28%, ORadjusted = 2.75, 95% CI 1.2 to 6.4, p = 0.018 and 32% versus 11%, ORadjusted = 3.71, 95% CI 1.3 to 10.6, p = 0.014 respectively). No other risk factors were associated with an increased risk for CD grade ≥II complications after DIEP-flap BR (age, comorbidity, SMI, radiotherapy, timing of reconstruction).

Conclusions: Low muscle quality as expressed by SMD was found to be an independent prognostic parameter for the development of postoperative complications. This could assist in the decision-making process for high-risk women opting for DIEP-flap BR. It remains to be clarified whether improving SMD by prehabilitation may improve the complication rate.

No conflict of interest.

327 Poster

Estimating lung cancer and cardiovascular mortality in female breast cancer patients receiving radiotherapy

T. Mulliez[1], K. Barbé[2], M. De Ridder[1]. [1]*UZ Brussels, Radiotherapy, Brussels, Belgium;* [2]*VUB, Brussels, Statistics, Brussels, Belgium*

Background: Our aim was to create clinical applicable risk assessment models to predict lung cancer and cardiovascular mortality in female breast cancer patients receiving radiotherapy.

Material and Methods: By integrating data of the PLCO cancer screening trial, the SCORE-risk charts and radiotherapy excess ratios we were able to create radiotherapy-induced lung cancer and cardiovascular mortality risk charts.

Results: These clinical applicable risk charts estimate individual current, 10- and 20-year risk of lung cancer and 10-year cardiovascular mortality based on lung and heart dose, age, systolic blood pressure, cholesterol, family history of lung cancer and smoking status including intensity, duration and cessation. Moreover it enables to quantitatively predict the effect of smoking cessation on future lung cancer probability.

Conclusions: Estimating radiotherapy-induced lung cancer and cardiovascular mortality might be useful to individualize radiotherapy and optimize lung cancer and cardiovascular prevention and screening in female breast cancer patients.

No conflict of interest.

328 Poster

Quality of life (QoL) post surgical treatment of breast carcinoma: A prospective study

E. Palma[1], G. Rizzo[1], S. Papi[1], F. Combi[1], S. Fenocchi[1], G. Tazzioli[1], R. Massa[2]. [1]*AOU Policlinico di Modena, Chirurgia Oncologica Senologica, Modena, Italy;* [2]*Studio sinergicamente, Psicologia, Firenze, Italy*

Background: Oncoplastic surgery, using plastic surgery's metods and techniques, has created a new route in breast surgery and breast cancer therapy with the target of oncologic outcomes comparable to traditional conservative surgery and better aesthetic results.

Several studies proved that a better cosmetic result improve psychological outcome.

The aim of this study is to evaluate oncologic outcomes and psychological impact on patients undergoing breast surgery with or without Oncoplastic technique, through an evaluation tool: Body Image after Cancer Questionaire (BIBCQ).

Material and Methods: From February 2018 to November 2018, we observed a sample of 60 patients, 30 of whom underwent conservative surgery with an oncoplastic approach and 30 without remodeling.

All treatment options were agreed by a multidisciplinary breast team.

All patients have been drawn the same morning as the surgery.

We evaluated oncological results in accordance with the state of resection margins.

To evaluate psychological impact we used two Questionnaires, one already well known and used in clinical practice, SF36, which is a patient's health self-assessment tool, the other one is BIBCQ.

BIBCQ is the only questionnaire currently existing and validated in the USA that is able to obtain informations about the quality of life of patients undergoing breast cancer surgery.

Results: Comparison of descriptive analysis of two study population show that patients submitted to Oncoplastic surgery tend to have more bodily attention (Vulnerability scale) t-2.697 p.009, less dissatisfaction in their physical appearance t-2,584 e p.012 (Dissatisfaction scale), more awareness of body changes (Transparency scale) con t-2.172 e p.034 as compared to the sample submitted to simple breast surgery.

Conclusions: Breast surgery affects an important part of woman's femininity, detecting a deterioration in the relationship with her body, partner or even in the relationship with family and friends.

Quality of life is of increasing importance in clinical oncology studies. When analysing publications concerning quality of life in breast cancer, however, the majority of the articles appear to study health status and not quality of life.

The small number of the sample used is due to the fact that this work is the beginning of a wider validation project of BBCQ in the Italian language, in order to use it in our clinical practice as an assessment tool and to let an improvement in our daily medical practice.

No conflict of interest.

Local Regional Treatment – Radiotherapy

329 Poster

Hypofractionated boost to the tumor bed in early breast cancer: Skin toxicity analysis

G. Oses[1], T.D. Barreto[1], C. Cases[2], C. Castro[1], A. Lloret[1], J. Saéz[2], M. Mollà[1]. [1]*Hospital Clínic of Barcelona, Radiation Oncology, Barcelona, Spain;* [2]*Hospital Clínic of Barcelona, Medical Physics, Barcelona, Spain*

Background: It has been prove that the use of tumor bed boost improves local control and is an important part of the breast conservation therapy. However the information of the use of a hypofractioned boost in the tumor bed is sparse, a revision is needed. We performed a retrospective analysis in our institution, evaluating skin toxicity and local control comparing Hypofractioned Boost (HB) versus Normofractioned Boost (NB).

