



Personalization of treatment for Oropharyngeal cancer in the HPV era

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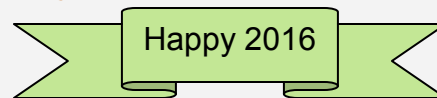
Oropharyngeal carcinoma is one of the most common head and neck cancer. Nearly a decade has passed since WHO first concluded that human papillomavirus (HPV) type16 is a cause of oropharyngeal cancer (OPC) and oral cavity cancer. This causal link between a sexually transmitted infection and head and neck squamous cell carcinomas (HNCs) has led to a paradigm shift in our understanding of HNC risk, with important implications for global cancer prevention. A meta-analysis of population studies from North America and Europe indicates that overall HPV prevalence in OPC increased significantly, from 40% in the 1990s to 70% in the late 2000s. Analyses of worldwide trends from 1983 to 2002 demonstrate a significant increase in OPC in developed countries in younger men, consistent with HPV involvement. It was increasingly realized that HPV positive OPCs are distinct from the HPV negative tumors.

HPV positive patients are relatively young, either non-smoker or light smokers but having history of high risk sexual behaviour. Their tumors are poorly differentiated with basaloid appearance and shows wild type p53 and up regulated p16. Increasing number of retrospective analysis revealed a better survival outcome for these patients compared to the HPV negative cohort. Ang et al in the pivotal analysis reported better survival in the HPV positive patients compared to HPV negative patients. In addition survival of HPV positive patients receiving chemoradiotherapy was no different to patients treated with radiation alone. In the index analysis Ang et al also formulated a risk stratification with Smoking (<10 and <10 pack years), and Nodal stage. Hence, patients less than 10 pack year of smoking were classified in low risk group. Patients with more than 10 pack years of smoking were further classified depending on nodal

From AROI, ICRO office & AROI Newsletter Editorial Board

Seasons Greetings to you all.

As we usher into year 2016 with a happy note, I would like you to celebrate it with rejoice and gaiety. Life is too short and we must celebrate its every moment.



Kudos to AROICON2015 Lucknow organizing team for putting up a great show which we will cherish for years to come. Late Dr. Pant must have showered his blessings from heavenly abode on good work put up by everyone for the success of event.

Without much ado I wish everyone A Happy and Prosperous New Year.

With warm regards,

Dr. Rajesh Vashistha
Secretary General AROI

37th AROICON concludes successfully @Lucknow



Inside this issue:

Article & GBM Minutes	1-2
GBM Minutes	3
Happenings	4
Fellowships & Awards List	5
Advertisements	6
Happenings & Events	7
Greetings /QA	8

Personalization of treatment for Oropharyngeal cancer in the HPV era

status with up-to N2a classified as low risk and remaining went into intermediate risk with distinct survival difference between these groups. Later on O'sullivan et al classified these tumors in three risk groups with distinct survival difference with additional data of T stage. It was increasingly being realized an opportunity of de-escalation of treatment at least in the low risk subgroup whereas the remaining subgroups merits either continuation of present standard of care or intensification of therapy. De-escalation – aims to reduce the burden of treatment without compromising its effectiveness. "Burden of treatment" is a composite of functional impairment, quality of life, time off from work, cost, psychosocial impact, late effects, etc. A wide range of strategies has been devised for the de-intensification: class I: Less intensive treatments in aimed at replacing the conventional concurrent chemotherapy with less toxic monoclonal antibody which is being explored in the recently reported NCIC-CTG HN.6 trial and RTOG 1016. The NCIC trial compared standard fractionation radiation with concurrent chemotherapy to accelerated fractionation radiation with a monoclonal antibody Panitumumab. Initial result of the trial showed equivalence but can be criticized for combining accelerated radiation to monoclonal antibody which may complicate interpretation of the results. The class II trials are all in phase II which comprises of treatment response adapted approach. The trials are subjecting patients to receive induction chemotherapy followed by reduced dose radiation for the complete responders. The E1308 is the prototype of this regimen and subjected patients to receive induction chemotherapy (Cisplatin 75mg/m² D1, Paclitaxel 90mg/m² D1,8,15, Cetuximab 250mg/m² D1,8,15 Q 21 days for 3 cycles) followed by low dose intensity modulated radiotherapy with concurrent Cetuximab for

