



ESTRO

8th AROI - ESTRO Gynecology Course
MRI-CT Image Guided Adaptive Brachytherapy and advances in cervical cancer
with additional focus on molecular-guided EBRT/BT in endometrial cancers
6th-9th February,2025, Lucknow, India.

AROI Course Director and Faculty

Supriya Chopra, Radiation Oncologist, ACTREC, Tata Memorial Centre, Navi Mumbai, India (IN)

ESTRO Course Director and Faculty

Kari Tanderup, Medical Physicist, University Hospital, Aarhus (DK)

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

AROI Faculty

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

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Guest Faculty

Harjot Bajwa, Radiation Oncologist, American Institute of Oncology, Hyderabad (IN)

Ankita Gupta, Radiation Oncologist, ACTREC, Tata Memorial Centre, Navi Mumbai (IN)

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Local Faculty

Rajeev Gupta, Radiation Oncologist, KGMU, Lucknow (IN)

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ESTRO Coordinator:

Miika Palmu ESTRO, Brussels (BE) (Online)

Clinical/Beginner Track	Clinical/Advanced Track	Medical Physicists	New Topics 2025 Edition
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Day 1- Thursday 6th February	EBRT details: GTV-T init,CTV-HR,CTV-LR,ITV,, PTV, & treatment planning EBRT Contouring & planning workshops for EBRT, Advances in cervical cancer systemic therapies and biomarkers	Speaker
08:00 – 08:15 (15 min) 08:15-08:25 (10 min)	Welcome address & Inauguration Overview of Course	AROI Officers/ Local Faculty Course Directors
Session 1	Anatomy and Imaging of Cervix Cancer ,MRI essential and patient preparation for EBRT	
Hall 1	Chair: M Gupta, K Tanderup	
08:25 to 08:45 (15+5)	Anatomy of Female Pelvis as relevant to Uterine Neoplasms	PK Sharma
08:45 – 09:10 (20+5 min)	Imaging at diagnosis: MRI, CT, Ultrasound (Primary+lymph nodes)	PK Shrivastava
09:10- 09:20 (15+5 min)	Disease Assesment and Clinical Drawings at Baseline and at Brachytherapy	A Basu
09:20-09:40 (15+5 mins)	MRI acquisition for EBRT and BT planning: Image Sequences for Applicator Visualisation and reconstruction and essentials for image fusion	J Jain
09:40-10:00 (15+5 mins)	Patient preparation for IG-IMRT including immobilization, organ filling and reproducibility.	S Singh
10:00-10:25	<i>Tea/Coffee Break</i>	
Session 2	Evidence for IMRT, Target Delineation and Motion Management strategies	
Hall1	Chair: S Senapati,RA Nout	
10:30-10:55 (20+5 min)	Evidence and Rationale for IG-IMRT in Gynecological Cancer, Radical, Postoperative, Dose Fractionation including nodal dose response	A Gandhi
10:55-11:25 (25+5)	CTV for postoperative RT and GTV, HRCTV, LRCTV and risk-stratified CTV-E in Locally Advanced Cervical Cancer+Mini Quiz	S Chopra
11.50 –12:15 (20+5 min)	Para-aortic Nodal radiation – Indications, Contouring, Prescription.	B Rai
11:25-11:50 (20+5)	Strategies to manage target motion: ITV, Adaptive Replanning: Offline and Online Strategies	K Tanderup
Session 3	EBRT for cervix cancer: Planning Aims,Nodal boost and IG-IMRT QA	
Hall1	Chair: V Srinivasan, S Chopra	
11:35 – 12:00 (20+5 min)	IG-IMRT planning aims in reference to organ at risk sparing: Adjuvant and LACC setting.	RA Nout
12.00 – 12:25 (20 +5 min)	EBRT Nodal boost: Coverage Probability Planning, Dose Prescription and Techniques.	B Rai
12:25-12:50 (20+5 min)	How to plan IG-IMRT– physics aspects and plan quality criteria	J Jain
12:50-13:50	<i>Group Photograph/Lunch</i>	
Session 4	EBRT Workshop: Clinical and Physics	
Hall1	Chair: K Tanderup,RA Nout, S Chopra	
13:50-15:45	Physician's EBRT workshop: (TATA-ACT01-EBRT CT/MR, TATA-ACT-02-EBRT CT/MR) Feedback on homework case TATA-ACT01-EBRT CT/MR 20': Case Capsule TATA-ACT-02-EBRT CT/MR 5: Contouring GTV,HRCTV,LRCTV 45' : ITV Generation 15', CTV-E 10' Summary and Discussions	Clinical Faculty
	Physicists EBRT Planning Workshop (TATA-ACT01-EBRT CT/MR, TATA-ACT- 02-EBRT CT/MR) Feedback on Homework 20', Image Import, Registration and Fusion 15' Planning structures including nodal boost 15', Choice of Beams 15'Clinical Goals and Planning 30' Plan evaluation, Cone beam CT 10'	Physics+ Clinical Faculty
15:45-16:10 (20+5 min)	Automated IMRT Planning for Cervical Cancer	K Tanderup/J Jain
16:10-16:30	<i>Tea/Coffee break</i>	
Session 5	Advances in Systemic Therapy, Immunotherapy and Biomarkers of outcomes in Cervical Cancer	
	Chair: P Lal, CS Madhu	
16:35-16:50	InterIACE and Keynote A-18 Study: Key Findings and Interpretation	RA Nout
16:50-17:05	InterLACE Trial: Key observations and Implications in Indian Scenario	U Mahantshetty
17:05-17:20	Keynote A-18 Study: Results, PDL-1 positivity in BIOEMBRACE and Relevance in Indian Scenario	S Chopra
17:20-17:30	Discussion and Wrap up Day 1	

