



9th AROI-Gynecology Course-Endorsed by ESTRO

**MRI-CT Image Guided Adaptive Brachytherapy, including advances in cervical cancer
with additional focus on molecular-guided EBRT/BT in endometrial cancers
26th-29th March, 2026, New Chandigarh, India.**

AROI Course Director and Faculty

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Guest Faculty

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ESTRO School

Miika Palmu *ESTRO, Brussels (BE) (Online)*

Andrea Collavini, *ESTRO, Brussels (BE) (Online)*

Clinical -Beginner Track

Clinical-Advanced Track

Physics Track

Day 1- Thursday 26th March	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	Director HBCH/ AROI Officers/ Course Directors/ NZ AROI/ Organising Secretary/
Session 1	Imaging of Cervix Cancer , Disease Assessment, MRI essential and patient preparation for EBRT	
Hall 1	Chair: S Senapati, RA Nout	
08:30 to 08:55 (20+5 min)	Imaging at diagnosis: MRI, CT, Ultrasound (Primary+lymph nodes)	B Rai
08:55 – 09:15 (15+5 min)	Disease assessment, Staging and Clinical Drawings at baseline	A Basu
09:15- 09:35 (15+5 min)	IMRT in locally advanced cervical cancer: Dose and fractionation including hypo-fractionation	A Gandhi
09:35-09:55 (15+5 min)	Patient preparation for IG-IMRT including immobilization, organ filling and CT image acquisition.	A Shinghal
09:55-10:15 (15+5 min)	Multimodality Image Fusion for EBRT planning: Practical examples of diagnostic and treatment planning images.	P Sawant
10:15-10:20	Discussion	
10:20-10:45	Tea/Coffee Break	
Session 2	Evidence for IMRT, Target Delineation and Planning Aims	
Hall1	Chair: M Gupta, K Tanderup	
10:50-11:20 (25+5 min)	GTV, HRCTV, LRCTV and risk-stratified CTV-E for EBRT in Locally Advanced Cervical Cancer+ CTV for postoperative RT+Mini Quiz	S Chopra
11:20-11:50 (25+5 min)	IG-IMRT dose planning aims for target and organs at risk in adjuvant and LACC setting including recent updates.	RA Nout
11:50-12:15 (20+5 min)	Para-aortic Nodal radiation – Indications, Contouring, Prescription.	B Rai
12:15-12:20	Discussion	
Session 3	EBRT for cervix cancer: Motion Management,Nodal boost and IG-IMRT QA	
Hall 1	Chair: V Srinivasan, S Chopra	
12:20 –12:50 (25+5)	Strategies to manage target motion: ITV, Adaptive Replanning and Coverage Probability Planning	K Tanderup
12:50-13:15 (20 +5 min)	How to plan IG-IMRT– physics aspects, plan quality criteria	J Jain
13:15-14:10	Group Photograph/Lunch	
Session 4	EBRT Workshop: Clinical and Physics	
Hall1	Chair: K Tanderup,RA Nout, S Chopra	
Hall 1+Room 2 14:15-15:45	Feedback on Homework; Group Allocation 15 mins (Hall 1; all)	S Chopra/RA Nout/ P Sawant/ G Baijal/R Madhavan/
	Physician's EBRT workshop: (TATA-ACT01-EBRT CT/MR (Beginner Track), Case Capsule 5: Contouring GTV,HRCTV,LRCTV 45' : ITV Generation 10', CTV-E 10' Summary and Discussions	Clinical Faculty as per groupings
	TATA-ACT-03-EBRT CT/MR (Advanced Track) Case, Fusion, GTV, HRCTV, Nodal Boosts, Dose Prescription, Overlap avoidance with IGBT, Clinical planning aspects	Clinical Faculty as per groupings
14:25-15:45 Medical Physics Physics Room	Physicists EBRT Planning Workshop (TATA-ACT01-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	K Tanderup, Y Ghadi, M Das, J Jain+ Physics faculty+ Clinical Faculty
15:45-16:10	Tea/Coffee break	
16:10-17:30 Medical Physics Room	Continuation of physics EBRT planning workshop (Session 4) Building Automated IG-IMRT planning Models	Physics +Clinical Faculty K Tanderup/J Jain/V Saini
Session 5 Hall1	Advances in Systemic Therapy and IG-IMRT/BT, Compliance to chemoradiation, Brachytherapy availability and Practice surveys	
	Chair: R Vashishth, S Gulia	
16:10-16:30	Updates from Recent Studies including concurrent systemic therapy	RA Nout
16:30-16:45	Status of EBRT and Brachytherapy Infrastructure in India	SN Senapati
16:45- 16:55	Compliance to Cervix Cancer Guidelines : Results from NCG Study	S Chopra
16:55-17:10	Uptake of Advanced BT: Learnings from AROI ESTRO and GEC ESTRO India Survey	R Mariyala
17:10-17:25	Neoadjuvant Chemotherapy Survey: International Survey including compliance data from Indian centres.	U Mahanshetty
17:25-17:30	Discussion and Wrap up of Day 1	