those with a complete response and full dose radiation for partial responders. Preliminary results showed favorable results of this approach. This approach is now being evaluated in the Phase III QUARTERBACK trial. The NRG HN.002 trial is randomizing patients to receive accelerated radiation 60 Gy in 5 weeks only or conventional radiation of 60 gray with concurrent cisplatin. The class III approach is of surgical de-escalation. The phase II ECOG 3311 trial is randomizing HPV positive patients to one of these three arms i) Low risk (T1-2 N0-1, neg. margins) -observation ii) Intermediate risk (2-4 nodes <1mm ECE close margins PNI/LVSI)- further randomized to 50 or 60 Gary radiation and iii) High Risk (> 5 nodes gross ECE pos. margins)-to receive radiation with concurrent cisplatin. The ADEPT trial is also evaluating possibility of deescalating treatment in patients with extra-capsular extension. In India we have limited data regarding HPV in OPCs stating lower incidence ranging 25-30%. However, point should be made that Indian culture and society are rapidly getting into western shape and high risk sexual behaviour is not infrequent in Indian young population. In addition HPV has a latency of 15-20 years so one decade down the line the incidence of HPV positive OPCs are definitely going to be a reason of concern. Besides treatment, keeping a note at the expanding population perhaps India is heading towards a rise in HPV positive OPCs which may pose a great threat to the health care facility. HPV vaccination has been a great success for cervical cancer and in this context major steps are required to curtail this risk of OPCs. Hence, treatment de-escalation is a growing area of research prevention opportunities are need of the hour.

MINUTES OF ANNUAL GBM, AROI @LUCKNOW, 28 NOV 2015

Meeting was called to order by secretary General.

Mike was handed over to the officiating President, Dr. U P Shahi Sr. Vice president, Chairman of GBM.

Paper for roll call and sign on it, agenda was circulated previously.

CONDOLANCE

Five AROI members left for heavenly abode.

Dr D Ghosh Dr T K Dutta Dr M C Pant
Dr Arti Patel Dr K K Singh

Two minute silence was observed. House decided to send condolence message to the respective families.

Proposed by Dr R Billimagga Seconded by Dr M K Mahajan

MINUTES OF LAST GBM and Action Taken – Presented in House

Proposed by Dr G Kilara Seconded by Dr R Billimagga. Passed by the house.

SECRETARY GENERAL'S REPORT

NEW MEMBERS

239 new members inducted this year. Total members are 2537 now. The house clapped and applauded. Enrolled as AROI members, proposed by Dr. Manoj Gupta seconded by Dr. Manjinder Sidhu. Passed by house.

AWARD PAPERS

50 papers for M S Gujral medal, 15 for GC pant medal, 5 for Medical physics, 5 for best proffered paper<40 and 4 for proffered paper>40 received this year.

Around 80 applicants received for different fellowships.

YROF

4th YROF conference was held successfully at Bhubneshwar in 2015. Well managed conference with excellent scientific material. Young Radiation oncologists were given opportunity to actively participate in National conference. Five papers from this conference were presented in the present AROICON. Congratulations to Organising team. 5th YROF is to be held at Rajkot.

ESTRO

Dr R Billimagga briefed the house about activities. 5th AROI ESTRO teaching course to be held at Max hospital Saket New Delhi in December 2015. 6th to be held at Ruby Hall Hospital Pune.

Dr Kilara proposed and Dr Vijay Anand Reddy seconded. Passed by house.

