Welcome to the new regular newsletter of the Vienna Brachytherapy Group which will appear quarterly!

The aim of this report is a brief update for staff members, residents, students and fellows as well as the Multidisciplinary Brachytherapy Team, the EMBRACE study office at the Department of Radiation Oncology, Comprehensive Cancer Center, Medical University of Vienna and anybody interested in brachytherapy advancement. It contains information about ongoing internal projects, planned initiatives, and important external developments for brachytherapy. While this issue was mainly designed and written by a small group, future issues should be based on a joint approach of the whole group. Additionally, while this first report focuses on GYN brachytherapy, further issues will be also open for input from all sides of brachytherapy.

ICRU report 88 (Update of ICRU 38): In March 2013 the ICRU report 88 committee (co-chairs R. Pötter, C. Kirisits) provided a final draft to the ICRU main commission. During the last 4 years several versions have been provided by the Committee after very detailed review which was within the Committee, by the ICRU main commission and additionally by 5 international consultants. During the first weeks of January 2014 the final version, including a point-to-point review will be re-submitted to the ICRU main commission. In parallel 8 clinical examples were prepared by experts from Aarhus, Leuven, Madison, Milwaukee, Mumbai, Paris, Vienna.

The internal review and fine-tuning of ICRU report examples is currently being finished with the support of 10 Webex conferences so far. Most of the current versions are available on the K-drive (contact T. Frank), the final documents are available from the co-chairs of ICRU report 88.

Published literature: This journal corner presents interesting journal articles published recently in the peer reviewed literature. In this first issue only some papers e-published in the second half of 2013 authored by members of our group are included. Please contact us, if you wish your publication appears here.

Kirisits C et al. Review of clinical brachytherapy uncertainties: Analysis guidelines of GEC-ESTRO and the AAPM: This paper finishes a GEC ESTRO Braphyqs project of several years and is summarizing the different types of uncertainties in brachytherapy, values for a few examples, and guidelines for reporting uncertainties (green journal).

Schmid M et al. Magnetic resonance imaging for assessment of parametrial tumour spread and regression patterns in adaptive cervix cancer radiotherapy: Started already several years ago by J Dimopoulos with MD students, this paper reports the impact of parametrial tumour spread on tumour response during external beam and chemotherapy (Strahlentherapie und Onkologie).
P. Georg, A. Boni-Mikats, A. Ghahrous et al. Time course of late rectal and urinary bladder side effects after MRI-guided adaptive brachytherapy of cervix cancer. Written on the basis of two medical MA Theses under supervision of P. Georg (Strahlentherapie und Onkologie).

Hegazy N et al. High-risk clinical target volume delineation in CT-guided cervical cancer brachytherapy: Impact of information from FIGO stage with or without systematic inclusion of 3D documentation of clinical gynecological examination: Our fellow colleague Neamat Hegazy together with Nicole Nesvacil and co-authors summarizes findings when comparing CTV delineations on CT with and without inclusion of clinical drawings (Acta Oncologica)

Please keep in mind: the April issue of the Green Journal (2013:107, page 1-122), focussing mainly on uncertainties in Gynaecologic Adaptive Brachytherapy with several contributions also from the Vienna Group.

Do not miss the editorial (Tanderup, Nesvacil, Pötter, Kirisits) which provides a frame for understanding the issue “uncertainties” also in the clinical setting and for shaping future research.

EMBRACE: The 1000th patient was registered on 6th November, 2013. The next Embrace Annual Meeting will take place from 9:00 am on Friday 17th to 3.30 pm on Saturday 18th January, 2014 in Vienna. Key issue is the discussion and the decision on our projected future cooperative interventional trials EMBRACE II and III, which are projected to start in late 2014.

Recent and Upcoming meetings:

GEC ESTRO Workshop in Brussels (11/2013), for a detailed overview on the contents of the Friday meeting covering the whole brachytherapy field, visit the ESTRO website! If there is interest all the presentations can also be stored on our K-drive.

3-D Image-guided Adaptive Brachytherapy for Gynecology workshop hosted by Gunma University, February 20-21, 2014: After international workshops in Mumbai and Bangkok this is the third international branch of our successful Vienna workshop experience in order to extend educational activities outside Europe (sponsored by Nucletron, an Elekta company).

Guest professorship by Kari Tanderup on 14th - 16th January 2014 at the Department of Radiotherapy in Vienna

ESTRO 33, 04-08 April, 2014, Vienna, Austria. Best Abstract Award was given to H. Westerveld from Amsterdam (Vienna fellow 2013) on joint EMBRACE based research work together with our group on multicentre vaginal dose assessment. The Breur ESTRO Lecture 2014 (Gold Medal) (R. Pötter): “Image Guided Adaptive Radiotherapy – the paradigm of cervix cancer brachytherapy”.