Day 2 – Friday 27th March	<i>Radiobiology, Standard and Advanced BT Techniques, commissioning processes for BT, Application Video, Anesthesia and managing complications Contouring and Commissioning workshops for BT</i>	Speaker
Session 6 Hall 1	Chair: K Tanderup, F Patel	
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	F Patel
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 Hall 1	Clinical Track Chair: M Gupta, B Rai	
11:10-11:30 (15+5 min)	Clinical disease evaluation at Brachytherapy and Clinical Diagrams	H Bajwa
11:30-11:55 (20+5 min)	Applicator and technique selection for advanced brachytherapy	RA Nout/TBD
11:55-12:35 (30+10)	Video Presentation (IC+IS) Ring and Ovoid Based Interstitial procedure and Practical Procedure discussions	S Chopra/ RA Nout
12:35-13:15 (30+5)	ICRU-GEC-ESTRO Recommendation: GTV, CTVs at diagnosis and at time of brachytherapy (GTV-BT, HRCTV-BT, IRCTV) for cervix cancer+ Mini-Quiz	S Chopra
Session 7b Physics Room	Physics Track Chair: K Tanderup, A Oinam	
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.	Y Ghadi
11:55-12:30 (25+5 min)	Commissioning & QA of BT Applicators standard and advanced applicators	K Tanderup/A Oinam
12:30--13:15 (45 min)	Hands on demonstration of Commissioning and Autoradiography Video	J Jain/ Ramandeep Singh/ Gurvinder Singh/Vinay Saini
13:15-14:00 pm	Lunch	
Session 8	Target Concepts and OAR delineations	
	Chair: F Patel, RA Nout	
14:00-14:25 (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
14:40-15:00 (15+5 min)	Management of Anesthesia, Pain and intra and perioperative complications	Srinivasa G
15:00-15:25 (20+5)	Feedback on MR BT Homework (Beginner +Advanced Track)	S Chopra/ RA Nout
15:25-15:45	Tea/Coffee Break	
Session 9	Chair: K Tanderup, RA Nout, S Chopra Live Workshop: Brachytherapy Contouring on MRI and Planning	RA Nout/ S Chopra/ B Rai/A Gandhi/T Dora/ N Ballari/R Madhawan/ P Sawant
15:45-17:35 (90 mins) Hall 1	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 Beginner+advanced	Clinical Faculty
15:45-17:35 (90 mins) Room 2	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 Beginner+Advanced	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 01,05 BT MR and CT)+ Aarhus datasets (ICRU level 1 Reporting) 45', EQD2 sheets Discussion Q and A 20'	All Physics Faculty+Clinical Faculty (U Mahantshetty, A Basu, G Srinivasa,H Bajwa)
17:35-17:40	Wrap up of Day 2	