ASTRO

1st Best of ASTRO was organized successfully by Dr K Talpatra at Kokilaben Hospital Mumbai. Thanks to him. 2nd Best of ASTRO to be organized by Dr T

MINUTES OF ANNUAL GBM, AROI @LUCKNOW, 28 NOV 2015

Kataria at Medanta Hospital New Delhi. Dr R Billimagga asked Secretary General to write to ASTRO people for organizing of Best Of ASTRO and to get multiple license. Secretary General told that he has already written and expecting reply within this month. 3rd Best Of Astro bid by Vishakhapatnam. Subject to reply from ASTRO.

Dr Vyas proposed, Dr Reddy seconded. Passed by house.

AMPI

AMPI given due importance. Senior members being invited to AROICON and 1-2 Hour session kept for medical physics.

Dr Mahajan proposed Dr Hukku seconded. Passed by house.

AERB

Dr S K Srivastava will sort out any issue pertaining to AERB. The members can write to him regarding any issue.

Dr Billimagga proposed Dr Vyas seconded. Passed by house.

FARO

Dr R Billimagga briefed about Federation Of Asian Radiation Oncologists. Association of 8 asian countries. Secretary General informed house that Dr R Billimagga elected Vice President of FARO. The aim of FARO is to start teaching courses like ESTRO. Multicentric trials in Asian Countries. A uniform curriculum of teaching in Asian countries. Dr Kilara congratulated Dr Billimagga

Dr Reddy proposed Dr Nagraj seconded. Passed by house.

DR M C PANT GOLD MEDAL

Past GBM had decided to substitute old and long running Orations and medals with new ones. This year proposal to replace J M Pinto gold medal with Dr M C pant gold medal. Dr Ayyagiri asked secretary general to write to family of J M Pinto and Parvati Devi and inform about discontinuation of the medals and thanks from Association. Dr Sanyal asked if the corpus fund for medal has been received and secretary general informed the house that the same has already been received. Duration of the medal will be for 15 years. Some members objected and wanted the duration to be 10 years. Dr M K Mahajan suggested o form a committee to frame rules in this matter. Finally it was decided that family will be informed and if agreed medal will be for 10 years.

Dr Kilara proposed Dr Jalali seconded. Passed by house.

AROICON 2018

Bids from Trivandrum(Kerala Chapter), New Delhi(North Zone Chapter),Pune (Maharashtra Chapter),Chennai(TN and Pudducherry Chapter). Chennai withdrew. Brief presentations by Bidders. Finally voting was done and Trivandrum got maximum votes. House Congratulated Kerala Chapter for getting opportunity to organize AROICON 2018.

ARO I ESTRO TEACHING COURSE 2016

Two bids. Kochi(Kerala Chapter) and Hyderabad(AP chapter). Kerala withdrew. Hyderabad to host next AROI ESTRO teaching course 2016. House congratulated.

NEW PROPOSED AROI ICRO TEACHING COURSE

DR Reddys Laboratories agreed to sponser 4 courses per year one in each zone. They will take care of food and faculty expenses.

Dr R Billimagga proposed Dr Nagraj seconded. Passed by house.

INCREASE OF MEMBERSHIP FEE

Executive committee proposed to hike membership fee from Rs 5000 to Rs 6000.

Dr Kilara proposed Dr Jalali seconded. Passed by house.

PREVENTIVE ONCOLOGY

Executive committee proposed that in view of increasing incidence of cancer every Institute should adopt 3-4 school/colleges and teach preventive oncology. The same to be done under banner of AROI.

Dr Reddy Proposed Dr Negi seconded. Passed by house.

CONSTITUTION AMENDMENT

Constitution Amendment committee headed by Dr K T Bhowmick had given amendment proposals and same were circulated to every member by email and suggestions were asked for. After getting suggestions and reamendment a final constitution was drafted and recirculated by email and most of the members accepted it. Dr C S Madhu said he did not receive copy of constitution. But other members like Dr.G Kilara Dr Billimagga Dr Mahajan Dr Ayyagiri said the same was sent to everyone by email.

Tenure of office bearers as per new constitution

President and President elect 2 years

Secretary General 4 years.

