

acid based cream in the prevention of radiation induced skin toxicity (RIST).

**Material and Methods:** Patients undergoing breast irradiation after conservative surgery for breast cancer were considered for the study. The patients were randomly assigned to use T-lysal (repalysal, a thymine-lysine-hyaluronic acid based cream) vs. patients using a moisturizing cream. The patients were stratified for age, breast size, and phototype. Radiation therapy was delivered with 3D conformal radiation therapy, with 20 fraction of 2.25 Gy (concomitant boost dose 2.5 Gy) on the residual breast for a total dose of 45 Gy in 4 weeks (50 Gy boost dose to the tumoral bed). The appearance of any grade of skin toxicity was the endpoint of our study. RIST was assessed weekly from the beginning of treatment and graded according to the RTOG acute skin toxicity scale.

**Results:** Fifty two consecutive patients undergoing radiation therapy after breast conserving surgery for breast cancer were randomized to have the skin treated with 2 daily application of Repalysal or a simple moisturizing cream. Median age of the patients was 54. At the end of treatment (4 weeks) 15/26 patients in the Repalysal group vs. 26/26 patients in the control group had any grade of skin toxicity ( $p=0.0001$ ). Moreover, among patients that developed skin toxicity, 3/15 vs. 18/26 developed G2 toxicity in Repalysal and control group, respectively (0.0036).

**Conclusion:** Repalysal ameliorates the acute skin toxicity profile of patients undergoing radiation therapy after conservative surgery for breast cancer.

#### EP-1188

The protective role of lipofilling in women subjected to radiotherapy.

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**Purpose or Objective:** Many authors suggest, when the patients is suitable, the complete reconstruction of the breast which has undergone radiation by autologous tissue, discouraging prosthetic placing because of the high level of post-radiotherapeutic complications observed. The aim of this study is the assessment of radiation-induced outcomes in women with breast cancer who have been subjected to radiotherapy after reconstruction.

**Material and Methods:** Between January 2011 and March 2013 we chose 17 patients, median age of 45 years; 15 of these had undergone a radical mastectomy and 2 a quadrantectomy. During the mastectomy 7 patients were given an immediate prosthesis, 9 underwent reconstruction by lipofilling by way of classical breast expander and following prosthesis, 1 quadrantectomy and breast remodelling by lipofilling. All the patients received adjuvant chemotherapy and/or hormone therapy, conformational radiotherapy on the thoracic wall or residue breast (total dose of 50 Gy) and local prophylactic therapy so as to minimize the radiation-induced adverse effects. All patients have gone through a clinical-instrumental follow-up over a median time of 12 months and an assessment of cutaneous toxicity according to the SOMA-LENT scale.

**Results:** It was observed in 2 of the cases capsular contracture of the prosthesis of high grade which needed further replacing and appearance of cutaneous ulcers (grade 2) in 1 patient; in the remaining cases of prosthetic reconstruction erythema and edema were found (grade 2). A tolerable erythema was observed in the patients with expander and simultaneous lipofilling without late fibrosis. No complications were found in the patients with rimodelling by lipofilling post quadrantectomy, with conservation of the shape and symmetry of the breast.

**Conclusion:** The grafting of the autologous fat, high in stamina cells, represents an alternative technique in breast reconstruction with complete functional recovery of the tissue, so improving the surrounding tissue and therefore the capacity to heal in the irradiated tissues. The use of lipofilling is becoming an ever increasing importance as a coadjuvant in the breast reconstruction and avoids radiotherapy-induced complications. This gives notable psychophysical benefits and improves the quality of life in the patients.

#### EP-1189

Hypofractionated RT with or without boost in breast cancer: an institutional analysis of toxicity

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**Purpose or Objective:** Whole breast irradiation (WBI) is the gold standard after breast conserving surgery (BCS), followed by an additional boost when negative prognostic factors are present. WBI can be administered with hypofractionated schedules, on the basis of the relatively low  $\alpha/\beta$  ratio for breast cancer (BC). The aim of our study was to investigate the effects of an additional hypofractionated boost (HB) in terms of acute and short-term late skin and subcutaneous tissue toxicity.

