

economical benefit compared to conventional standard EBRT, with a saving of 98252.70€ in 75 treated patients. It also associates a time profit that may improve QoL.

#### PD-0480

**Single dose IORT for early-stage breast cancer in elderly women: tolerance and results**

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**Purpose/Objective:** Rationale of accelerated partial breast irradiation (APBI) is the prevention of local relapse in breast area with the highest probability of recurrences in strictly selected patients. Intraoperative Radiotherapy (IORT) is one of the most promising techniques of APBI. The aim of this study is the preliminary evaluation of toxicity, cosmetic effect and 5-years rate of ipsilateral breast recurrences in patients treated with exclusive single dose IORT with electrons after quadrantectomy (QUAD) for early stage-breast cancer.

**Materials and Methods:** Between January 2008 and June 2014 thirty-one women were treated with single dose IORT in our Institution. Thirteen were enrolled into a multi-centric randomized trial (coordinated by Regina Elena Institute of Rome) and eighteen were treated with single dose for age and co-morbidities, that contraindicate external beam radiotherapy (EBRT). Patients underwent QUAD with sentinel lymph node biopsy. All of them were older than 60 years or in post-menopausal status, with a single tumour sized 2 cm or less, histological proven invasive ductal or lobular carcinoma and clinically N0. IORT was delivered with a mobile Linear Accelerator (NOVAC7 by SIT) with a total dose of 21 Gy. An electron energy 7 to 9 MeV was used. A perspex shield was placed under the mammary gland, to reduce dose to the chest wall, heart and ipsilateral lung. Acute and late toxicities were evaluated one month after the treatment, then every three months for two years and every six months up to 5 years, according to RTOG scale while cosmetic outcomes was assessed by Harvard criteria.

**Results:** The median follow-up was 54,6 months (range 5 to 78). Mean age of the patients was 72,5 years (range: 62-80). Pathologic findings identified twenty-six patients as infiltrating ductal carcinoma and 5 as infiltrating lobular carcinoma. Patients presented N0 or N1mic status, except for two cases with N1a, and negative surgical margins. Average diameter of applicators was 60 mm (range 40-80). Treatment was successfully completed in all patients with an average lengthening of the operative time of about 20 minutes. At the long follow-up only one woman presented local relapse after 55 months from IORT; she underwent re-excision followed by EBRT. Acute toxicity was G0 in 19 patients, G1 in 8 cases and G2 in 4 patients. No G3/G4 toxicities occurred. As early side effects 6 patients experienced seromas and one patient complained wound healing difficulties. G1/G2 late toxicity occurred in 6 patients. No lung or heart toxicities were observed. Cosmetic valuation was excellent/good in 25 patients; 6 cases were scored as fair/poor.

**Conclusions:** IORT with a single dose in early breast cancer is feasible and well tolerated technique. In our experience it resulted in a significant shortening of radiotherapy time and

gain in quality of life in elderly patients. In eligible cases (according to age and clinical staging) it seems a valid treatment option for adjuvant radiotherapy.

#### PD-0481

**Local control and cosmetic outcome on 100 early breast cancer treated with exclusive IORT**

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**Purpose/Objective:** To evaluate local control and cosmetic outcome of intra-operative radiation therapy (IORT) as an exclusive treatment of early stage breast cancer in patients with criteria as GEC-ESTRO (good candidates).

**Materials and Methods:** From October 2008 to December 2013, 100 patients underwent wide breast cancer excision or quadrantectomy followed by IORT on tumor bed with accelerated electrons (Novac 7 NRT) at the dose of 21Gy. Patients were aging at least 50 years with unicentric, unifocal, pT1-2

**Results:** The average age was 63.89 (range 50-89) with an average follow up of 33 months (range 6-65). The pathologic stage of the lesions resulted pT1 in 82 cases (82%), in particular: 5 cases pT1a (6,1% on 82 cases), 38 pT1b (46,3%) and 39 pT1c (47,6%); 11 cases (11%) was pT2 with a diameter of 2,5 cm.

The Grading was G1 in 21 cases (21%), G2 in 59 cases (59%) and G3 in 13 cases (13%). The toxicity, evaluated according to the EORTC-RTOG criteria, was G0 (37%) in 37 cases, G1 (48%) in 48 cases, G2 in 6 case (6%); only 2 was G3 (2%). We observed 9 case of lymphocele (9%); there were no infections of the surgical wound nor any mastitis, neither in the treated quadrant nor in the other ones.

We observed a light fibrosis in 14 cases (14%), moderate in 9 (9%) and liponecrosis in 10 cases (10%). As regards local control, there was 2 (2%) local relapse and 1 second tumor. The global survival was 100%.

Cosmetic outcome, evaluated in four levels (Danoff and co.), was excellent in 17 cases (17%), good in 63 (63%), sufficient in 11 cases (11%), never insufficient.

**Conclusions:** The IORT in early breast cancer, at the doses used in this study on patients according to GEC-ESTRO criteria, provided itself as a secure technique, repeatable, with good local control and cosmetic outcome.

#### PD-0482

**Early breast cancer treated with an electronic IORT system: report of the first patients treated in Portugal**

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**Purpose/Objective:** To describe the initial experience of the first institution in Portugal in treating early breast cancer with intraoperative radiotherapy (IORT) with an electronic brachytherapy system.

**Materials and Methods:** We retrospectively analyzed the data of 30 women who underwent intraoperative irradiation during breast conserving surgery between April 2012 and November 2014. Treatment was performed in a single