Eligibility to contest election for President 20 years AROI membership and Secretary General 15 years AROI membership. Dr Abhishek Shankar and Dr Muninder Negi objected to it. Dr M K Mahajan and Dr Kilara and Dr Gujral explained that theses are responsible posts and senior and experienced members should contest only. DR MLB Bhatt And Dr R K Vyas wanted the criteria to be decreased to 15 and 10 years respectively for Presient and Secretary. Dr Ayyagiri and Dr Kilara again stressed to give importance to experience and good platform before contesting for these posts. Dr Jalali suggested that one YROF member can be inducted in National Executive members.

After brief discussion house agreed to rewrite constitution.

Proposed by Dr Gujral seconded by Dr G Kilara. Passed by House.

AUDITED ACCOUNT

58 lakhs received from ICC 2013. 30 lakh given to AROI journal as F D. 10 lakh given as seed money for ICC 2017. 15 lakh for AROI fellowships.

Total FDR 1.74 crores.

Dr Abhishek proposed, Dr V A Reddy seconded. Passed by house

ICRO REPORT

Presented by Dr S N Senapati.

2016 ICRO courses to be organized by Aurangabad(Maharashtra chapter), Bikaner(Rajasthan Chapter) and Guwahati(North east Chapter).

Proposed by Dr M K Mahajan seconded by Dr Manoj Gupta. Passed by House.

ARO I JOURNAL

30 lakh deposited for Journal interest given as FD. 1.70 lakh collected from advertisements from pharma companies and 6 lakh given separately (Total 7.70 lakh). State chapter's executive members will try to give Rs 15000 per year as per constitution and state chapters to get sponsorship of Rs 25000-30000 per year for journal. Dr Umesh Mahantashetty raised the issue of PAN no for state chapters. Dr Gujral clarified that the same can be applied after getting certificate from AROI National office.

Dr Nagraj proposed Dr G Kilara seconded. Passed by house.

PRESIDENT AROI

Due to demise of in office president Dr M C Pant as per constitution senior vice president to be promoted as president, Junior Vice president to be promoted as senior vice President and other executive member promoted as junior Vice president.

Therefore Dr U P Shahi is now President of AROI.

Proposed by Dr M K Gupta seconded by Dr Vyas. Passed by house.

ELECTION 2016

Since elections are due in 2016. Dr K T bhowmick agreed to be election officer.

Passed by house. Proposed by Dr M K Gupta seconded by Dr Madhup rastogi.

Meeting Concluded

2nd GBM called.

Dr U P SHAHI took charge as president and 1st GBM presented Dr. M.K. Mahajan, Dr. Ramesh Bilimagga and Dr. Nagraj Huilgol, Dr. Abhishek seconded, house passed with voice vote. Meeting ended with thanks to arranging of 37th AROICON 15.

Program Reports

ICRO, Sevagram

21st ICRO teaching course was organized in the department of Radiation Oncology of Mahatma Gandhi Institute of Medical Sciences, Sevagram on topic "Gynecological Malignancies" on 24th and 25th October 2015 for the selected Post Graduate Students across the



country. Total 60 selected senior Post Graduate students of Radiation Oncology from various part of the country were participated in it and the Chief Guest of the function was Dr. S. K. Shrivastava, Prof.

& Head, Deptt. of Radiation Oncology, Tata Memorial Hospital, Mumbai.

Clinical Radiobiology, Bangalore

10th Teaching course on "Clinical Radiobiology for Radiation Oncologists" were conducted in Vydehi Institute of Medical Sciences, Bangalore on 5th December, 2015 by Dr



Geeta Narayanan, Professor, Radiation Oncology. Total 81MD and DNB students attended the course. Faculties from M.S. Ramaiya Medical College,

Bangalore and Vydehi Institute also attended the program. The program was highly appreciated by the attendees.

Radiobiology Course, Varanasi



The 9th Radiobiology course was conducted by Apex Hospital Cancer Institute, Varanasi on 11th October, 2015. This was preceded by CME on 10th October evening on Precision Radiotherapy.

