neglected topics in post-graduation training in radiation oncology, yet one of the most important parameters of quality of life index. A poorly managed patient is frequently the cause of unplanned breaks, absenteeism, and treatment default. Among those who complete their treatment land up with painful acute toxicities, and distressing long term side effects giving both the treating physician and the speciality of radiation oncology a gloomy name.

It is with this premise that the topic was chosen as one of the themes for this year and widely endorsed by executive committee and other state AROI office bearers. The idea of the teaching course was to prepare the trainees for their clinical practice and PG examination by guiding through the basic physics, radiobiology, and various subsites toxicity management through dedicated lectures, personal interaction, and by providing educational material. Eminent faculties from across India and more than 60 students participated. The whole session was Zoom telecasted for the participating students of neighboring and FARO member countries.

The list of faculties includes (in alphabetical order) Dr Charu Garg (Max, Saket), Dr Deepika Malik (SAIMS, Indore), Dr Indu Bansal (Paras, Gurugram), Prof Madhup Rastogi (RMLIMS, Lucknow), Prof Manish Gupta (AIIMS, Bhopal), Prof Manoj Gupta (AIIMS, Rishikesh), Dr Mukti Mukherji (Apollo, Kolkata), Prof Neeraj Jain (SGDUHS, Amritsar), Prof Rakesh Kapoor (PGI, Chandigarh), Dr Ritika Harjani Hinduja (Hinduja, Mumbai), Dr Saikat Das (AIIMS, Bhopal), Prof Satyajit Pradhan (TMC, Varanasi), Prof S N Senapati (AHRCC, Cuttack), and Prof Virendra Bhandari (SAIMS, Indore). Dr Rajesh Vashisht and Dr V Srinivasan were present as well and actively participated in smooth conduction of the course over one and a half days. Mr. Arvind Suri, Mr. Sarit Hota, and their excellent camaraderie aptly represented the Sun Oncology's close relationship with AROI and their whole-hearted support to the radiation oncology community.

Inauguration was addressed by Mrs Divya Parashar, Chairwoman of JNCHRC, Bhopal and she was joined by the officials of AROI and ICRO for the lamp lighting ceremony.

As always, the star attraction of the program was the much coveted ICRO quiz with a nail-biting finish for the second position between Dr Rohit Golla (JNCHRC, Bhopal) and Dr Prithak Madan (MGMMC, Indore) after a tie. The list of winners is as under:

First position: Dr Pratheesh C, Max Superspeciality Hospital, New Delhi

Second position: Dr Rohit Golla, Jawaharlal Nehru Cancer Hospital, Bhopal

AROI and ICRO congratulate the winners and all the participants for their active participation and sincere efforts.

The accommodation, food, and social interaction were enjoyed by all the participants with much fervor. Their active participation has encouraged the AROI and ICRO to conduct such programs on various diverse topics more frequently and as per the students' requirement and proactive interaction. Students are encouraged to write email to secretaryicro@gmail.com with their suggestions for the upcoming programs in 2025 and 2026. Their opinions are much valued and of prime importance for AROI

46th ICRO-Sun PG Teaching Program

20 – 21 April 2024

Jawaharlal Nehru Cancer Hospital & Research Centre, Bhopal

Update from
Dr. Gautam Sharan

2ND AROI-ESTRO HEAD & NECK TEACHING COURSE

6 – 8 June 2024
Chennai

Update from
Dr. V Srinivasan & Dr. Sarbani Ghosh Laskar

2nd AROI-ESTRO H & N Teaching course was organized by the Department of Radiation Oncology at MIOT International, Chennai. It was held from 6th – 8th Jun 24 with the theme of "Oropharynx & Nasopharynx" under the leadership of AROI Course Director Dr Sarbani Ghosh Laskar, ESTRO Course Director Dr Jesper Grau Eriksen & Course Coordinator & Secretary General of AROI Dr V. Srinivasan.

The course aim was to create a basic understanding of evidence- based management of H & N Cancers particularly those of Oropharynx & Nasopharynx, incorporating the latest advancements with contouring & planning sessions which helped participants enhance their knowledge & hone their IMRT/ IGRT planning techniques.

