



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)

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AROI Faculty

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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 S Chopra/ K Tanderup/R Nout
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 min)	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- 09:30 (15+5 min)	Disease Assesment and Clinical Drawings at Baseline	A Basu
09:30-09:50 (15+5 min)	Patient preparation for IG-IMRT including immobilization, organ filling and reproducibility.	S Singh
09:50-10:10 (15+5 min)	MRI acquisition for EBRT and BT planning: Image Sequences for EBRT and Applicator Visualisation andreconstruction,Essentials for image fusion	J Jain
10:10-10:40	Tea/Coffee Break	
Session 2	Evidence for IMRT, Target Delineation and Planning Aims	
Hall1	Chair: S Senapati,RA Nout	
10:40-11:05 (20+5 min)	Evidence and Rationale for IG-IMRT in Gynecological Cancer, Radical, Postoperative, Dose Fractionation including nodal dose response	A Gandhi
11:05-11:35 (25+5 min)	GTV, HRCTV, LRCTV and risk-stratified CTV-E in Locally Advanced Cervical Cancer+ CTV for postoperative RT+Mini Quiz	S Chopra
11.35–12:05 (20+5 min)	Para-aortic Nodal radiation – Indications, Contouring, Prescription.	B Rai
12:05-12:30 (20+5 min)	IG-IMRT dose planning aims in reference to organ at risk sparing: Adjuvant and LACC setting.	RA Nout
Session 3	EBRT for cervix cancer: Motion Management,Nodal boost and IG-IMRT QA	
Hall1	Chair: V Srinivasan, S Chopra	
12:30 –13:00 (25+5)	Strategies to manage target motion: ITV, Adaptive Replanning and Coverage Probability Planning	K Tanderup
13:00-13:25 (20 +5 min)	How to plan IG-IMRT- physics aspects, plan quality criteria	J Jain
13:25-14:30	Group Photograph/Lunch	
Session 4	EBRT Workshop: Clinical and Physics	
Hall1	Chair: K Tanderup,RA Nout, S Chopra	
14:30-16:10	Physician's EBRT workshop: (TATA-ACT01-EBRT CT/MR (Beginner Track), TATA-ACT-02-EBRT CT/MR (Advanced Track)) 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 10', CTV-E 10' + Advanced case for discussion delineation and planning aspects (TATA-ACT-03-EBRT CT/MR) Summary and Discussions	Clinical Faculty
14:30-16:10	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; Conce Beam CT	Physics+ Clinical Faculty
16:10-16:30	Tea/Coffee break	
16:30-17:20	Continuation of physics EBRT planning workshop (Session 4) Building Automated IG-IMRT planning Models	Physics Faculty J Jain/ K Tanderup
Session 5	Advances in Systemic Therapy, Immunotherapy and Biomarkers of outcomes in Cervical Cancer	
Hall1	Chair: P Lal, R Vashishtha	
16:35-16:50	InterLACE 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) Ring and Ovoid Based Interstitial procedure 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 Brachytherapy 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 – 10:00 (20+5 min)	IC-IS Applicator reconstruction on MRI and CT: Tips and Tricks for Physicists and Clinicians	JJain
10:00-10:35 (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
10:35 – 11.05	Coffee break	
	EQD2 sheets,Interstitial planning,Treatment planning optimisation	
Session 11	Chair: Kari Tanderup, Sharad Singh	
11.05 –11:30 (20+5 mins)	Use of EBRT+BT EQD2 sheets: Clinical Use with live examples with different dose fractionations+ Practical session	A Gupta
11:30-11:55 (20+5 mins)	Principles of 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	Chair: K Tanderup, U Mahantshetty,S Chopra	
14:00-15:30	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 (12+7+7+7+7)	Overview of Gynecological Brachytherapy in Uttar Pradesh+ Advanced Track Presentations in Cervical Cancer+Challenging Case presentations	K Shrivastava A Munandar S Singh A Gupta R Madhavan
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 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 AROI-IBS Survey+Quiz Challenging Scenarios+Discussion	A Basu/ S Chopra/ M Verma
10:50-11:30 (7+7+7+7+5)	Experience in implementation of molecular markers in endometrial cancer from Indian Institutions + Real World Scenario Asian Registration study on Endometrial Cancer (FERN- Gyn 001)	S Chopra S Senapati T Bhattacharya H Bajwa S Chopra
11:30-11:50	<i>Tea/ Coffee break</i>	
	Medically Inoperable Endometrial Cancer, Recurrence and Reirradiation in Gyn Cancers	
Session 15	Chairs: U Mahantshetty, Seema 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