The radiobiology course was attended by 60 delegates from Uttar Pradesh, Rajsthan, Delhi, Bihar, West Bengal and two consultants from Kochi.

NEAROI, Guwahati

The 10th Annual Conference of North East Zonal Chapter of Association of Radiation Oncologist of India was held in Guwahati, the capital city of Assam on 9th and 10th October 2015. It began with



a preconference Live Practical Workshop (Image based brachytherapy and IGRT) in Dr B Borooah Cancer Institute Guwahati. Participants, especially Postgrad-

uate students from various Radiotherapy Department of North East India enthusiastically participated in the Workshop. Delegates from entire northeast region, West Bengal and other parts of India joined to make the conference, a successful event.

TNPAROI Meet, Madurai



M e e n a k s h i Mission Hospital and Research centre, Madurai has great pleasure in hosting the 30 Annual conference of the Association of the Radiation oncologists of

India (Tamilnadu & Puducherry Chapter) on 3 & 4 october 2015,.It was attended by 192 Delegates and had 72 papers. The programme was a big success and was well appreciated by the delegates.

AROICON2015 Lucknow



List of winners of AROI Fellowships and Awards AROICON 2015

Excellent Proffered paper >40

Dr. Narendra Kumar, PGIMER, Chandigarh

Excellent Proffered paper <40

Dr. Shyam S Bisht, Medanta, Gurgaon

Dr. G C Pant Young Doctor Award

Dr. Sagar Gayakwad, TMH, Mumbai

Dr. M S Gujral Gold Medal

Dr. Sathiya K, Apollo Hospital, Chennai

Dr. J M Pinto Gold Medal

Dr. Sanketh Kotne, AIMS, Kochi

Medical Physicist Gold Medal

Dr. Kartik Patro, MSSH, Delhi

Travel Fellowship

Dr. Arun E, PGIMER, Chandigarh

Dr. Pooja Gupta, DR RMLIMS, Lucknow

Dr. Chinna Babu, PGIMER, Chandigarh

Dr. Sindhu N, MCRC, Bangalore

Dr. Sourav Ghosh, RKMCH, Kolkata

Dr. Manisha Himtani, JKCI, Kanpur

Neiljoseph Fellowship

Dr. Rajib Bhattacharjee, IPGME&R, Kolkata

Dr. Thiraviyam E, JIPMER

Dr. Prarthana S, CMC, Ludhiana

Dr. Romikant Grover, CMC Ludhiana

Dr. Shruti Agarwal, JKCI, Kanpur

If not completed fellowship up to July 2016:-

Dr. Pooja Gupta (waiting), RMLIMS,

Dr. Archana Reddy (waiting), GKNM

Fellowship <35 years age group

Dr. Vandana Kushwaha, KGMU, Lucknow

Dr. Abhishek Soni, PGIMS, Rohtak

Dr. Vipul Nautiyal, CRI, SRHU, Dehradun

If not completed fellowship up to July 2016:-

Dr. Sandip Barik (waiting), RMLIMS,

Dr. Pavan Kumar L (waiting), NIMS

Fellowship 35-40 years age group

Dr. Lucy Pattanayak, AHRCC, Cuttack

Dr. Pankaj Arora, MSSH, Mohali

Dr. Manjinder Sidhu, MSSH, Bathinda

If not completed fellowship up to July 2016:-

Dr. A Kadam (waiting), VH, BANGALORE

Dr. D Mondal (waiting), AIIMS, New Delhi

Fellowship 40-50 years age group

Dr. Rakesh Jalali, TMH, Mumbai

Dr. Deepak Abrol, GMC Jammu

Dr. Meenu Gupta, SRHU, Dehradun

If not completed fellowship up to July 2016:-

Dr. Pavan K Mehrotra (waiting), BLK, Delhi

Dr. M K Negi (waiting), GMC, Kangra

Fellowship >50 years age group

Dr. Rakesh Kapoor, PGIMER, Chandigarh

Dr. Virendra Bhandari, SAMC, Indore

If not completed fellowship up to July 2016:-

Dr. Hanuman Yadav (waiting), GGSMC

