Welcome to the second issue of the Vienna Brachytherapy Group newsletter.

This newsletter contains already more broad contributions from the entire brachytherapy group, again with a strong focus on GYN brachytherapy. For the upcoming issues we will further try to include more topics from our overall brachytherapy group.

ICRU report 88 (Update of ICRU 38): The final draft of the ICRU report prepared by the ICRU report 88 committee (co-chairs R. Pötter, C. Kirisits) is currently still under review by the ICRU main commission. Although positive signals were sent, which should enable final publication after a final limited revision, maybe at the end of 2014.

Most of the current versions are available on the K-drive (contact T. Frank). Currently the focus is on the fine-tuning of the clinical examples presented in the appendices of the report.

Selection of published papers from our group:

Schmid MP, Franckena M (Dr Franckena works at the Department of Radiotherapy of the Erasmus Medical Center in Rotterdam, and was our fellow in 2013) et al. Distant metastasis in patients with cervical cancer after primary radiotherapy with or without chemotherapy and image guided adaptive brachytherapy. Based on the Vienna experience, focussing on the development of distant metastases, basis for stratification into risk groups (MERIT/projected EMBRACE II). Gynecol Oncol. 2014 May;133(2):256-62


EMBRACE:

In June, 2014, there were 1140 patients registered in EMBRACE.

The 5th Embrace Annual Meeting was held in Vienna on 17th-18th January, 2014 and was well attended. A large part of it was dedicated to discussions on the future of EMBRACE and subsequent studies – EMBRACE II and EMBRACE III. In particular, discussions regarding qualification of centres and the protocol for EMBRACE II are well underway. EMBRACE II aims to use the clinical information gathered in EMBRACE to investigate the use of strict dose constraints in conjunction with Image Guided Radiotherapy, including sophisticated brachytherapy and external beam radiotherapy methods.

A short session was held as part of the recent ESTRO 33 meeting in Vienna where representatives from participating EMBRACE centres, and other interested centres, discussed some of the key issues regarding EMBRACE II. The design of EMBRACE will be developed during the next months, also at dedicated core group meetings in August, December and finally at the kick-off meeting in January 2015.

Recent and Upcoming meetings and workshops:

3-D Image-guided Adaptive Brachytherapy for Gynaecology workshop hosted by Gunma University, Japan, 20 Feb 2014 - 21 Feb 2014

ESTRO 33, 04-08 April, 2014, Vienna, Austria.

The Breur ESTRO Lecture 2014 as the highest award of the ESTRO society was given to R. Pöpper. With his lecture “Image Guided Adaptive Radiotherapy – the paradigm of cervix cancer brachytherapy” this was a highlight of the meeting representing the Vienna brachytherapy group.

The Best Abstract Award was given to H. Westerveld from Amsterdam (Radiation Oncologist at the Academic Medical Center Amsterdam, Vienna fellow 2013) for the EMBRACE based research work on multi-centre vaginal dose assessment.

The Vienna Brachytherapy group was represented with presentations on:

- ICRU guidelines for gynaecological brachytherapy: by C. Kirisits, R. Pötter on behalf of the Committee.
- Evidence for tumour dose response in brachytherapy in Gynaecology, by M. Schmid.
• Dose delivery and impact of uncertainties on dose response in the clinical setting. N. Nesvacil


• Impact of inhomogeneity corrected dose calculation on dosimetric quality parameters in gynaecological cases. J. Hofbauer (Austria), N. Nesvacil, A. Sturdza, R. Pötter, C. Kirisits

• Dosimetric considerations to determine the optimal technique for localized prostate cancer. P. Kuess (Austria), D. Georg, J. Hopfgartner, J. Gora, G. Kragl, D. Berger, G. Goldner, P. Georg

• Measurement setup for verifying dose distributions of 106Ru eye plaques with synthetic diamond and diode detectors. G. Heilemann (Austria), N. Nesvacil, M. Blaickner, D. Georg

C. Kirisits formally started his position as Chair-elect of GEC-ESTRO at ESTRO 33.

On April 6, after the ESTRO whole day agenda and in a nice atmosphere of the Kolarik restaurant at Vienna Prater, we welcomed our fellows who have worked with us over the last couple of years and came to Vienna for ESTRO 33.

Clinical Workshop “3D – Image - Guided Adaptive Brachytherapy for Gynaecology using Combined Intracavitary-Interstitial Technique”, with 14 participants from 8 different hospitals (Paris, Kaohsiung, Brest, Bangkok, Gent, Al Ain, Montpellier, Gurgaon) and sponsored by Nucletron, an Elekta company was held on 12-13 May, 2014 at our department.
BrachyNext, 30-31 May 2014, Miami, USA: This was a CME accredited symposium focusing on education and clinical practice. This meeting was an excellent opportunity for discussions between American, Asian and European colleagues. In addition to Breast, GYN and prostate the focus was also on other clinical sites and treatment modalities. The Vienna Brachytherapy Group was represented by R. Pötter (keynote lecture “Shaping the Future of Brachytherapy - Between New Technologies, Diagnostic Tools, and Improved Outcomes” and three presentations) and C. Kirisits (organizing committee and three presentations).