Day 2 – Friday 7th February	Radiobiology, Standard and Advanced BT Techniques, commissioning processes for BT, Application Video, Anesthesia and managing complications Contouring and Commissioning workshops for BT	Speaker
Session 6	Chair: K Tanderup, S Kumar	
08:30-09:05 (30+5 min)	Radiobiology relevant to Cervical Cancer Brachytherapy including HDR brachytherapy fractionation including recent fractionation studies	M Gupta
09:05-09:25 (15+5 min)	Sources for cervical cancer brachytherapy (Ir Vs Co Sources): Dosimetry Characteristics-practical considerations and costs for new centres	A Oinam
09:25-09:50 (20+5 min)	Evolution of standard Intracavitary brachytherapy	B Rai
10:00-10:40 (35+5 min)	Rationale and evolution of MRI Image Based Brachytherapy with focus on dose response relationship	RA Nout
10:40-11:10	Tea/Coffee Break	
Session 7a	Clinical Track Chair: RA Nout, M Rastogi	
11:10-11:30 (15+5 min)	Disease evaluation at Brachytherapy and Clinical Diagrams.	A Basu
11:30-11:55 (20+5 min)	Applicator and technique selection for advanced brachytherapy	U Mahantshetty
11:55-12:40 (15+10+15)	Video Presentation (IC+IS) and Practical Procedure discussions	S Chopra
12:40-13:00	Management of Anesthesia, Pain and intra and perioperative complications	G Srinivasa
13:00-13:30	Feedback on Target Delineation Homework	S Chopra/RA Nout
Session 7b	Physics Track Chair: K Tanderup, NK Painuly	
11:10-11:35 (20+5 min)	Commissioning and QA of HDR brachytherapy unit including TPS	M Das
11:35-11:55 (15+5 min)	Introduction to physical aspects of brachytherapy applicators.	J Jain
11:55-12:30 (25+5 min)	Commissioning & QA of BT Applicators standard and advanced applicators	K Tanderup/A Oinam
12:30--13:30 (60 min)	Hands on demonstration of Commissioning and Autoradiography Video	J Jain
13:30-14:15 pm	Lunch	
Session 8	Target Concepts and OAR delineations	Q and A
	Chair: S Chopra, R Gupta	
14:20-15:00 (30+10 min)	ICRU-GEC-ESTRO Recommendation: GTV, CTVs at diagnosis and at time of brachytherapy (GTV-BT, HRCTV-BT, IRCTV) for cervix cancer+ Mini-Quiz	RA Nout
15:00-15:25 (20+5 min)	Organs at risk: 2D points and 3D delineation and considerations for dose volume assessments (ICRU points, Rectum, Sigmoid, Bladder, Bladder substructures, Bowel, RV, PIBS)	A Gandhi
15:25-15:45	Tea/Coffee Break	
Session 9	Chair: K Tanderup, RA Nout, S Chopra Live Workshop: Brachytherapy Contouring on MRI and Planning	
15:45-17:15 (90 mins)	Beginner Track: TATA-ACT02-BTMR 15:45 15:55' Case description 15:55 to 16:05 GTV; 16:005-16: 25 HRCTV; 16:25- 16:50 IRCTV 16:50-17:15: Summary of contouring Joint discussion 17:15-17:35	Clinical Faculty
15:45-17:15 (90 mins)	Advanced Track: Rotterdam 01 15:45 to 16:00 Case description; GTV; 16:00-16:15; HRCTV 16:15-16:35 IRCTV 16:35-16:55 Summary of contouring exercise: 16:55-17:15 Joint discussion 17:15-17:35	Clinical Faculty
15:50--17:35 (90 minutes)	IC applicator reconstruction and placement of ICRU reference points 45' Planning Workshop on MRI and CT Intracavitary Image Based Planning (ACT-Tata 01,02 BT MR and CT)+ Aarhus datasets (ICRU level 1 Reporting) 45', EQD2 sheets Discussion Q and A 20'	All Physics Faculty+Clinical
17:35-17:45	Wrap up of Day 2	

