

Acta Oncologica Symposium

Image-guided and adaptive radiotherapy

Aarhus - June 5-7, 2008



Final programme

Welcome!

It is our great pleasure to welcome you to Aarhus, Denmark for the 6th Acta Oncologica symposium on image-guided radiotherapy (IGRT).

We look forward to exciting scientific sessions, with presentations from leading scientists from several continents. The meeting has attracted almost 200 physicians, physicists, radiobiologists and other scientists from the Nordic countries and internationally.

All participants and accompanying persons are invited to the social programme. Thursday evening we visit "The Old Town", a national open air museum of urban history and culture in Aarhus city. The tour includes a guided tour and buffet dinner. On Friday night, the conference gourmet dinner will be held at Hotel Marselis.

We hope you will enjoy the meeting and your time in Aarhus - the "city of smile"!

Local organizing committee

Jens Overgaard
Jørgen Petersen
Cai Grau

Morten Hoyer
Jolanta Hansen

Jacob Christian Lindegaard
Ludvig Paul Muren



Thursday June 5, 2008

- 2:00 pm – 2:10 pm **Opening of the Symposium**
Cai Grau
- 2:10 pm – 3:10 pm **Session 1: Basic imaging physics and technology**
Chairperson: Dag Rune Olsen
- Recent advances in CT technology*
Jacob Geleijns, Leiden, The Netherlands
- Applications of PET in radiation treatment planning: Image characteristics and presentation*
Arne Skretting, Oslo, Norway
- MRI for radiotherapy professionals*
Leif Østergaard, Aarhus, Denmark
- 3:10 pm – 3:30 pm Coffee break
- 3:30 pm – 4:30 pm **Session 2: Meet the industry**
Chairpersons: Dirk Verellen and Jørgen Petersen
- Brainlab
Implementation of image guided radiotherapy using Exactrac with Robotics in Aalborg
Jesper Carl, Aalborg, Denmark
- Elekta
Experiences of IGRT, VMAT and hopes for combined INTREPID VMAT
Vibeke Nordmark Hansen, Sutton, United Kingdom
- Varian
Bringing the RapidArc technique into clinical practice: First experiences at Rigshospitalet, Copenhagen
Stine Sofia Korreman, Copenhagen, Denmark
- 4:45 pm – Visit at "The Old Town", a national open air museum of urban history and culture, located in Aarhus city. The tour includes a guided tour and buffet dinner. Busses leave in front of hotel at 4:45 p.m. sharp, return at 9-11 pm.

Friday June 6, 2008

8:15 am – 10:45 am

Session 3: Biological imaging

Chairpersons: C. Clifton Ling and Jens Overgaard

Noninvasive molecular imaging of tumor hypoxia in human xenografts: comparing hypoxia-induced gene expression with endogenous and exogenous hypoxia markers
Gloria Li, New York, USA

Dose painting based on MRI and perfusion imaging
Dag Rune Olsen, Oslo, Norway

Dose painting and optimisation
Markus Alber, Tübingen, Germany
Use of functional imaging for head and neck radiotherapy planning Chris Nutting, London, UK

Functional imaging in rectal cancer
Karin Haustermans, Leuven, Belgium

DCEMRI monitoring of canine tumors during fractionated radiotherapy
Åste Søvik, Oslo, Norway

PET-hypoxia resolution
Morten Busk, Aarhus, Denmark

Treatment planning optimisation based on imaging tumour proliferation and cell density
Alexandru Dasu, Umeå, Sweden

Treatment optimisation based on PET hypoxia
Iuliana Toma-Dasu, Stockholm, Sweden

Dynamic contrast enhanced MRI of bladder cancer and implications for biological image adapted radiotherapy
Kathrine Røe, Oslo, Norway

10:45 – 11:10 am

Coffee break

11:10 – 12:20 am

Session 4: Technology for in-room anatomical imaging

Chairpersons: Claudio Fiorino and Lars Præstegaard

An overview of volumetric imaging technologies and their quality assurance
Dirk Verellen, Brussels, Belgium

Possibilities and challenges in CBCT imaging
Marcel van Herk, Amsterdam, The Netherlands

Tomotherapy
Rock Mackie, Wisconsin, USA

Simulation of CBCT projections
Erik Wåhlin, Stockholm, Sweden

Lunch break

1:15 pm – 2:35 pm **Session 5: Image management and registration**
Chairpersons: Rock Mackie and Kari Tanderup

Image Registration for IGRT: Opportunities and challenges
Marc Kessler, Ann Arbor, USA

Integration through registration: Deformable registration for IGRT
Kristy Brock, Toronto, Canada

Accelerating compute intensive image processing in image-guided radiotherapy
Karsten Østergaard Noe, Aarhus, Denmark

Characterisation of radiotherapy planning volumes using textural analysis
William H. Nailon, Edinburgh, UK

An investigation of the accuracy of radiotherapy dose plans calculated on the basis of tissue-segmented CT images
Karsten Eilertsen, Oslo, Norway

A phantom for characterization of geometrical linearity in MR
Tor Arne Vestad, Oslo, Norway

2:35 pm – 3:00 pm Coffee break

3:00 pm – 5:20 pm **Session 6: Clinical studies - pelvis**
Chairpersons: Karin Haustermans and Ludvig Muren

Physics aspects of prostate tomotherapy: planning optimization and image-guidance issues
Claudio Fiorino, Milano, Italy

IGRT in rectal cancer
Vincenzo Valentini, Rome, Italy

Image guided adaptive brachytherapy in cervix cancer
Richard Pötter, Vienna, Austria

