Low-kilovoltage single dose intraoperative radiation therapy for breast cancer

C. Flores-Balcazar[1], G. Santiago-Concha[1], R. Sánchez-Castro[1], S. Rosales-Pérez[1], E. Bargalló-Rocha[2], J. Rivera-Corona[2]
[1]Instituto Nacional de Cancerología, Radiation Oncology, Mexico City, Mexico
[2]Instituto Nacional de Cancerología, Surgery, Mexico City, Mexico

Purpose/Objectivel: Targeted intraoperative radiation therapy (IORT) as an alternative to whole breast irradiation has been described for patients with early-stage breast cancer. The randomized phase III TARGiT trial demonstrated similar recurrence rates to WBI and a lower overall toxicity profile on short-term follow-up. We report on our early Latin American surgical experience using the Intrabeam radiotherapy delivery system.
Materials and Methods: Prospectively gathered estrogen receptor-positive, clinically node-negative patients with invasive breast cancer < 2.5 cm receiving using the Intrabeam system were reviewed. IORT-related effects and early postoperative outcome were assessed.
Results: Seventy eight patients (median age 67 years) underwent lumpectomy, sentinel lymph node biopsy, and concurrent IORT from march 2013 to march 2014. Ninety-five percent of patients had invasive ductal histology with a median tumor size of 1.5 cm.
Conclusions: While a variety of APBI techniques are currently available for clinical use, our early Latin American operative experience with IORT shows it is well tolerated with low morbidity. The addition of WBI may be necessary in situations for positive residual margins or microscopic nodal disease in patients who do not undergo additional surgery. Implementation of IB impacts treatment planning and operating room use in a multidisciplinary breast cancer program. The safety profile, ease of administration, and reduced costs of IB favor its more widespread use in selected patients with early-stage breast cancer.

Early toxicity outcomes: A single 15Gy fraction HDR brachytherapy as pre-treatment EBRT boost in prostate cancer.

R. Chicas Sett[1], A. Soler[1], J. Fernandez[2], J. Burgos[1], O. Pons[1], S. Roldan[1], F. Celada[1], J. Gimeno[1], A. Tormo[1], J. Perez-Calatayud[1]
[1]*Hospital Universitario y Politecnico La Fe, Radiation Oncology, Valencia, Spain*
[2]*Complejo Hospitalario Universitario, Radiation Oncology, Albacete, Spain*

Purpose/Objective: To assess the toxicity of combined therapy between external beam radiation therapy (EBRT) plus high dose rate brachytherapy (HDRB) as a boost in patients with intermediate or high risk prostate cancer.
Materials and Methods: From 2010 to August 2014, a total of 221 patients diagnosed as intermediate or high-risk prostate cancer were treated with EBRT plus HDRB. Median age was 72 years (range 52-85). Most patients (68%) were classified as high-risk (stage T2c-T3b or PSA >20ng/dl or GS>7), and 70 patients (32%) were considered intermediate risk. The stage of tumor was determined in every case by magnetic resonance imaging (MRI). Every patient received first HDRB as boost and 4 gold fiducials were implanted. Finally, all patients received EBRT by intensity modulated radiotherapy technique with imaging guided by CBCT. The patients received HDRB as a single 15 Gy implant, followed by EBRT to 46 Gy in 23 fractions. Thirty seven percent of the high-risk patients presented seminal vesicles invasion receiving a single 9.5 Gy implant, followed by ERBT to 60 Gy in 30 fractions. A total of 117 patients (52%) received a dose of 46 Gy to the true pelvis. In all brachytherapy plans, the constraints indicated in the GEC/ESTRO recommendations have been respected (Rectum D2cc £75Gy EQD2; Urethra D10£ 120Gy EQD2). Most patients (120; 54%) were prescribed complete androgen deprivation therapy (ADT), 66 (29%) received incomplete ADT and 28 (13%) did not receive ADT. GI and GU toxicity was evaluated utilizing the RTOG criteria. Median follow-up was 26 months.
Results: No treatment failure has been observed to the last follow-up. The incidences of any acute ≥ Grade 2 GI or GU toxicities were 0% and 9% respectively. Dysuria and urgency was prevalent symptoms in acute GU toxicity. Late genitourinary toxicity included 2 patients (0.9%) with urine obstruction requiring intermittent/permanent catheter. One case of grade 2 gastrointestinal late toxicity presented actinic rectitis event.
Conclusions: The use of a single 15Gy fraction HDRB as pre-treatment EBRT boost provides early-term and good outcomes in treatment-related toxicity. These data can help physicians to assess this scheme of radiotherapy as an acceptable option in the prostate carcinoma treatment.

APBI single-centre experience over a decade – risk estimates and indication variations within current guidelines

A. Aguiar[1], L. Trigo[2], N. Stas[2]
[1]*Instituto Português de Oncologia do Porto Francico Gentil, Radiotherapy, Porto, Portugal*
[2]*Instituto Português de Oncologia do Porto Francico Gentil, Brachytherapy, Porto, Portugal*

Purpose/Objective: APBI is currently considered a viable treatment option in early-stage breast cancer patients. Mostly due to the rising need to treat patients outside clinical trials, in 2009 two consensus statements (CS) were created by ASTRO (American Society for Radiation Oncology) and GEC-ESTRO (Groupe Européen de Curiethérapie-European Society for Radiotherapy and Oncology). More recently, guidelines from ABS (American Brachytherapy Society) were also published. This helps the train of thought Radiation Oncologists have to undergo concerning the decision for the most appropriate adjuvant radiation treatment modality in early-stage breast cancer patients. Nevertheless, during that process, doubts may emerge due to the lack of parallelism among the three guidelines that can lead to different risk group stratification/treatment indications for the same patient. Our study aimed at comparing the rate of suitable and unsuitable patients for APBI according to the three guidelines. As a secondary objective survival and relapse rates were also addressed.
Materials and Methods: 81 patients submitted to APBI, in a single-institution, were retrospectively analyzed (treated from 2003 to 2013) and then categorized according to indication for treatment as 'suitable', 'cautionary' and 'unsuitable' (ASTRO), as 'low risk', 'intermediate risk' and 'high risk' (GEC-ESTRO), and as 'acceptable' and 'not acceptable' (ABS). Data regarding tumour, treatment technique and patient-related features was collected, as well as recurrence and survival rates.
Results: Median follow-up time was 35,1 months, 46 patients underwent HDR and 35 a PDR technique either with metal needles or flexible plastic catheters using a template-based system. 75 were suitable for guideline stratification (2 patients lost to follow-up and 6 without complete information about risk factors). According to the ASTRO CS,