



ESTRO

5th AROI - ESTRO GYN Teaching Course
3D Radiotherapy with a Special Emphasis on Implementation of
MRI / CT Based Brachytherapy in Cervical Cancer
30th June – 3rd July 2022
Kolkata, India

AROI Course Director:

Umesh Mahantshetty, *Radiation Oncologist, Homi Bhabha Cancer Hospital & Research Centre, Visakhapatnam, (IN)*

ESTRO Course Directors:

Kari Tanderup, *Medical Physicist, University Hospital, Aarhus (DK) (Online only)*

Remi Nout, *Radiation Oncologist, Erasmus University Medical Centre, Rotterdam (NL) (Online only)*

ESTRO Faculty:

Taran Paulsen Hellebust, *Medical Physicist, Oslo University Hospital, Oslo (NO)*

Primoz Petric, *Radiation Oncologist, University Hospital Zurich (CH)*

AROI Faculty:

Manoj Gupta, *Radiation Oncologist, AIIMS, Rishikesh (IN)*

G Lavanya, *Radiation Oncologist, Tata Memorial Hospital, Mumbai (IN)*

Bhavana Rai, *Radiation Oncologist, PGIMER, Chandigarh, (IN)*

Yogesh Ghadi, *Medical Physicist, Tata Memorial Hospital, Mumbai (IN)*

Abhishek Basu, *Radiation Oncologist, Burdwan Medical College, Purba Bardhaman, (IN)*

Ajeet Gandhi, *Radiation Oncologist, Dr Ram Manohar Lohia Institute of Medical Sciences, Lucknow, (IN)*

Guest Faculty:

Arun Oinam, *Medical Physicist, PGIMER, Chandigarh, (IN)*

Santam Chakraborty, *Radiation Oncologist, Tata Medical Center, Kolkata (IN)*

Priya Ghosh, *Radiologist, Tata Medical Center, Kolkata (IN)*


Local Organisers:

Chandan Dasgupta


Abhishek Basu

ESTRO Coordinator:


Miika Palmu *ESTRO, Brussels (BE)*

 Parallel Track for Experienced group

 Parallel Track for Physicians

 Parallel Track for Physicists/RTTs/Dosimetrists


Day 1- Thursday 30 June	Anatomy, pathology and imaging of the female pelvis and of cervical cancer CTV, PTV, OAR assessment and treatment planning EBRT Contouring and planning workshops for EBRT	Speaker
	Chair: Primoz Petric	
08.30 – 09.00 (30 min)	Welcome address (15 minutes) & Presentation on pre-workshop questionnaire results (08 minutes)	C Dasgupta / Course Directors A Basu
09.00 - 09.20 (20 min)	Anatomical considerations, role of clinical gynaecological examination, and staging (TNM, new FIGO, AJCC)	A Gandhi
09.20- 09.50 (30 min)	Imaging normal anatomy: uterus, parametria, organs at risk and nodes US, CT, MRI	P Ghosh
09.50 - 10.45 (55 min)	Imaging pathology of cervix cancer (incl. nodes) Clinical drawings, CT, US, PET-CT, MRI: - At time of diagnosis - At time of brachytherapy	U Mahantshetty P Petric
10.45 -11.05	<i>Coffee Break</i>	
	Chair: U Mahantshetty	
11:05-11:35 (30 min)	Patient preparation for treatment planning & EBRT including immobilization, organ filling, reproducibility	G Lavanya
11.35 - 11.55 (20 min)	Imaging protocols for radiation treatment planning including virtual simulation	S Chakraborty
11.55 - 12.25 (30 min)	GTV - CTV - ITV in EBRT including EMBRACE II	P Petric
12.25 - 12.55 (30 min)	Management and treatment planning of Para-aortic nodal region	B Rai
12:55-13:35	<i>Lunch</i>	
	Chair: T Hellebust	
13.35 - 14.15 (40 min)	Image guidance and ITV-PTV (online / pre-recorded)	K Tanderup
14.15 - 14.45 (30 min)	Treatment techniques EBRT – physics aspects and plan quality criteria	T Hellebust
14.45 - 15.15 (30 min)	EBRT Boost - Parametrial & Nodal: Simultaneous or Sequential? (online / pre-recorded)	K Tanderup
15.15 - 15.40 (25 min)	Clinical evidence for EBRT techniques and medical dose constraints including DVH parameters & EMBRACE II planning aims for EBRT (online / pre-recorded)	R Nout
15.40 - 16.20 (40 min)	Radiobiology relevant to Cervical Cancer Brachytherapy with special emphasis on HDR BT	M Gupta
16.20 – 16.30	<i>Coffee break</i>	
16.30 -18.15 (105 min)	Physician's EBRT workshop: CTV (Primary / Nodal / Post op) and organs at risk [15' Introduction, 30' Contouring, 45' discussion including evaluation of homework EBRT case]	U Mahantshetty /P Petric/ Other Faculty
16.30 - 18.15 (105 min)	Physicists EBRT Planning Workshop: [15'Introduction, 90' discussion including evaluation of homework EBRT case]	Y Ghadi / A Oinam / T Hellebust


