ESTRO teaching course on

From 2D to 3D Radiotherapy

Cairo, 28 February – 4 March 2010

Teaching staff:	**Michael Brada (MB), United Kingdom** **Ben Mijnheer (BM), Netherlands** **Eduard Gershkevitsh (EG), Estonia** **Morten Høyer (MH), Denmark** **Philippe Maingon (PM), France** **Helen McNair (HMN), United Kingdom** **Alessio Morganti (AM), Italia** **Stan Vatnitsky (SV), Austria** **Thomas Wiegel (TW), Germany**
Guest lecturer:	**Mahmoud El-Gantiry (MEG), Egypt**

SCIENTIFIC PROGRAMME

SUNDAY	28 FEBRUARY 2010	(Sheraton Cairo Hotel)	
08.00 – 09.00	Registration		
09.00 – 09.30	Welcome and introduction		M. Brada
09.30 – 10.00	Evolution of radiation therapy from 2D to 3D		P. Maingon
10.00 – 10.30	Status of radiotherapy in Egypt and introduction of new technologies		M. El-Gantiry
	Imaging to define tumour extent and organs at risk and ICRU concepts		
10.30 – 11.00	Imaging modalities in radiotherapy		S. Vatnitsky / P. Maingon
11.00 – 11.20	*Coffee break*		
11.20 – 11.40	Positioning and immobilization for RT – practical aspects		H. McNair
11.40 – 12.10	Target volume selection and delineation (GTV, CTV, ITV, OAR and examples)		M. Høyer
12.10 – 12.40	Geometric uncertainties and set-up margins		B. Mijnheer
12.40 – 13.00	Discussion		
13.00 – 14.00	*Lunch*		

Target volume visualisation and delineation – practical examples

14.00 – 14.30	GI	A. Morganti
14.30 – 15.00	GU	M. Høyer
15.00 – 15.30	Head and neck	P. Maingon
15.30 – 16.00	*Coffee break*	
16.00 – 16.30	Lung	M. Brada
16.30 – 17.15	Visit to exhibition	
17.15 – 19.00	Welcome reception	

MONDAY	1 MARCH 2010 (Sheraton Cairo Hotel)	

Treatment planning

08.30 – 09.15	Guidelines for transition from 2D to 3D radiotherapy and IMRT	S. Vatnitsky
09.15 – 09.45	Treatment planning for 3D conformal RT-evaluation of plans	M. Brada
09.45 – 10.15	Dose-volume tolerances for critical structures from 2D to 3D	M. Høyer
10.15 – 10.45	*Coffee break*	
10.45 – 11.15	Planning of IMRT: introduction	B. Mijnheer
11.15 – 11.45	Planning of IMRT: clinical aspects	T. Wiegel
11.45 – 12.00	Discussion	
12.00 – 13.00	*Lunch*	

Clinical application of 3D RT / IMRT planning and delivery

13.00 – 13.30	Practical issues of planning and delivery (with reference to breast cancer)	H. McNair
13.30 – 14.00	Prostate and bladder	T. Wiegel
14.00 – 14.30	Head and neck	P. Maingon
14.30 – 15.00	Lung	M. Brada
15.00 – 15.30	*Coffee break*	

Planning case presentation

15.30 – 17.00	Prostate	T. Wiegel
	Head and neck	P. Maingon
	Breast	A. Morganti

TUESDAY	2 MARCH 2010	(Sheraton Cairo Hotel)	

Quality assurance (QA) of treatment planning and delivery

08.30 – 10.00	Why do we need QA of radiotherapy? A clinician's and physicist's perspective	A. Morganti / E. Gershkevitsh
10.00 – 10.30	Verification of treatment delivery: principle and *in vivo* dosimetry	B. Mijnheer
10.30 – 11.00	*Coffee break*	
11.00 – 11.30	Verification of treatment delivery: the role of imaging	H. McNair
11.30 – 12.00	QA of treatment planning systems for 3D conformal RT	E. Gershkevitsh
12.00 – 12.30	Data transfer and QA of record-and-verify systems	S. Vatnitsky
12.30 – 13.00	Discussion	
13.00 – 16.30	*Lunch and companies' satellite lectures*	

WEDNESDAY	3 MARCH 2010	(Sheraton Cairo Hotel)	
	Principles of novel RT techniques		
08.30 – 08.50		Image-guided and adaptive RT – clinical introduction	M. Høyer
08.50 – 09.15		Technical solutions for IGRT	B. Mijnheer
09.15 – 09.45		Stereotactic radiotherapy and radiosurgery: brain	M. Brada
09.45 – 10.15		Stereotactic radiotherapy and radiosurgery: extracranial	M. Høyer
10.15 – 10.45		Proton and other particle therapies	S. Vatnitsky / M. Brada
10.45 – 11.15		*Coffee break*	
	Implementing modern RT techniques in your department		
11.15 – 11.35		Assessing clinical needs and RT utilization rates	M. Høyer
11.35 – 11.55		Choosing equipment	E. Gershkevitsh
11.55 – 12.15		Department staff and training	P. Maingon
12.15 – 12.35		Virtual simulation and treatment imaging – workflow and staff responsibilities	H. McNair
12.35 – 13.00		Panel discussion	
13.00 – 14.00		*Lunch*	
	The evidence base for 3D and other complex RT		
14.00 – 14.30		Principles of evidence-based medicine	M. Brada
	The evidence base for 3D and other complex RT *(parallel session for clinicians)*		
14.30 – 15.00		Breast	M. Høyer
15.00 – 15.30		GU	T. Wiegel
15.30 – 16.00		*Coffee break*	
16.00 – 16.30		Lung and mediastinum	M. Brada
16.30 – 17.00		GI	A. Morganti
	Dose calculation and dose verification *(parallel session for physicists)*		
14.30 – 15.00		Dosimetry equipment for 3D radiotherapy	E. Gershkevitsh
15.00 – 15.30		The IAEA TLD audit system of radiotherapy beam calibration	S. Vatnitsky
15.30 – 16.00		*Coffee break*	
16.00 – 16.30		Dose calculation algorithms in treatment planning systems	E. Gershkevitsh
16.30 – 17.00		Guidelines for the verification of IMRT: the ESTRO booklet	B. Mijnheer

THURSDAY	4 MARCH 2010	(Sheraton Cairo Hotel)	

The evidence base for 3D and other complex RT – continued *(parallel session for clinicians)*

08.30 – 09.00	Head and neck	P. Maingon
09.00 – 09.30	CNS tumours in adults	M. Brada
09.30 – 10.00	Principles and practice of palliative RT	A. Morganti
10.00 – 10.30	Discussion	

Dose calculation: practical exercises *(parallel session for physicists)*

08.30 – 09.00	The IAEA TRS 398 dosimetry code of practice: structure and formalism	S. Vatnitsky
09.00 – 09.45	Dose calculations using the IAEA TRS 398 data sheets	S. Vatnitsky / B. Mijnheer
09.45 – 10.30	Monitor unit calculations: examples showing the main steps	B. Mijnheer
10.30 – 11.00	*Coffee break*	
11.00 – 11.30	Where next in radiotherapy – biology meets technology	M. Brada
11.30 – 12.00	Discussion	The Faculty
12.00 – 12.15	Handing out of the certificates	