correlation between the different variables and cardiac damage is ongoing.

**Poster: Clinical track: Breast**

**PO-0672**

*Ten years experience of breast reconstruction after mastectomy in previously irradiated patients*

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**Purpose or Objective:** To evaluate the rate of complications and the aesthetic outcome in previously irradiated patients who underwent mastectomy and subsequent prosthetic reconstruction in 2 times.

**Material and Methods:** Eighty-three patients who underwent immediate postmastectomy reconstruction with tissue expander between January of 2003 and June of 2012 at the Campus Bio-Medico University Hospital in Rome were retrospectively divided into two groups: Group A (study group) included 30 patients with previous quadrantectomy and radiotherapy who underwent salvage mastectomy after local recurrence and Group B (control group) included 53 patients submitted to primary radical mastectomy. Patients and disease characteristics were analysed and complications were correlated to treatment group.

**Results:** The median follow-up time for the whole group was 36 months (range= 12-144 months). Between group A and group B, there were no significant differences in terms of age, body mass index, comorbidities, pathological stage, treatments data (p=NS). In Group A 25/30 patients (83.3%) completed heterologous reconstruction. In 5 patients (16.67%) a conversion to combined or solely autologous reconstruction was needed. In Group B, 52/53 patients (98.11%) completed heterologous reconstruction. In 1 case (1.88%) the expander was removed due to infection and an autologous reconstruction was performed. Revision surgery was needed in 5 patients (9.4%). Autologous salvage reconstruction was more frequent for Group A patients (relative risk 10.4, p=0.02). The overall rate of complications was not different between the two groups (66.6% vs 58.5%; p=0.49) even if major complications (vast necrosis of mastectomy flaps with or without partial implant exposure, with or without implant removal, all III and IV-degree capsular contractures, either requiring or not requiring further surgery) were non significantly higher in the irradiated group (53.3% vs 32.0%; p= 0.07). However, analysing capsular contracture, a significantly higher risk of grade III-IV were recorded in Group A (40% vs 15%; relative risk 3.75, p=0.02). In Group A the median time from RT to reconstruction was 24 months (range= 9-192 months) and the incidence of major complications was not related to time from RT to reconstruction (p=0.313).

**Conclusion:** Heterologous reconstruction after salvage mastectomy in previously irradiated patients, is still possible with satisfactory results.

**PO-0674**

*Factors influencing patient reported cosmetic outcome: results of the Young Boost Trial*

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**Purpose or Objective:** The Young Boost trial (YBT), a multicenter RCT (NCT00212121), investigates whether a higher boost dose leads to a lower recurrence rate in young patients treated with breast conserving therapy, Cosmetic outcome is the second objective. The current analysis is to investigate the factors influencing the patients’ opinion about cosmesis.

**Material and Methods:** From 2004-2011, 2,421 breast cancer patients ≤ 50 yrs were included in The Netherlands, France, and Germany. All patients were treated with lumpectomy, followed by 50 Gy whole breast irradiation. Patients were randomized to receive a standard 16 Gy (n=1211) or a high 26 Gy boost (n=1210) to the tumour bed. Cosmetic outcome data at 4 years of 807 patients were used for the current analysis according to the following two scoring systems: 1. BCCT.core: Digital photographs were analyzed using a software program to extract an overall cosmetic score: excellent, good, fair or poor. This score is based on symmetry, skin color and scar visibility. The 7 features of symmetry in the BCCT.core program are: nipple position (pBRA), level of lower breast contour (pLBC), level of nipple (pNUR), distance from nipple to inframammary fold (pBCE), length of breast contour (pBCD), area of the breast (pBAD) and non-overlapping area between left and right breast (pBOD). 2. Patients’ score using a validated patient’s questionnaire about the breast appearance, including an overall score: very satisfied, satisfied, not dissatisfied, dissatisfied or very dissatisfied. First, we analyzed the 7 features of BCCT.core in a proportional odds model, to

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**Material and Methods:** Subcutaneous fibrosis was scored according to the Late Effects of Normal Tissue-Subjective Objective Management Analytical (LENT-SOMA) scale in 286 Italian breast cancer patients who received radiotherapy after breast conserving surgery. Eight non mitochondrial DNA (mtDNA) SNPs that define the nine major haplogroups in the European population were determined by PCR-RFLP analysis on genomic DNA extracted from peripheral blood.

**Results:** In a Kaplan-Meier analysis evaluated by the log-rank test, carriers of haplogroup H were found at lower risk of grade 2 subcutaneous fibrosis (P=0.018). In the multivariate Cox regression analysis adjusted for clinical factors (BMI, breast diameter, adjuvant treatment, dose per fraction, radiation type and acute skin toxicity), the haplogroup H emerged as significant protective factor for moderate to severe radiation-induced fibrosis (HR: 0.50, 95% CI 0.27-0.92, p=0.027).

**Conclusion:** Our results support a protective role of the mitochondrial haplogroup H in the development of radiation-induced fibrosis. Further prospective studies with larger sample size and different populations are nevertheless warranted to corroborate the possible influence of mitochondrial haplogroups on late normal tissue radiosensitivity.