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Day 2 - Friday 1 July	Patient preparation, principles & selection of BT techniques, clinical drawings, commissioning processes for BT Contouring and Commissioning workshops for BT	Speaker
	Chair: P Petric (Physicians) / T Hellebust (Physicists)	
08.30 - 09.10 (40 min)	All Physicians: Patient preparation and principles of BT application including, preparation, anaesthesia, procedure	G Lavanya
	All Physicists: BT Sources for cervical cancer brachytherapy (Ir Vs Co Sources)	A Oinam
09.10 - 09.50 (40 min)	All Physicians: Clinical diagrams: Cervix cancer	A Basu
	All Physicists: Commissioning and QA of HDR brachytherapy unit including TPS	Y Ghadi
09.50 - 10.15 (25 min)	All Physicians: Video presentation: IS (TATA)	G Lavanya / U Mahantshetty
	All Physicists: Commissioning & QA of BT Applicators	T Hellebust
10.15 - 10.35	<i>Coffee break</i>	
	Chair: U Mahantshetty	
10.35 - 11.10 (35 min)	Cervix cancer BT techniques: IC, IC+IS, IS Applicators & Indications	U Mahantshetty
11.10 - 11.30 (20 min)	Video presentation: IC + IS (TATA)	G Lavanya
11.30 - 11.50 (20 min)	Video presentation: IC + IS - PGI Chandigarh /Others	B Rai
11.50 - 12.15 (20 min)	Video presentation: Newer Applicators	U Mahantshetty/ Others
12.15 - 13.20	<i>Lunch</i>	
	Chair: P Petric (Basic track) / U Mahantshetty (Experienced track)	
13.20 - 14.05 (45 min)	Year 1(RO & MP): ICRU-GEC-ESTRO Recommendation: GTV, CTV's at diagnosis and at time of brachytherapy for cervix cancer	P Petric
	Experienced track (RO & MP): Presentations & Discussions by participants and follow-up	U. Mahantshetty/ T Hellebust / AROI Faculty
14.05-14.25 (20 min)	Year 1 (RO & MP): 2D & 3D Delineation of Organs at Risk	A Basu
	Experienced track (RO & MP): Presentations & Discussions by participants and follow-up	U. Mahantshetty/ T Hellebust / AROI Faculty
14.25 - 14.55	<i>Coffee break</i>	
14.55-17.00 (125 min)	All Physicists: 1. BT Commissioning Workshop in 2 batches - Video on Commissioning of Applicators - Autoradiography on HDR machine area	T Hellebust / Y Ghadi / A Oinam
	Year 1 physicians: BT Contouring workshop (TATA 02 / TATA 05)	G Lavanya / A Gandhi
	Experienced track (RO & MP): Presentations & Discussions by participants and follow-up	U. Mahantshetty/ T Hellebust / AROI Faculty