The conference spanned three days, with the first day involving Clinical & Imaging work up, management, Radical non-surgical options of OPSCC along with PORT planning followed by hands on training focusing on Brachytherapy, Primary RT & EBRT & discussion on staging, imaging, management & systemic therapy of Nasopharyngeal cancer (NPC).

The course had record breaking 126 registrations which consisted 108 Indian delegates, 10 foreign delegates from Malaysia, Kenya, Mexico, Australia & Kuwait & 8 SAARC countries delegates.

The course ended with a vote of thanks to all participants, AROI & ESTRO Faculties by Dr V Srinivasan, Course coordinator of 2nd AROI-ESTRO H & N Course.

We extent our heartfelt gratitude to all the participants, speakers & organizers for their invaluable contributions to this memorable event.

Endometrial Cancer's Molecular Profile

Dr. Kanhu Charan Patro
Prof. and HOD,
Dept. of Radiation Oncology
Mahatma Gandhi Cancer Hospital and Research Institute
Vishakhapatnam, Andhra Pradesh

Dr. Ajitesh Avinash
Registrar,
Dept. of Radiation Oncology
SUM Ultimate Medicare,
Bhubaneswar, Odisha

Endometrial cancer's Molecular Profiling,
Is now an integral part of Risk Stratifying.
Molecular profiling has predictive significance,
Adjuvant treatment cannot ignore its influence

If endometrium is not molecularly classified,
Designate it as NOS histologically classified.
Attach suffix "m" to define the stage,
If molecular profiling is in your cage

P53, dMMR, NSMP and POLE mutation,
All these will help in adjuvant treatment decision.
POLE mutation downgrades the staging,
P53 mutation upgrades the staging

POLE has excellent prognosis while P53 mutation has worse,
NSMP and dMMR have intermediate course.
Molecular and histological factors together define the risk,
As low, low-intermediate, high-intermediate and high risk

POLE proofreading has hyper-mutation,
Causes more neo-antigen formation.
That leads to tumour suppressor function,
So, it is under low-risk stratification

PTEN, mTOR, AKTP,13K signalling pathway,
Are together called (NSMP) nonspecific molecular pathway

NSMP are staged as intermediate prognosis,
Consider post-op vaginal brachy in case of its diagnosis

dMMR does DNA repair problematization,
That helps in cancer formation.
At the same time, it is bad for tumour formation,
As it enhances the effect of radiation,
Also by DNA repair inhibition,
So, it is under intermediate stratification

p53 is a tumour suppressor gene,
It's mutation leads to an abnormal scene,
p53 mutation needs aggressive treatment,
Chemoradiation is therefore it's management

Histological analysis was done in 1,2,3 PORTEC,
Molecular analysis in 4 and RAINBO PORTEC.
We are waiting for
Retrospective molecular analysis from older PORTEC,
Prospective analysis from 4a and RAINBO PORTEC.

Stage one and two are changed by molecular profiling,
While it did not influence the third and fourth staging.
Profiling in stage one and two is for treatment decision,
While for stage three and four, it is done for data collection

Presence of multiple mutations creates confusion,
This category is under evaluation.
Molecular profile can be done on a biopsy specimen,
No need to repeat it on hysterectomy specimen

Obituary

Dr. Nagarjun Reddy
AROI LM- 131
D.O.B- 1st April 1956
D.O.D- 14th April 2024

After completing MBBS from Osmania University, Hyderabad, Dr. Nagarjun Reddy obtained his master's degree in MD (Radiotherapy) from M N J Cancer Hospital, Osmania University in 1984. Since then, he started his life journey as a reputed Assistant Prof. M N J Cancer Hospital . First and foremost, he worked He worked as Prof. & HOD in the same Hospital till 2014. Also later on he became the Director of MNJIO Cancer Centre Hyderabad. and while progressing he has made several important contributions in his life's journey in the field of Radiotherapy. And finally, in the last phase of his life, he worked as a Senior Consultant in Basavatarakan Indo American Cancer Hospital Hyderabad.