**Material and Methods:** Between March 2014 and April 2015 156 women, median age 62 years (range 34-88) with early BC (pT1-pT2, N0-N1) underwent hypofractionated RT (single dose of 2.65 Gy to 42.4 Gy in 16 fractions over 3 weeks)  $\pm$  HB (single dose 2.65 Gy to 10.6 Gy in 4 fractions). The study enrolled 71 patients (pts) without HB (45.5%) and 85 with HB (54.5%). The additional HB was delivered if risk factors such as young age, positive nodes, negative hormonal receptors, high Ki67 or HER2/neu overexpression were present. According to the risk of relapse chemotherapy (CT) and/or Hormonal Therapy (HT) and/or Trastuzumab were administered. For the analysis of the acute and late toxicity CTCAE 4.03 scale was used. Pts had physical examination at 5th, 10th, 16th and 20th day of RT and then 1 and 6 months after the end of treatment. Statistical analysis was carried out by the Chi-square test and the Mann-Whitney's U-test was used to compare continuous variables.

**Results:** HB group characteristics were: younger age (median 56 vs 67), longer time gap between surgery and RT (median time 20 weeks vs 16), more advance stage (43.6 % stage II vs 14.1%), CT (37 pts vs 2), HT (71 pts vs 48). Hypofractionated RT was well tolerated with or without HB and no G3 overall toxicity was documented. HB did not contribute to major skin toxicity; at the end of the treatment only 14 cases had G2 dermatitis vs 5 which did not receive HB ( $p = 0.073$ ). One month after RT HB and CT significantly impacted upon edema occurrence: 15.5% HB group vs 1.5% no HB ( $p = 0.008$ ) and 18.4 % CT group vs 6.2% no CT ( $p = 0.016$ ). Furthermore, CT emerged as a risk factor for hyperpigmentation 6 months after RT: 37.0% vs 10.4% ( $p = 0.003$ ). Attached Table summarizes the toxicity time-related events.

## TOXICITY EVENTS

	WITHOUT BOOST (71 pts)					WITH BOOST (85 pts)						
	5 days	10 days	16 days	1 month	6 months	5 days	10 days	16 days	20 days	1 month	6 months	
<b>G1</b>												
Dry Skin	0	0	0	3	0	0	1	0	1	2	1	
Hyperpigmentation	0	0	1	39	8	0	3	5	5	47	12	
Induration/fibrosis	0	0	1	3	6	0	0	0	0	3	14	
Pruritus/itching	0	0	3	2	0	1	2	3	3	2	0	
Desquamation	0	1	6	5	0	0	0	3	10	4	0	
Rash: dermatitis	6	21	42	13	0	8	30	49	51	11	3	
Teleangiectasia	0	0	0	0	0	0	0	0	0	0	0	
Skin ulceration	0	0	0	0	0	0	0	0	1	0	0	
Burn	0	0	0	0	0	0	0	0	0	0	0	
Edema	3	1	3	1	6	11	15	12	12	13	8	
<b>G2</b>												
Dry Skin	0	0	0	0	0	0	0	0	0	0	0	
Hyperpigmentation	0	0	0	1	0	0	0	0	1	2	0	
Induration/fibrosis	0	0	0	0	0	0	0	0	0	0	0	
Pruritus/itching	0	0	0	0	0	0	0	0	0	0	0	
Desquamation	0	0	0	0	0	0	0	0	1	0	0	
Rash: dermatitis	0	1	5	0	0	0	0	5	14	0	0	
Teleangiectasia	0	0	0	0	0	0	0	0	0	0	0	
Skin ulceration	0	0	0	0	0	0	0	0	0	0	0	
Burn	0	0	0	0	0	0	0	0	0	0	0	
Edema	0	0	0	0	2	0	0	0	0	1	0	

**Conclusion:** Administration of an additional HB is feasible, safe and well tolerated in terms of acute and short-term late skin and subcutaneous toxicity even though it seems to have a role in the edema occurrence. Although G2 dermatitis occurred in 16.47% of pts receiving HB vs 7.04% not receiving it, the difference was not significant, probably due to few observed events. Long term follow up data and a larger sample size are needed to confirm these data, assess late toxicity and clinical outcomes.