AROI- Radiation Technician Fellowship

Mr. Uttam Paul, SGPGIMS, Lucknow

ICRO Winners

Dr. Antony G Francis
Thottian, AIIMS

Dr. Priyamvada, TMH
Dr. Naveen K, GKNM

Dr. Bhanu P V, AIIMS
Dr. Isha Jaiswal, RMLIMS
Dr. Meetakshi Gupta,
TMH

Governing Council meeting, ICRO 2015

The Governing Council meeting of the ICRO 2015 was held on 26th November 2015 at AROICON'15 Lucknow at 5.30PM to 6.30 PM.

The following agenda were discussed

1. Guidelines for selection for FICRO. It was decided to form a committee to finalize it
2. Number of ICRO teaching programs sponsored by Sun Pharma to be reduced from 3 to 2 per year. It was discussed and decided to hold 2 meetings per year from 2017 onward.
3. Formation of teaching modules with course directors:- All the members unanimously agreed to start a uniform teaching module for the different site specific diseases with a team of experts which will be under the control of a Director of that site.
4. Selection of ICRO venues for the next year. :- There were 7 bidders for ICRO 2016. Governing body finalized Guwahati, Aurangabad and Bikaner to conduct the ICRO programme in 2016.
5. Any other matter with permission of the Chair:- Dr Rajesh Vasistha informed the house that Dr Reddy Pharma has agreed to sponsor four teaching courses in a year for Post PG (up to 5 Yrs) AROI members under the banner of ICRO. It was unanimously accepted.

AROICON 2015 Report

37th Annual conference of Association of Radiation Oncologists of India was held at Lucknow from 26-29 November 2015. Prime host was King George's Medical University and Co-hosts were Sanjay Gandhi Post Graduate Institute of Medical Sciences, Ram Manohar Lohia Institute of Medical Sciences, Lucknow Cancer Institute and Command Hospital.

It was joint effort of all these institutes and all them really worked as team. Conference started with ICRO course on Geriatric Oncology and imaging in oncology on 26th Nov. About 225 delegates attended the course and main event was attended by 1100 delegates. 164 Scientific deliberations and 12 panel discussions were taken place during 2 and half days activities.



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National / international**January 2016**

- 30-31 Young Radiation Oncology Forum, Rajkot**
Dr. hemendra Mod, Organizing Secretary
Email; drhmod@gmail.com Mob:09726360025

February 2016

- 5-6 RGCON2016**, Rajiv Gandhi Cancer Institute, Delhi
Contact: Anju Chauhan email:2016rgcon@gmail.com
- 20-21 AMPICON-NC**, IMS, Varanasi
 Dr. Lalit M Aggarwal, Organizing secretary
imaggarwal@yahoo.com, **Mob:09336936073**
- 26-28 5th Asia-Pacific Breast Summit**, Singapore
www.breastsummit.org
- 26-28 A conference of new ideas in cancer– challenging dogmas**, Tata memorial Hospital, Mumbai
Email; events@tmc.gov.in

Nov 2016

- 24-27 AROICON, 2016**, Cuttack, <http://www.aroicon2016.com/>
 Organising Secretary, Dr. Surendranath Senapati
snsenapati2007@gmail.com

Other events to look forward

22nd ICRO PG teaching programme (2016)

Aurangabad (Maharashtra chapter),
 Bikaner (Rajasthan Chapter) and
 Guwahati(North east Chapter).

Final dates announced later.