In the field of Medical, Research & Education Dr. Nagarjun Reddy's contribution at the global level has been of high quality and commendable. He was involved in conducting Cancer detection camps and Awareness programs. Also he was actively involved in Teaching Medical Graduates at Osmania Medical College. He leaves behind a legacy of kindness, selflessness, humour & Balance in life.

Dr. Rakesh Ranjan
AROI LM- 3208
DOD- 04-05-2024

Dr. Rakesh Ranjan, a compassionate healer and dedicated Radiation Oncologist, departed from this world unexpectedly on May 4, 2024, leaving behind a legacy of kindness and professional excellence. Graduating from Gaya Medical College and later attaining his MD from the Institute of Medical Sciences, BHU in 2020, he embarked on his journey in medicine with a mind eager to learn as a senior resident at AIIMS, Patna.

Dr. Ranjan exhibited unparalleled dedication to his craft. His calm demeanour and exceptional patient care skills earned him the admiration of colleagues and patients alike. Despite the demanding nature of his work, Dr. Ranjan approached each day with grace and compassion, touching the lives of those in need. Beyond his clinical duties, Dr. Ranjan was a dedicated academician and researcher. His passion for advancing the field of Radiation Oncology was evident in the numerous research papers he authored,

However, it was Dr. Ranjan's innate kindness and friendly nature that truly set him apart. He had a remarkable ability to connect with people on a personal level, offering comfort and reassurance in even the most challenging circumstances. His warm smile and genuine empathy brought solace to countless individuals facing difficult diagnoses and treatments.

Dr. Ranjan's sudden passing has left a profound void in the hearts of his family, friends, colleagues, and patients. Yet, his legacy of compassion, professionalism, and dedication will endure as a source of inspiration for all who had the privilege of knowing him. Your light may have dimmed too soon, but it will continue to shine brightly in the lives of those you touched. Rest in peace, dear doctor. You will be deeply missed.

Obituary

Prof. Upendra Nath Panda
DOD- 22-06-2024

It is with heavy hearts that we mourn the loss of our beloved teacher, Prof U N Panda. He was not only a senior oncologist in our state, but also a guide and mentor to countless students. He was the President of AROI Odisha state chapter and the Odisha Society of Oncology, and his contributions to the field of oncology are immeasurable. As we bid farewell to this great man, let us take a moment to reflect on his legacy and the impact he has had on all of our lives.

Prof Panda was a true leader in every sense of the word. He was a visionary who paved the way for many young minds to excel in the field of oncology. His dedication and passion towards his work inspired all of us to strive for excellence. It was under his guidance that more than hundreds of his students are now well-established in different parts of our country. He was not just a teacher, but also a friend, philosopher, and guide to all of us.

His achievements were numerous and impressive. He was not only the past President of AROI Odisha chapter but also a member of ICRO and the founder President of the Odisha Society of Oncology. Additionally, he served as the chief patron of two successful national conferences held in Odisha in 1998 and 2016. His contribution as an advisor and guide has been instrumental in many success stories. We will always be grateful for his guidance and support.

Prof Panda's journey in the field of oncology began in 1973 when he joined Acharya Harihar Regional Cancer Center as an assistant professor in Radiotherapy. He was later promoted to the position of Professor and HOD in 1985. His thirst for knowledge led him to pursue training at BARC, Bombay and also receive a WHO fellowship in cancer control. He visited many internationally acclaimed institutes in countries like UK, Germany, Sweden, and Canada. His expertise and knowledge were widely recognized, and he was a founder member and fellow of Indian College of Radiology.

Apart from his impressive career accomplishments, Prof Panda was also a respected member of various organizations like IRIA, OSO, AROI, and IMA. He played an active role in these organizations and held many prestigious positions. He was also a mentor to many post-graduate students and served as an examiner in several universities. He presented numerous papers at national and international conferences and has authored a book on cancer titled 'Vanishing Horizon.'