Image-guidance protocol comparison: supine and prone setup accuracy for pelvic radiation therapy
Martin Fuss, Portland, USA

Intra-fractional prostate motion and set-up error progression studied by continuous electronic portal imaging
Per Rugaard Poulsen, Stanford/Aarhus, USA/Denmark

A new fiducial marker for image guided radiotherapy of prostate cancer
Jesper Carl, Aalborg, Denmark

A comparison between skin, bone and gold markers for prostate external radiotherapy treatment: Impact on PTV margins
Arve Kylling, Ålesund, Norway

The impact of on-line correction for rotational organ motion in image-guided radiotherapy of the bladder and prostate
Tony Redpath, Edinburgh, UK

Optimal treatment margins for complication-free curative radiotherapy based on interfraction tumor displacement and organ deformation
Eirik Malinen, Oslo, Norway

The normal tissue sparing potential of adaptive strategies in radiotherapy of bladder cancer based on fiducials
Pauliina Wright, Aarhus, Denmark

A dose planning study on applicator guided stereotactic IMRT boost in combination with 3D MRI based brachytherapy in locally advanced cervical cancer
Kari Tanderup, Aarhus, Denmark

Saturday June 7, 2008

8:15 am – 9:35 am

Session 7: Clinical studies - thorax

Chairpersons: Marcel van Herk and Morten Hoyer

The role of image guidance in respiratory gated radiotherapy
Stine Korreman, Copenhagen, Denmark

Active breath control and in-vivo portal dosimetry for lung tumors
Angelo Piermattei, Campobasso, Italy

Lung and heart dose volume and function study of image guided respiratory gating radiotherapy for left breast cancer treatment using deformable imaging registration
Sean Zhang, Houston, Texas

Can respiratory coaching for 4D CT emulate free breathing during the treatment course?
Gitte Persson, Copenhagen, Denmark

4DCT image-guidance for SBRT
Martin Fuss, Portland, USA

On-line image guidance for stereotactic radiotherapy of lung malignancies by cone beam CT: Comparison Between Target Localization And Alignment On Bony Anatomy
Laura Masi, Florence, Italy

Inter- and intrafractional movement of the tumour in extracranial stereotactic radiotherapy of NSCLC
Carsten Brink, Odense, Denmark

9:35 am – 10:00 am

Coffee break

10:00 am – 11:10 am

Session 8: Clinical studies - head-and-neck and brain

Chairpersons: Martin Fuss and Cai Grau

PET/CT in head and neck oncology
Eva Brun, Lund, Sweden

Salivary gland volume and dose in IMRT for head and neck cancer assessed using cone-beam CT
Ulrik V. Elstrøm, Aarhus, Denmark

Daily volumetric image-guidance: Does routine usage prompt adaptive re-planning?

James Tanyi, Portland, USA

Setup errors in patients undergoing image guided radiation treatment: Relationship to body mass index and weight loss

Jørgen Johansen, Odense, Denmark

In-vivo portal dosimetry for head-and-neck adaptive IMRT treatment

Savino Cilla, Campobasso, Italy

Clinical results of high-precision cone-beam CT-guided intra cranial stereotactic radiosurgery

Klaus Seiersen, Aarhus, Denmark

11:10 am – 12:00
am

Closing session: The future of IGRT

Chairperson: Jacob Lindegaard

Cost-benefit analysis of IGRT

Michael Baumann, Dresden, Germany

Broadening the Scope of Image-Guided Radiotherapy

C. Clifton Ling, New York, USA

Closing of the Symposium

Cai Grau

Posters - on display throughout the meeting

Evaluation of long-term changes in lung tumors by transit in-vivo dosimetry

Andrea Fidanzio, Roma, Italy

Experience with daily online image guided positioning in radiotherapy

Martin Skovmos Nielsen, Aalborg, Denmark

Multimodality imaging in radiation treatment planning for carcinoma of the nasopharynx: a sub-volume analysis

Allan Fowler, Sydney, Australia

Localization of the prostate in patients with prostate cancer with three different imaging methods

Áshildur Logadóttir, Copenhagen, Denmark

Early clinical experience using implanted fiducial markers and daily online isocenter setup correction in prostate cancer radiotherapy

Ståle Ølberg, Oslo, Norway

Stereotactic body radiotherapy for medically inoperable stage I non-small cell lung cancer: mature outcome and toxicity results

Neil Kopek, Aarhus, Denmark

A video-fluoroscopic analysis of liver respiratory motion using fiducial markers to measure effectiveness and reproducibility of motion reduction by abdominal compression

W. Wunderink, Rotterdam, The Netherlands

Gated radiotherapy of lung cancer: interfractional changes in tumor volume and position during the treatment course

T. Juhler-Nøttrup, Copenhagen, Denmark

Three-dimensional set-up errors assessment in post-operative head and neck radiotherapy using electronic portal imaging device

J.P. Agarwal, Mumbai, India

Transport

Local bus transport to and from Hotel Marselis: use bus number 6.



Invited faculty

M Alber (Tübingen)
M Baumann (Dresden)
K Brock (Toronto)
E Brun (Lund)
C Fiorino (Milano)
J Geleijns (Leiden)
K Haustermans (Leuven)
M Kessler (Ann Arbor)
S Korreman (Copenhagen)
G Li (New York)
C Ling (New York)
TR Mackie (Madison)
C Nutting (London)
DR Olsen (Oslo)
R Pötter (Vienna)
A Skretting (Oslo)
V Valentini (Rome)
M van Herk (Amsterdam)
D Verellen (Brussels)
L Østergaard (Århus)

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