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Day 3 - Saturday 2 July	Target Concept, OAR delineation, Principles of BT planning of IC, IC+IS & IS Applicator reconstruction, Radiobiology, Workshops: Contouring (MDs), Applicator reconstruction	Speaker
	Chair: P Petric	
08:30 - 08:55 (25 min)	Clinical implications of Radiography & CT based BT Planning	G Lavanya
08:55 - 09:25 (30 min)	Principles of radiography-based BT planning & CT information (ICRU 89 Level I Reporting)	Y Ghadi / U Mahantshetty
09:25 - 10:30 (55 min)	CT contouring and planning (including ultrasound) for brachytherapy	U Mahantshetty
10:30 - 11:00	<i>Coffee break</i>	
	Chair: Y Ghadi (Basic track) / P Petric (Experienced track)	
10:30 - 11:15 (45 min)	Year 1 (RO + MP) : ICRU-GEC-ESTRO recommendations on dose points & volume reporting	P Petric
	Experienced track (RO & MP): Presentations & Discussions on CT Registration Study	U Mahantshetty/ G Lavanya / Other Faculty
11:15 - 12:00 (45 min)	Year 1 (RO + MP) : Applicator reconstruction, geometry and image fusion	T Hellebust
	Experienced track (RO & MP): Presentations & Discussions on CT Registration Study	U Mahantshetty/ P Petric / Other Faculty
12:00 - 12:45 (45 min)	Physics aspects of treatment planning IC +/- IS techniques in cervix cancer (online / pre-recorded)	K Tanderup
12:45 - 13:30	<i>Lunch</i>	
	Chair: T Hellebust (Yr 1) / U Mahantshety (Experienced track)	
13:30 - 14:00 (30 min)	Physics aspects of treatment planning of pure interstitial techniques in cervix cancer	Y Ghadi
14:00 - 14:30 (30 min)	Imaging Approaches during fractionated BT & its Implications	K Tanderup/ U Mahantshetty
14:30 - 15:00 (30 min)	Year 1 (RO + MP) : Radiobiological models for BT, EBRT AND Combine (HDR)	T Hellebust
15:00 - 15:30	<i>Coffee break</i>	
15:30 - 18:00 (150 min)	All Physicists Workshop: Reconstruction & reference point exercises in groups	T Hellebust /P Petric /Y Ghadi / A Oinam
	Experienced track (RO & MP): Presentations & Discussions on CT Registration Study	U. Mahantshetty / Other Faculty
	Year 1 Physicians Workshops: cervix large-good response MRI/CT [15'Introduction, 45' Contouring, 90' discussion including evaluation of homework EBRT case] (TATA 04) + TATA 04 CT Based [10'Introduction, 30' Contouring, 30' discussion]	G Lavanya/ A Gandhi /P Petric
19:00	Course Dinner	


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Day 4 – Sunday 3 July	IGABT Treatment planning, physics, biology, clinical strategies Uncertainties, imaging & several BT fractions Nodal boost (EBRT), parametrial boost (IGABT, EBRT) Workshops: Contouring (MDs), Treatment Planning (Physicists) IGABT: Practical exercises treatment planning Interactive feedback session	Speaker
	Chair: T Hellebust	
08.15 – 08.35 (20 min)	Feedback on BT treatment planning homework	Y Ghadi / A Oinam
08.35 – 10.00 (85 min)	Cervix cancer: treatment planning workshop – including with participants (TATA 04)	All Teachers
10.00 – 10.45 (45 min)	All except year 1 physicians: Treatment Planning Workshop in groups: (Same case as in the morning - TATA 04) on Elekta/Varian/Bebig) systems	All Teachers
10.45 – 11.00	<i>Coffee break</i>	
11.00 – 11.20 (20 min)	Time Dose fractionation for EBRT + HDR BT	T Hellebust/ P Petric
11.20 – 11.50 (30 min)	Medical aspects of brachy treatment planning and dose constraints (ICRU 89 Level II Reporting)	P Petric
	Chairs: P Petric / U Mahantshetty	
11.50 – 12.30 (40 min)	Clinical Outcome: Disease and Toxicities	P Petric
12.30 – 12.50 (20 min)	EMBRACE Studies (Online / pre-recorded)	R Nout
12.50 – 13.00 (10 min)	Practical implementation - Tips and tricks & Roadmap	U Mahantshetty
13.00 – 13.15 (15 min)	Other Center Experience (2-3 presentations)	
13.15 – 13.30 (15 min)	Final Remarks and Closure of the Course	P Petric / T Hellebust / U Mahantshetty/ Local Organizers
13.30 – 14.15	<i>Lunch</i>	

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