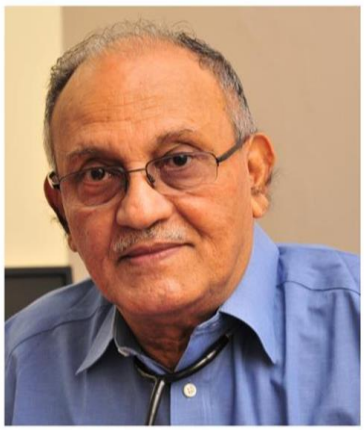
Prof Panda was not just a brilliant professional; he was also a kind-hearted person with a warm personality. He touched the lives of everyone he met with his compassion and empathy. He was always willing to lend a helping hand and share his knowledge with others. His legacy will continue to live on through the many lives he has touched and the impact he has made in the field of oncology.

As we mourn the loss of our dear teacher, let us also celebrate his life and all that he has achieved. He may no longer be with us physically, but his teachings and memories will forever be etched in our minds and hearts. We pray that his soul rests in peace, and may God give strength to his bereaved family during this difficult time.

In conclusion, Prof U N Panda will always hold a special place in our hearts as our beloved teacher, guide, and leader. We will continue to honor his legacy by striving for excellence in our work and making a positive difference in the world, just as he did. May his soul rest in peace.

Orators of AROICON 2024

Prof. M Krishnan Nair Memorial Oration



- Padmasree Prof M Krishnan Nair MD, FRCR (1939-2021)
- Finished MBBS in 1963(University of Kerala) & MD Radiotherapy in 1968(University of Punjab). Trained in Christie Manchester 1969-70. Got FRCR in 1972. Continued as Faculty in Medical College, Trivandrum.
- Founder Director, RCC , Thiruvananthapuram (1981-2003)
- One of the Founder Members of AROI
- National President AROI (1984-1986)
- Awarded Padmasree in 2001
- Had contributed significantly to Radiation Oncology, Brachytherapy, Epidemiology, Palliative medicine , Community Oncology , National Cancer Control Plan etc.

Orator – Dr. Fancis V James

- MD Radiation oncology 1986-1989. GMC, Thiruvananthapuram
- Faculty in Radiation oncology , RCC ,Thiruvananthapuram since 1990
- AROI member No 187.
- International training :Clinical Research Fellow-Institute of Cancer Research, & Royal Marsden UK : March 1996 - Feb. 1997. & Feb 2002 – April 2003.
- AROI fellowships. Leeds , Mount Vernon & University of Vienna .
- Prof of Radiation Oncology Since 2015
- HOD of Radiation Oncology since 2021
- 50 publications
- 17 International conference abstracts
- 15 projects as PI
- Fellow of ICRO

Orators of AROICON 2024

Prof. K A Dinshaw Memorial Oration

Orator – Dr. Catheryn Montgomery Yashar

Catheryn Montgomery Yashar, M.D. is a distinguished physician specializing in Radiation Oncology currently based in La Jolla, California, serving at the Moores Cancer Center, University of California, San Diego (UCSD). Dr. Yashar earned her medical degree from Northwestern University followed by Gynecologic Oncology fellowship and a Radiation Oncology residency at the University of Louisville.

She holds board certifications from numerous prestigious organizations and her clinical and academic appointments span multiple roles, including her current positions as Vice Chair of Clinical Affairs, Chief of Breast Radiation Services, and Co-director of Brachytherapy at UCSD.

Throughout her career, Dr. Yashar has received numerous accolades, such as the Castle Connolly Top Doctor Award, America's Best Doctor's Award, and various fellowships from leading medical societies. She has been recognized for her contributions to medical education and research and as an avid academician.

Dr. B. D. Gupta Memorial Oration

Orator – Prof. Santanu Pal

- MBBS, DMRT, MD (Radiotherapy),
- WHO Fellow, Clinical & Radiation Oncologist
- Present Status: Professor (Oncology), ESIC Medical College, Joka, Kolkata (posted as Part-time Senior Consultant on Contractual basis) since August 2019
- Former Affiliation: Retired as Professor (Radiotherapy), IPGME&R and SSKM Hospital, Kolkata (under WBMES) on 31st May 2019Ex-Vice President (Senior), AROI
- Ex-President, AROI – WB Chapter
- Ex-Organising Secretary, AROICON 2012, Kolkata

Congratulations

Professor M.L.B. Bhatt
Vice Chancellor
Hemwati Nandan Bahuguna Uttarakhand Medical Education University
Dehardun