Day 3 - Saturday 28th March	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	
Hall1	Chair: K Tanderup, B Rai	
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	J Jain
10:00-10:35 (30+5 min)	GEC ESTRO / IBS / ABS 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	
Session 11	EQD2 sheets,Interstitial planning,Treatment planning optimisation	
Hall 1	Chair: RA Nout, F Patel	
11.05 –11:30 (20+5 mins)	Demonstration of GEC ESTRO /IBS /ABS treatment planning EQD2 sheets: dose, OTT, histology	K Tanderup/U Mahantshetty
11:30-12:00 (25+5 mins)	Clinical Application of Treatment Planning Optimisation: Case examples of Good and Poor responders, challenging tumours and anatomy	S Chopra
12:00-12:20 (15+5 mins)	Management of Late adverse effects of Pelvic Radiation	TBD
12:20 – 12:45 (20+5 mins)	Perineal Interstitial Brachytherapy and Physics Aspects of Interstitial Brachytherapy Planning	TBD Y Ghadi
12:45-13:20 (35 mins)	Physics Treatment Planning Homework EBRT and BT and Q and A	K Tanderup/ J Jain/ G Singh/R Singh
13:20-14:15	Lunch	
Session 12 14:15-15:30	Chair: K Tanderup, U Mahantshetty,S Chopra Live Workshop for Brachytherapy Contouring on CT and Treatment Planning,	U Mahantshetty, S Chopra, T Dora, A Basu, H Bajwa, R Mariyala, R Madhawan
14:00-15:30 Hall 1	Physicians Workshops: TATA-ACT-04-BT-CT Case Capsule 14:00-14:10 14:15- 14:45 Delineation of HRCTV Imaging and Clinical Finding Interpretation (CT/Ultrasound) clinical practice 14:45-15:00 (S Chopra) Discussions: 15:00-15:30 All faculty and participants	Clinical Faculty
14:00-15:30 Medical Physics Room	Physicists Workshop IC-IS Reconstruction 14:15-15:30	Physics+Clinical Faculty (K Tanderup, RA Nout, A Gandhi)
15:30-15:50	Tea/Coffee Break	
Session 13	Chair:RA Nout, S Chopra Advanced track experience presentations and safety culture in brachytherapy	
Hall 1 15:50-16:40 (7+7+7+7+7+7)	Advanced Track Presentations in Cervical Cancer Centre Data (Image GuideAdoption of Neoadjuvant Chemotherapy/ Immunotherapy/ Ongoing and completed Phase III trials);Outcomes of CT Based or MR Based BT propensity matched analysis/ Implementation of Guidelines/Videos different evndors	TBD
Hall 1 16:40-17:10 (10+10+10)	Risk Stratified Studies in Cervical Cancer (RAPID ,EMBRACE-High Risk) CT Based Brachytherapy: IMPACT FERN/FBG studies : 3D Printed Technology for Brachytherapy and Asian Gyn BT Registry	RA Nout U Mahantshetty S Chopra
Medical Physics Room 15:50-17:10	15:50-16:30 IC-IS treatment planning (ACT-Tata 01,02 BT MR and CT)+ Aarhus datasets (Ring and Ovoid based Needles) (Different vendor environments) 16:30-17:15 EQD2 spread sheet evaluation	Physics Faculty+Clinical
Hall 1 17:05-17:30	Patient Specific QA and Failure Mode Analysis Implementation of Safety culture and Error Reporting in Brachytherapy Practice.	K Tanderup/S Chopra
17:30-17:35	Wrap up, Course Dinner (19:30)	

Day 4 – Sunday 29th March	Endometrium Cancer, Indian Scenario	Speaker
	Risk stratification, Case based discussions India, AROI-IBS Survey, Experience from Institutions	
Session 14 Hall 1	Chair: RA Nout, S Gulia	
09:00-09:40 (30+10)	Updates in Staging of Endometrial Cancer, Risk Stratification and Treatment Selection with case examples.	RA Nout
09:40-10:25 (10+35)	AROI-ESTRO-IBS Survey and Case based Quiz and discussion (3 cases)	A Basu/ S Chopra/ TBD
10:25-11:00 (7+7+7+7+7)	Access to Molecular Markers in Gyn Cancers+ Experience in implementation of molecular markers in endometrial cancer from Indian Institutions + Real World Scenario Asian Registration study on Endometrial Cancer (FERN- Gyn 001)	TBD
11:00-11:20 (15+5)	Updates in Systemic Therapy for Endometrial Cancer	S Gulia
09:00-11:00 Medical Physics Room	IC-IS Treatment planning and EQD 2 sheets continued	All Physics Faculty+Clinical
11:20: 11:35	<i>Tea/ Coffee break</i>	
Hall 1	Medically Inoperable ENdometrial cancer Vaginal Cancer, Postoperative vaginal recurrences and Reirradiation in Gyn Cancers, Oligometastasis,	
Session 15	Chairs: B Rai, TBD	Q and A
11:35-11:55 (15+5 min)	Management of Medically Inoperable Endometrial Cancer	RA Nout
11:55-12:20 (20+5 min)	Management of vaginal recurrence of Endometrial Cancer including guidelines for recurrent cancers/EMBRAVE study	RA Nout
12:20-12:45 (20+5 min)	Reirradiation and oligometastasis in Gynecological Cancers: Updates from Studies and ESTRO Initiatives	S Chopra
12:45-13:00	Participant Feedback Final Remarks and Valedictory function.	All