Upcoming meetings and courses:

ASTRO’s 56th Annual meeting, Targeting Cancer: Technology & Biology, has been scheduled for September 14-17, 2014 at Moscone Center, San Francisco (R. Pötter and A. Sturdza presenting)

Image-Guided Radiotherapy and Chemotherapy in Gynaecological Cancer – Focus on Adaptive Brachytherapy course organized by the ESTRO School of Radiotherapy & Oncology, will be held in Florence, Italy, over 28 September-2 October 2014.

The 2nd GEC-ESTRO workshop will be held on the 4th December, 2014 in Brussels. In addition the different GEC-ESTRO workgroups and a workshop on in-vivo dosimetry are organized one day before and after.

The 2nd Elekta Brachytherapy workshop on GYN brachytherapy in India will be held in Kochi in September 2014 with R. Pötter.

NEW RESIDENTS AND FELLOWS:

Susovan Banerjee, MD, Cancer Centre, Kolkata, India (February 2014 till January 2015) is currently working on Volume analysis on cancer cervix patients of Stage IIIB. Besides he has also started working on his other project i.e. "Primary tumour mapping & patterns of regression for various FIGO stages in carcinoma of the uterine cervix undergoing radical radiation therapy including MR image based brachytherapy”.

Katarina Majercakova, MD, Radiation Oncology in the Hospital Santa Creu i Sant Pau in Barcelona, Spain (9.02.2014-14.05.2014) recently left our department. In a 3-months fellowship she was focused on comprehensive experience in brachytherapy, especially image-guided brachytherapy and worked in research project about local control and toxicities depending on prescription dose and tolerance of organs at risk in cervical cancer patients treated by IGBRT.

Noha Jastaniyah, MD, University of Alberta, Edmonton, Canada.(09.2013-31.08.2014) has commenced a research fellowship in Image-Guided Brachytherapy at the University of Vienna. She is currently working with colleagues in our department on a number of projects with regard to response evaluation and toxicity prediction in patients with cervical cancer.

Kenji Yoshida, MD, Kobe University Hospital Japan (1.08.2013 – 31.07.2014) – Beside his engagement in the application and
treatment planning under the IGABT and Ureter dose analysis for cervical cancer treated with IGABT, Kenji works with Noha on Parametrial regression analysis for stage 2 and 3B cervical cancer treated with IGABT; Volume regression analysis for stage 2 and 3B cervical cancer treated with IGABT.

Daniel Simpson, MD, Chief Resident Department of Radiation Medicine, University of California, San Diego, visited our department from 19 May-20 June 2014.

In 2014 our department will host the following colleagues/fellows:

Aneta Dabrowska and Natalia Osada, physicists from Katowice, Poland
Israël Fortin, MD, from Montreal, Canada
Chatrawut Pattaweerakul, MD, Phitsanulok, Thailand
Sayan Paul, MD, and Kanan Jassal, from Gurgaon, India
Namrata Satyapal, MD, from Muscat, Oman

We also expect visits from our close colleagues Dr. Umesh Mahantshetty (Mumbai) and Prof. Ohno (Gunma) in this autumn.

INTERNAL PROJECTS/CO OPERATIONS:

Ultrasound in GYN brachytherapy: A kick off meeting for the next phase of the joint R&D project (Consortium of ACMIT, Medical University of Vienna, Nucletron - co-sponsored via the COMET program of FFG) took a place in Vienna on Friday, 25 April, 2014. The new phase of the project will a focus on an improved clinical prototype for a workflow where the U/S based target volume is registered to CT for definitive planning.

Educational Video - "Combined Interstitial/Intracavitary Brachytherapy for cervical cancer" sponsored by Nucletron, an Elekta company: A video that shows the implantation of a combined interstitial Ring applicator (director Thomas Lehner, internal coordination by A Sturdza and C Kirisits) is these days being produced.

3D treatment planning for uveal melanoma

Initiated in August 2013 a new FWF funded project is looking into treatment planning of uveal melanoma using 106Ru eye applicators. The goal of this project is to develop and establish a software platform on the basis of 3D MR imaging and automated segmentation to improve the dose assessment in the application of ophthalmic plaques. Critical structures (e.g. optical nerves) that could not directly be accounted for in the past will be considered and described in terms of absorbed dose via this software just like it is common practice in other brachytherapy or external beam therapy treatment modalities. Such a software tool is a novelty in uveal melanoma brachytherapy. Gerd Heilemann started his PhD within this project under the supervision of Nicole Nesvacil and Dietmar Georg and in collaboration with Matthias Blaickner from AIT. First steps have been a comprehensive dosimetric characterization of the 106Ru applicators by means of different detector systems, including radiochromic films, polymer gel and diamond detectors.

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