Prof. M.L.B. Bhatt former head of the Radiation Oncology Department, K. G. Medical University, Lucknow joined as the Vice Chancellor, Hemvati Nandan Bahuguna Uttarakhand Medical Education University, Dehradun recently. AROI congratulates Dr. Bhatt for this new assignment and wishes best of luck in all his future endeavors. We are all proud of his distinct achievement. Earlier Dr MLB Bhatt served as the vice Chancellor of prestigious King George Medical University, Lucknow with distinction. Dr. Bhatt also served as the Head, Department of Radiation Oncology, Dr. Ram Manohar Lohia Institute of Medical Sciences, Lucknow and served as the Director, Kalyan Singh Super Speciality Cancer Institute, Lucknow in the past.

Dr. Bhatt is a distinguished medical teacher, academician and researcher. May many more laurels come his way in future. Association is proud of him.

Events to attend

AROI calendar 2024

AROI-ESTRO				
Advanced Technology Teaching Course				
AIIMS, Patna	5-8, Dec, 2024	Dr. Pritanjali Singh	9334931395	drpritanjalis@gmail.com

AROI-ICRO Sun PG Teaching Courses				
NRS Medical College, Kolkata (Clinical Trials and Cancer Statistics)	7 - 8 September 2024	Dr. Srikrishna Mandal	9830648931	mondal_srikrishna@rediffmail.com
Max Super Speciality Hospital, Bathinda (Management of Radiation Toxicities)	26-27 October, 2024	Dr. Rajesh Vashistha	9316911970	drvashistha@gmail.com
Pre Conference Workshop (AROICON)	28 Nov, 2024	Tumor Board Review- Discussion of interesting/difficult cases.		

AROI-ICRO Sun PRODVANCE Courses				
SZ-RCC, Trivandrum	27-28 July, 2024	Dr. Francis V James	9847189270	fvjames9@gmail.com
NZ-PGIMER, Chandigarh	21-22 Sep, 2024	Dr. Rakesh Kapoor	7087009396	drkapoor.r@gmail.com

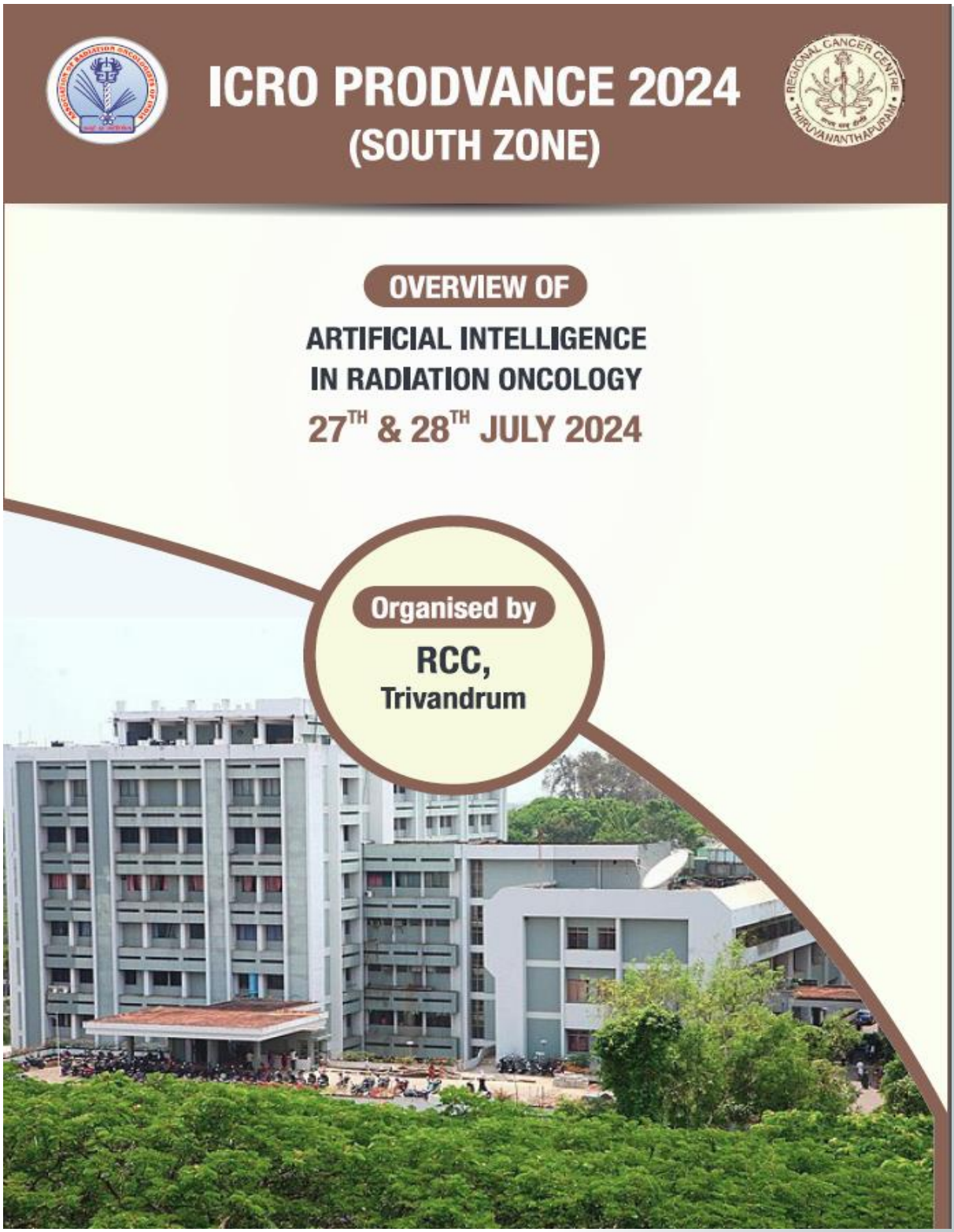
AROI-ICRO INTAS Radiobiology Courses			
AIIMS, Rishikesh	Dr. Manoj Gupta	9816137344	presidentaroi.manoj@gmail.com
Rest Courses- Yet to be decided			

