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ESTRO

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

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

ESTRO Course Director and Faculty

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

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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	<i>Discussion</i>	
10:20-10:45	<i>Tea/Coffee Break</i>	
Session 2	Evidence for IMRT, Target Delineation and Planning Aims	
Hall1	Chair: TBD, 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	<i>Discussion</i>	
Session 3	EBRT for cervix cancer: Motion Management,Nodal boost and IG-IMRT QA	
Hall 1	Chair: V Srinivasan, U Mahantshetty	
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	<i>Group Photograph/Lunch</i>	
Session 4	EBRT Workshop: Clinical and Physics	
Hall1	Chair: K Tanderup,RA Nout, S Chopra	
	Feedback on Homework; Group Allocation 15 mins (Hall 1; all)	S Chopra/RA Nout/ P Sawant/ G Baijal/ T Bhattacharya/R Madhavan
Hall 1+Room 2 14:15-15:45	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; Cone Beam CT	K Tanderup, Y Ghadi, M Das, J Jain+ Physics faculty+ Clinical Faculty
15:45-16:10	<i>Tea/Coffee break</i>	
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	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 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
11:55-12:35 (30+10)	Video Presentation (IC+IS) Ring and Ovoid Based Interstitial procedure and Practical Procedure discussions	S Chopra/ R A
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 Comissioning 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	RA Nout/ S Chopra/ B Rai/A Gandhi/T Dora/ N Bellari/R Madhawan/ P Sawant
	Live Workshop: Brachytherapy Contouring on MRI and Planning	
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; 16:00-16: 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 28 th 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	<i>Coffee break</i>	
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	<i>Lunch</i>	
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, T Bhattacharya)
15:30-15:50	<i>Tea/Coffee Break</i>	
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