“3-D Image-guided Adaptive Brachytherapy for Gynecology using the combined intracavitary – interstitial technique” workshop at the Department of Radiotherapy, Medical University of Vienna/AKH, May, 12-13, 2014: an international workshop sponsored by Nucletron, an Elekta company, that is being organized at our department over the last six years. From 2013 the workshop takes a place twice a year.
BrachyNext, 30-31 May 2014, Miami, USA: This is a CME accredited symposium focusing on education and clinical practice. A new edition of the International Nucletron Conferences (last was in Rome 2007).

“3-D Image-guided Adaptive Brachytherapy for Gynecology using the combined intracavitary – interstitial technique” workshop at the Department of Radiotherapy, Medical University of Vienna/AKH, November, 24-25, 2014: the second workshop in 2014 sponsored by Nucletron, an Elekta company.

Third ESTRO Forum in Barcelona 2015: Currently topics are collected - please give your input to C Kirisits, member of the scientific committee.

Papers in progress or submitted:

Nkwiane K et al. Impact of the in utero-vaginal applicator position on spatial dose distribution in the posterior bladder wall in cervix cancer brachytherapy assessed by variation of the ICRU bladder point dose/GEC ESTRO D2cm3 ratio. This paper presents how the spatial dose distribution within the posterior bladder wall can be characterized by a ratio of ICRU point and DVH value. Further it investigates the use of additional points cranial of the original ICRU bladder point. This paper is part of Karen Nkwiane’s PhD. Currently it is finalized after review from the co-authors, which are one author from each of the top 5 contributing centers to the data used in this study (Aarhus, Ljubljana, Mount Vernon, Mumbai, Edmonton).

Kirchheiner K et al. Paper on vaginal morbidity from EMBRACE data. Submitted to IJROBP, minor revision.

Kirchheiner K et al. Posttraumatic Stress Disorder (PTSD) in cervix cancer patients undergoing radio-chemotherapy and image guided adaptive brachytherapy (PTSD): Submitted to IJROBP, major revision.

Dummy run paper EMBRACE. Currently C Kirisits tries to reconstruct the underlying data, which was lost after Mario Federico left our department and is not reachable anymore. This is similar, but even more difficult for the paper on MR pre-treatment images used for contouring on CT.

Schmid MP and Franckena M (fellow 2012) 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, focusing on the development of distant metastases, basis for stratification into risk groups (MERIT). (Gyn Oncology, minor revision).

Next issues will include further papers on retroEMBRACE (A. Sturdza), EMBRACE (ICRU recto-vaginal point, K. Kirchheiner), sigmoid variations and bowel dose (A. Sturdza), Applicators (D. Berger), Vaginal dose (P. Trnkova) etc etc.

New residents and fellows:

A. Boni-Mikats, medical diploma student (supervision P. Georg), topic: GI morbidity and DVH and time course in 225 patients from the Vienna IGABT experience, received a full resident position started in 10/2013.

A. Ghabuous, medical diploma student (supervision P. Georg), topic: Bladder morbidity and DVH and time course in 225 patients from the Vienna IGABT experience, receives a full resident position starting in 01/2014. This diploma work was published by P.Georg, A. Boni-Mikats, A. Ghabuous et al. Time course of late rectal- and urinary bladder side effects after MRI-guided adaptive brachytherapy for cervical...
cancer in Strahlentherapie and Onkologie 2013, see above.

Mark Chan, physicist from Department of Clinical Oncology, Tuen Mun Hospital, Hong Kong (27.01.2014-7.02.2014), colleague of Joyce Wong MD (fellow in 2013).

Susovan Banerjee, MD, Cancer Centre, Kolkata, India (February 2014 till January 2015).

Katarina Majercakova, MD, Radiation Oncology in the Hospital Santa Creu i Sant Pau in Barcelona, Spain (initially Med. Univ. in Olomouc) (9.02.2014-14.05.2014).

Internal projects/Co-operations:

Ultrasound in GYN brachytherapy: On 17th December an important meeting took place with Nucletron representatives to discuss the status and future of the joint R&D project (Consortium of ACMIT, Medical University of Vienna, Nucletron - co-sponsored via the COMET program of FFG). This research project develops solutions for US based application, planning and verification. First findings will soon be disclosed to the public.

Educational Video - GYN Brachytherapy Implantation. Sponsored by Nucletron: A video will be produced showing the implantation of a combined interstitial Ring applicator (director Thomas Lehner, internal coordination by A Sturdza and C Kirisits).

Cooperation with UC San Diego: UC San Diego developed a tandem with three shielded channels inside one tandem to produce asymmetric dose distributions for cervix cancer. They want to compare these dose distributions with our cases treated by the Vienna I and Vienna II approach.

Cooperation with Varian, Accuros: Julia Hofbauer from KH Hietzing, co-worker in our project with Varian submitted an abstract about the impact of the non-water equivalence of tissues and applicators in brachytherapy. While the impact is small in general there are systematic effects of up to 2% when using titanium tandem/ring applicators.

Gynaecologic Cancer Unit (GCU) of the Comprehensive Cancer Center Vienna (CCC); Autumn meeting successful, several projects ongoing, such as homepage, databank etc. Please see current minutes (P. Georg, A. Sturdza), next meeting projected for March 2014.

Impressum: Vienna Brachytherapy News
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