AROICON-2024				
KMC, Mangalore	28 Nov-1 Dec, 2024	Dr. M. S. Athiyamaan	8892118848	athiyamaan.ms@gmail.com

ESTRO	3-7 May, 2024	Glasgow
ASCO	31 May-4 June, 2024	Chicago
ASTRO	29 Sep- 2 Oct, 2024	Washington

Best of Astro-2024
Details to be Announced later

Events to attend



Events to attend

Events to attend

ESTRO meets ASIA 2024

Joint FARO-ESTRO Congress

@ ESTRO meets Asia 2024

23-25 August 2024

Kuala Lumpur, Malaysia

ESTRO

WWW.ESTRO.ORG

Medanta Cancer Institute

medanta

14th Annual Conference of Indian Brachytherapy Society IBSCON-2024

30th August, 2024 - Workshop | 31st August - 1st September, 2024 - Conference

Venue: Lemon Tree Hotel, Convention Centre, Sector – 60, Gurugram

Events to attend

Events to attend

Events to attend

Events to attend

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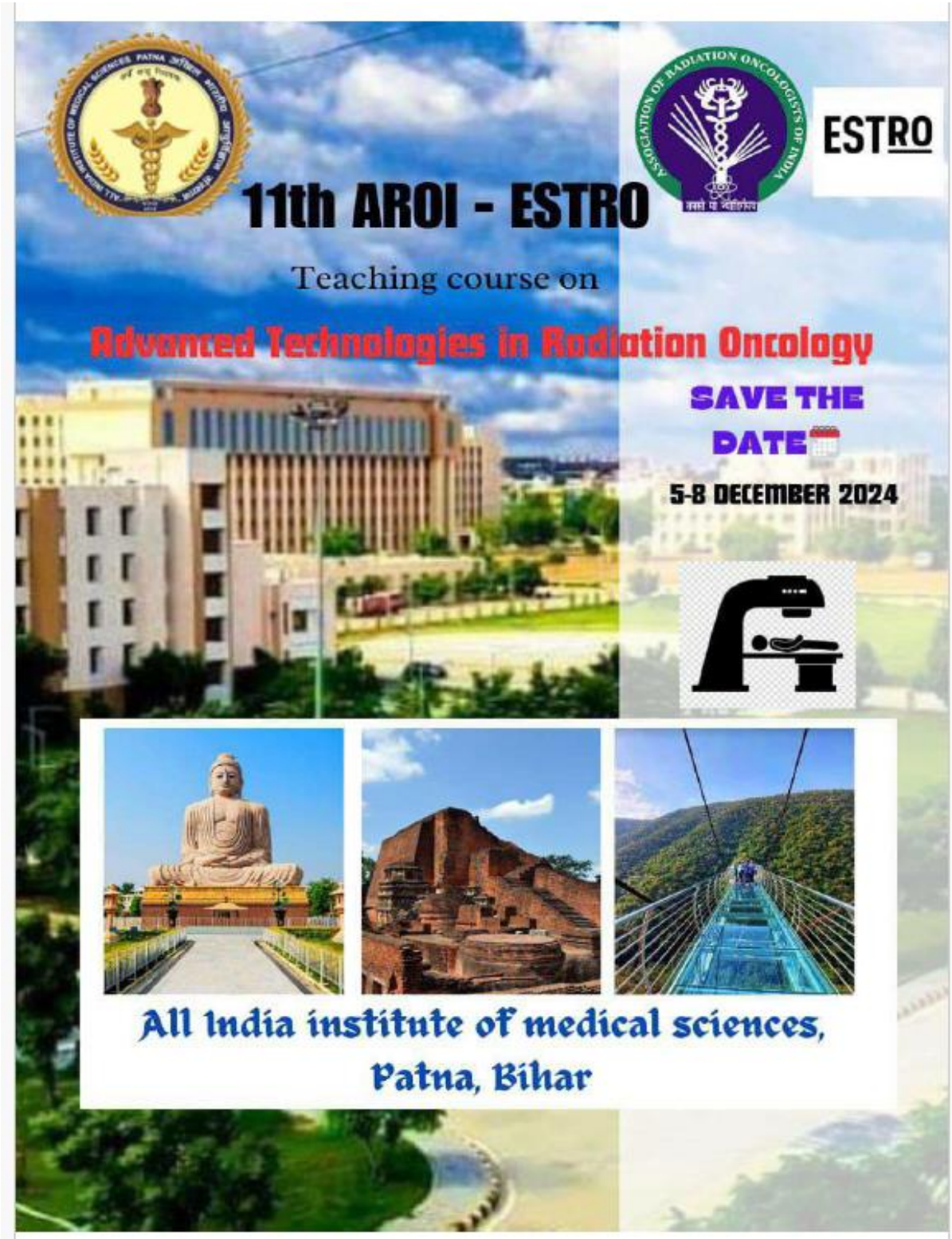

Events to attend

Events to attend

AROI calendar 2025