Indo American Cancer Association Travelling Fellowships

Contact : Manoj Gujela 098105 28727

For details visit: travelingfellowship.org

**Changed Executive committee members**

As per GBM held in Lucknow:-

Dr. U P Shahi

from Senior Vice President to President AROI

shahiuday@gmail.com

Dr. V Srinivasan

from Junior Vice President to Sr. Vice President AROI

vsrinivasan09@gmail.com

Dr. Sudhir Singh

from Executive Member to Jr. Vice President AROI

Newly elected executive:-

Dr. N K Kalita

North East President

nripatikumar@gmail.com

Dr. Shyam Tsering

North East Secretary

stsering2009@yahoo.in

Kerala AROI Meet Report

Chapter conducted the annual state meeting on the 15th of November 2015 at Kottayam, Kerala. The meeting was conducted with the theme "standard of care and rational practices". There were 94 members. We observed one



minute silence on the memories of Prof.V.B.Rajasekharan Nair (Former, HOD, Kottayam Medical College). GBM minutes are available with chapter. Scientific deliberations were interesting

Dr.SURESH KUMAR.K,
 State Secretary, Kerala Chapter.

ESTRO School—AROI Report

3rd ESTRO School – AROI teaching course was held in Max Hospital, Saket, New Delhi from 6-9th December' 2015. It was an exhaustive 4 days course on "Advanced Technologies in Radiation Oncology". Faculty comprised of 7 speakers from European Society of Radiotherapy and Technology and 22 eminent speakers from different hospitals of India. Besides, total of 105 delegates attended the teaching course.

The most appreciated aspect of the course was hands on sessions on IMRT/IGRT/SRS/SBRT Planning, 4D-CT acquisition and phase selection and imaging and position verification. Throughout the course there was active participation from delegates in the form of questions and answers session.

The feedback received from delegates shows high level of satisfaction and few constructive suggestions.

Dr. A K Anand
 Director Radiation Oncology, Max Hospitals

ESTRO School—AROI Teaching course is best combination of knowledge and experience. Outcome has been great level of satisfaction among participants.

Happy New year

Year after year...
Month after month...
Day after day....
Hour after hour
Minute after minute....
Second after second.....Times change....
Accept change....Embrace change.....Change is constant....
Wishing you the Best of Times.....Happy New year.....

FICRO Members

Dr. Tomcha Singh
Dr. Nagraj Huilgol
Dr Kishore Singh
Dr. Vijay Anand Reddy
Dr. Tejinder Kataria
Dr. Srikrishna Mondal
Dr. Ajay sandhu
Dr. R K Vyas
Dr. Pradeep Gaur
Dr. Manoj Gupta
Dr. James Francis

Response to last issue question

Recurrence in Infield cases in IMRT era, are we missing somewhere?

Intensity Modulated Radiotherapy has been a great technique when one has to treat complex anatomical region i.e. where normal tissues are in close proximity of targets. Site like head and neck, pelvic are classic examples of such situations.

3d planning techniques were inadequate to deliver complex concave dose distributions. Immobilization has given more control over organ motions resulting in reduced PTV margins.

Tighter margins and image fusion allows one to delineate target volumes more precisely but uncertainty in pre or post-op situations, location etc. can cause compromises unknowingly.

IMRT plan isodose lines are not as smooth as of 3DCRT plans. Increased dose heterogeneity may effect toxicity, tumor control probability. There are hot or cold spots within the target. There is more low dose volume in normal organs while smaller volumes (target) are being given higher doses.

Tissue inhomogeneity correction errors of 4-10% used in TPS could some time result in 2% error in dose delivery. .Optimization algorithms have convergence error due to inaccurate beamlets which sometime could sum up to 3-6%Dmax.

IMRT planning parameters like dose/volume constraints, number of beams, beam orientations/table angles, tuning structures, collimator angle and isocentre placement influence dose delivery..

Modern radiotherapy is a team work based modality. Plan evaluation needs talk through session, why this beam angle, why underdose parts of target, why more normal tissue could not be spared, why this plan is good or bad. Physician and physicists need to intrude into each others domain to extract best from machines at disposal.

-Input by Deepak Arora, CMP, Max Patparganj

Question of this issue

Relevance of multi-centric trial and our preparedness, your take?

Please send your reply for publication in next issue of AROI newsletter to deepak.arora3@maxhealthcare.com