Report on the First World Congress of Brachytherapy, Boston 2008

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The First World Congress of Brachytherapy was held in Boston between the 4th and 6th May 2008, with the main theme, brachytherapy 3-D with dosimetry on MRI images. With much enthusiasm and a desire to succeed, ABS (American Brachytherapy Society), GEC-ESTRO (Groupe European de Curietherapie – European Society for Therapeutic Radiotherapy and Oncology) and ALATRO (Asociacion Latino Americana de Terapia Radiante Oncologica) combined efforts in order to achieve a common reunion, together with other brachytherapy international societies CBG-CARO, JASTRO, ABG and AROI-IBS.

Under the leadership of Beth A. Erickson of the Medical College of Wisconsin, Milwaukee, the role of 3-D imaging in brachytherapy of cervical cancer was presented. This theme was presented by Johannes Dismopoulos from Vienna University, Christine Haie-Meder from the Gustave Roussy Institute Villejuif France and Erik Van Limbergen from the Gasthuisberg University Hospital, Leuven in Belgium. They made a clear and valuable presentation of the advantages of dosimetry based on the images obtained from magnetic resonance: the possibility of escalating the dose, an improvement of the local control with 20% and implicitly a reduction of the toxicities of 3rd and 4th degree from 13% to 6%.

As always bringing exciting studies and interesting results regarding tumor metabolism, Perry W. Grigsby from Washington University Medical Center of St. Louis presented the use of 19FDG-PET-CT in targets at a biological level; more precisely, metabolic response to brachytherapy, absorption and metabolism of glucose at cell level and their impact on survival. Moreover, he demonstrated that PET-CT with 90 CuATSM (Cu-61-diacetyl-bis N4-methylthiosemicarbazone) can be used as a map for heterogeneity and hypoxia.

Professor Potter from Vienna University moderated the presentations related to the integration of brachytherapy in the multidisciplinary treatment of cervical cancer focusing on the doses absorbed at the level of CTV and critical organs through RTE and BT and the relationship between the DVH constraints and clinical parameters. He underlined the tight relationship between D90 HR CTV and local control, as well as between the 2 cc and rectal toxicity; the connection is weaker between the 2 cc and bladder toxicity and sigmoid, without being able to establish a relation between these parameters and vaginal toxicity.

The limitation of the paper was the reduced number of cases -141- and the lack of a prospective study.

Csaba Polgar from the National Institute of Oncology of Budapest presented the Hungarian experience of a randomized trial with 12 year follow-up; partial irradiation of the breast by HDR-BT vs. whole breast irradiation (WBI). Partial irradiation of the breast in the case of a carefully selected group of patients in incipient stages provides similar results to WBI (CSS and DFS was 98 % vs. 96%, respectively 88% vs. 90%), but the cosmetic results were significantly better in the case of the patients irradiated only through brachytherapy (78% vs. 63%, with p < 0.01).

Introduced later, but with an enthusiasm and spectacular results, brachytherapy for prostate cancer was another subject of great interest. Alvaro Martinez and Michel Ghilezan from William Beaumont Hospital presented extremely encouraging results; 5 years of brachytherapy used as a unique treatment and the reduction of toxicity as a consequence of using the 3-D transrectal ultrasound vs. 2-D dosimetry in incipient stages of prostate cancer. Accelerated hypofractionated HDR brachytherapy as monotherapy for favorable risk prostate cancer yielded excellent 5-year clinical and biochemical disease control rates. In favorable-risk prostate cancer patients treated with HDR-BT alone, real-time transrectal ultrasound 3D treatment planning has a significant impact on decreasing the acute urinary retention rate necessitating a Foley catheter as well as the rates of chronic GU (frequency/urgency, retention and hematuria) and GI (rectal pain/tenesmus) toxicity.

The controversies related to the necessity of radiobiological knowledge in modern brachytherapy were moderated by Gillian Duchese from the Peter MacCallum Cancer Center, Melbourne, Australia. Soren Bentzen pointed out the fact that the linear quadratic model has a limited use in clinical practice, being an orientative model, applicable to a restricted dose of 2-4 Gy/ fraction. With a large number of participants - over 800- and proving a great success with regard to the theme as well as the papers presented, the World Congress of Brachytherapy is sure to remain a highly sought after event, awaited with eagerness by all interested parties.

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