### EP-1190

**Boost volume assessment in breast cancer: preop tumor volume vs clips used in oncoplastic surgery**

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**Purpose or Objective:** The aim of this study was to compare the volumes obtained with surgical clips during breast conserving surgery of breast cancer patients with volume determined using FDG positive tumor volumes outlined in pre-operative PET-CT imaging and find out the deviations that arise.

**Material and Methods:** For initial diagnostic PET-CT requested by the surgeon, the patients were positioned on the breast board with the arm on the ipsilateral side up. Those without metastatic tumors and applicable for breast conserving surgery went under operation in compliance with oncoplastic surgery principles. 4 clips were placed at the tumor lodge. For 15 of the patients, before continuing with further therapy, the tumor volume outlined with the surgical clips and that contoured using the area with FDG affinity viewed on the PET-CT were determined. Results were statistically analyzed with SPSS software.

**Results:** This study determined that methods used in oncoplastic surgery (such as flap shifting) resulted in displacements of the tumors from their original locations. For statistics we apply paired t test to the results that we have from these different techniques and found the values respectively for x,y,z as 0.929, 0.119, 0.991. Even the p value that we found is higher than 0.05 and not seems to be significant when we evaluate the center of mass deviation that we measure with these two techniques makes us to have an impact in overall results.

**Conclusion:** Determination of boost volume using pre-op tumor volume is not trustable in cases where tumor volume is not marked using clips during oncoplastic surgery of breast cancer and may result in geographical misses.

### EP-1191

**Pattern of metastasis in different molecular sub-types of locally advanced carcinoma breast**

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**Purpose or Objective:** To investigate the association between the molecular sub-types and the pattern of distant metastasis in carcinoma breast.

**Material and Methods:** 400 patients of locally advanced breast carcinoma, without any distant metastasis, both clinically or by imaging were studied retrospectively. (Jan 2010- Dec 2011) The ER/ PR and HER-2neu status of the patients was noted and the patients were classified into luminal A/B, Triple negative, Her2/neu enriched and Luminal/Her.

All patients had received the treatment for carcinoma breast as per the standard protocols i.e. Curative treatment with surgery, Chemotherapy, and radiotherapy followed by hormonal therapy as per the indications.

All the patients were followed up for local as well as distant failure and pattern of failure was co-related with the molecular subtypes.

The major sites of distant metastasis were lungs, liver, bones and brain.

molecular subtypes bone Liver Lungs brain local recurrence

Luminal A/B 16/30 10/30 2/30 6/30 4/30

Her 2 Neu enriched 28/66 30/66 20/66 20/56 18/56

Luminal Her 16/28 11/28 2/28 8/28 6/28

Triple Negative 7/19 6/19 7/19 4/19 0/19

**Results:** Brain was the most common site of metastasis in Her 2 /neu enriched subtype.

Bone is the most common site of metastasis in all subtypes

**Conclusion:** A strong association of different metastatic sites with the molecular status suggests vigilance about the symptoms (metastatic) beforehand. Organ specific metastasis may depend on the molecular subtype of the cancer. High rate of bone metastasis might be due to the role of bone marrow as a homing organ for the cancer cells. Early treatment of Her-2/ neu patients with Trastuzumab might reduce the rate of metastasis. Tailored strategies against distant metastasis concerning the molecular subtypes in breast cancer may be considered.

### EP-1192

**Management of the axilla after neoadjuvant systemic therapy in breast cancer: A systematic revision**

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**Purpose or Objective:** Worldwide, breast cancer is the most common invasive cancer in women. The management of breast cancer depends on multiple factors. The purpose of this work is review the currently management of the axilla after neoadjuvant systemic therapy in breast cancer especially from the point of view of an oncology radiotherapist

**Material and Methods:** In May 2015, we searched clinical trial registers, the Cochrane Central Register of Controlled Trials, Web of Science, EMBASE and MEDLINE and reviewed reference lists. Further hand searches were conducted of relevant journal proceedings. At the end, we principally reviewed both meta-analyses regarding the results of the SNB following NAC in patients with a diagnosis of clinically negative axillae, the results of NSABPB-18 and NSABP B-27