Day 3 - Saturday 8th February	Target Concept on CT/Ultrasound, Principles of BT planning of IC , IC+IS & IS Applicator reconstruction, Workshops: Contouring (MDs), Applicator reconstruction, New Studies	Speaker
Session 10	Target concepts on CT, Treatment planning recommendations and applicator reconstruction	
	Chair: RA Nout, P Lal	
08:30 - 08:55 (20+5 min)	CT and Ultrasound for Brachytherapy planning: Essentials for Image Guided BT	H Bajwa
08.55 - 09. 35 (30+10 min)	CT contouring for brachytherapy (MR diagnosis-CT-Ultrasound BT; CT Diagnosis-CT BT)	U Mahantshetty
09.35 – 10:10 (30+5 min)	ICRU-GEC-ESTRO treatment planning recommendations (Dose constraints) for 3D Brachytherapy(MRI/CT) with special emphasis on implant loading patterns	K Tanderup
10:10-10:35 (20+5 min)	IC-IS Applicator reconstruction on MRI and CT: Tips and Tricks for Physicists and Clinicians	J Jain
10:35 – 11.05	Coffee break	
	EQD2 sheets,Interstitial planning,Treatment planning optimisation	
Session 11	Chair: Kari Tanderup, Sharad Singh	Q and A:
11.05 –11:30 (20+5 mins)	Use of EBRT+BT EQD2 sheets: Clinical Use with live examples with different dose fractionations	A Gupta
11:30-11:55 (20+5 mins)	Principles off planning of pure interstitial brachytherapy for gynecological cancers	M Das
11:55 – 12:25 (25+5 mins)	Clinical Application of Treatment Planning Optimisation: Case examples of Good and Poor responders, challenging tumours and anatomy	S Chopra
12:25-13:00 (35 mins)	Physics Treatment Planning Homework EBRT and BT and Q and A	K Tanderup/ J Jain/A Oinam
13:00-13:50	Lunch	
Session 12 14:00-15:30	Chair: K Tanderup, U Mahantshetty,S Chopra Live Workshop for Brachytherapy Contouring on CT and Treatment Planning,	
14:00-15:30	Physicians Workshops: TATA-ACT-04-BT-CT Case Capsule 14:15-14:30 Imaging and Clinical Finding Interpretation (CT/Ultrasound) 14:30-15:00 Delineation of HRCTV. Discussions: 15:00-15:30	Clinical Faculty
14:00-15:30	Physicists Workshop IC-IS Reconstruction 14:15-15:30	Physics Faculty
15:30-15:50	Tea/Coffee Break	
Session 13	Chair:RA Nout, S Chopra Advanced track experience presentations and safety culture in brachytherapy	
15:50-16:30 (7+7+7+7+12)	Advanced Track Presentations in Cervical Cancer, Discussions, Q And A Indian Registry: Multicentric Real world data on Cervix cancer practice.	K Shrivastava A Munandar S Singh A Gupta TBD
16:30-17:10	Risk Stratified Studies in Cervical Cancer (RAPID,EMBRACE-High Risk) CT Based Brachytherapy Asian Gynec Brachytherapy Registry (FERN-Gyn-002) Oligorecurrence and Reirradiation Registration studies in Cervical Cancer	RA Nout U Mahantshetty S Chopra
15:50-17:10	15:50-16:30 IC-IS treatment planning (ACT-Tata 02 BT MR and CT)+ Aarhus datasets (Ring and Ovoid based Needles) (Different vendor environments) 16:30-17:15 EQD2 spread sheet evaluation	Clinical+Physics Faculty
17:10-17:40 (15+15)	Patient Specific QA and Failure Mode Analysis Implementation of Safety culture and Error Reporting in Brachytherapy Practice.	K Tanderup A Gupta
19.30	Course Dinner	

Day 4 – Sunday 9th February	Participant Feedback, Endometrium Cancer, Indian Scenario	Speaker
	Epidemiology of Endometrial Cancer, Staging, Risk stratification, India, Asia Survey, Experience from Institutions	
Session 14	Chair: RA Nout, Sudhir Singh	
09:00-09:15 (15 min)	Epidemiology of Endometrial Cancer in India	G Srinivasa
09:15-10:05 (40+10)	Updates in Staging of Endometrial Cancer, Risk Stratification and Treatment Selection	RA Nout
10:05-10:50 (40+5 min)	Endometrial Cancer Survey+Quiz Challenging Scenarios	A Basu/ S Chopra/ M Verma
10:50-11:30 (7+7+7+7+5)	Real World Data on Endometrial Cancers Experience in implementation of molecular markers in endometrial cancer from Indian Institutions Asian Registration study on Endometrial Cancer (FERN- Gyn 001)	S Chopra S Senapati T Bhattacharya H Bajwa S Chopra TBD
11:30-11:50	<i>Tea/ Coffee break</i>	
	Medically Inoperable Endometrial Cancer, Recurrence and Reirradiation in Gyn Cancers	
Session 15	Chairs: U Mahantshetty, S Gupta	Q and A
11:50-12:15 (20+5 min)	Management of Medically Inoperable Endometrial Cancer	RA Nout
12:15-12:40 (20+5 min)	Management of vaginal recurrence of Endometrial Cancer including guidelines for recurrent cancers	RA Nout
12:40-13:10 (25+5 min)	Reirradiation in Cervix and Endometrial Cancer	S Chopra
13:10-13:30	Participant Feedback Final Remarks and Valedictory function	All