1. **AROICON 2025**

AROICON 2025 at Narayana Superspeciality Hospital Howrah, WB- Dr Suman Mallik (WB chapter)- Tentatively on 27th-30th Nov 25

2. **ICRO SUN PG 2025**
   a) Vydehi Institute of Medical Sciences, Bengaluru (KA state chapter)
   b) Dr Shaleen Kumar of SGPGI, Lucknow
   c) Prof. Manoj Gupta, AIIMS- Rishikesh

3. **INTAS Radiobiology 2025- 1 course -** Prof. Manoj Gupta, AIIMS- Rishikesh

4. **AROI-ESTRO TEACHING COURSES 2025**
   a) PGIMER, Chandigarh - Dr. Rakesh Kapoor (Advanced Technologies)
   b) RCC, Trivandrum - Dr Francis V James (Head & Neck)
   c) KGMU, LUCKNOW– Dr. Rajeev Gupta, ESTRO (Gynae Teaching course)- 6th -9th Feb 2025

5. **BEST OF ASTRO-2025-** Dr RMLIMS, Lucknow – Dr Madhup Rastogi

4. **YROC 2025**- Dr K S Kirushna Kumar, Meenakshi Mission Hospital and Research centre,Madurai- on 25th& 26th Jan 2025.

Seasons Greetings!!

AROI Wishes All Members A Happy Independence Day