Materials and Methods: We did a revision from April of 2015 to Juny of 2018, we selected a group of 96 patients of breast cancer was pT1pN0/mic and pT2pN0/mic in 82.3% and 17.7%, respectively. Treated with hypofractioned whole breast irradiation (WBI) in association with HB or NB were retrospectivelly analized, 49 patients were treated with normofractioned boost with 16 Gy in 8 fractions (2 Gy/fraction). Other group of 47 patients were treated with hypofractioned boost with 13.35 Gy in 5 fractions (2.67 Gy/fraction). Patient, tumor and treatment characteristics were evaluated. We examined skin toxicity with CTCAE versión 4; and statistical analyses were performed using SPSS versión 25, statistical significance was considered at a p-value of <0.05.

Results: With the media follow-up was 21.3 months (5–41). Media patient age was 57 years (35–82). In the univariate analysis there were no statistically significant differences between both groups were in patient characteristics (age at diagnosis, hormonal status). In the characteristics of the tumor (histological subtype, histological grade, tumor size, focality, hormonal receptors, expression Ki67 and HER2neu). In the characteristics of the surgery (post-surgery seroma, post-surgery hematoma). In the characteristics the treatment (hormonal treatment, monoclonal antibody or chemotherapy, irradiated breast volume, irradiated boost volume, technique with photons or electrons). We found differences in quadrant location where the boost is located (17 patients in quadrant superior normofraccionated boost vs 31 patient in hypofraccionated boost, p: 0.004) and to the post-surgery infection (4 patients in normofraccionated boost vs 1 patient in hypofraccionated boost, p: 0.01). No evidenced of acute skin toxicity exceeding G2 was observed. No evidence of late skin toxicity exceeding G1 was observed. No difference were found in acute or late skin toxicity between the two groups. No local recurrences were evident at the time of this publication.

Conclusions: Hypofractionated boost is a viable option in the management of conservative breast treatment. A longer follow up is needed to assess clinical outcomes and late toxicity.

No conflict of interest.

330 Poster

Exposure of the oesophagus in breast cancer radiotherapy: A systematic review of oesophageal doses published 2013–2018

F. Duane[1], A. Kerr[2], M. Aznar[3], Z. Wang[2], C. Taylor[2]. [1]*St. Luke's Radiation Oncology Network, St. James's Hospital, Dublin, Ireland;* [2]*University of Oxford, Nuffield Department of Population Health, Oxford, United Kingdom;* [3]*University of Manchester, Manchester Cancer Research Centre, Manchester, United Kingdom*

Background: Breast cancer radiotherapy has been shown to increase the risk of subsequent primary oesophageal cancer. It is unclear if avoidance of

the oesophagus is being considered routinely during radiotherapy treatment planning. This study aims to describe exposure of the oesophagus from modern breast cancer regimens.

Material and Methods: A systematic review of oesophageal doses from breast cancer radiotherapy regimens published during 2008–2018 was undertaken. Average mean oesophageal doses and average maximum oesophageal doses were described for different anatomical regions irradiated and techniques used. Oesophageal exposure from current modern regimens was compared to that received in previous decades.

Results: Seventy-three regimens from 16 countries reporting oesophagus doses were identified. The average mean oesophagus dose was 0.2 Gy (range 0.1–0.4) for partial breast irradiation, 1.5 Gy (Range 0.1–10.4) for whole breast/chest wall radiotherapy and 14.2 Gy (range 1.1–29.3) with the addition of regional nodal irradiation. For regimens that included regional nodal irradiation, the average mean oesophageal dose was higher for IMRT (21.6 Gy static IMRT, 13.6 Gy rotational IMRT) than tangential radiotherapy (5.5 Gy) ($p < 0.001$). Overall, average oesophageal exposure from modern regimens was similar to that estimated from regimens used in previous decades.

Conclusions: Exposure of the oesophagus remains an issue in modern breast cancer radiotherapy. Routine avoidance of the oesophagus during treatment planning may reduce the number of women developing a subsequent primary oesophageal cancer in the future.

No conflict of interest.

331 Poster

Chronic toxicity after intraoperative electron radiotherapy as boost followed by whole breast irradiation

G. Oses[1], M. Mollà[1], I. Alonso[2], X. Caparros[2]. *[1]Hospital Clínic of Barcelona, Radiation Oncology, Barcelona, Spain; [2]Hospital Clínic of Barcelona, Gynecology Oncology, Barcelona, Spain*

Background: Breast conserving surgery (BCS) followed by postoperative whole breast irradiation (WBI) is the current standard for early stage breast cancer patients. In selected patients the tumor bed itself represents a region with higher probability of in-breast recurrence, thus an additional boost dose of 10–16 Gy significantly reduces local recurrence rates. Intraoperative electron radiotherapy (IOERT) offers several advantages, like direct visualization of the tumor bed, less inter- and intrafractional motion. Objective of this retrospective analysis of IOERT was to assess chronic toxicity and local recurrence.

Material and Methods: 43 patients recruited between july 2013 and september 2019 with IOERT boost during BCS were analyzed. IOERT was applied using the mobile linear accelerator Linac. The toxicity was assessed by CTCAE 4.0 at 6 months after the end of treatment.

Results: The median age was 65 years (40–90). Pathological tumor size was 16 mm (6–50). 88.4% (38) of the patients had invasive ductal carcinoma. 51.2% (22) presented histological grade II. 48.8% (21) were Luminal A like, 23.3% (10) Luminal B like, 14% (6) HER2 positive, 14% (6) triple negative. All patients received IOERT boost with a total dose of 10–12 Gy, prescribed to the 90% isodose. Three patients converted from IOERT exclusive to IOERT boost due to histopathological characteristics. WBI with normofractionated (50 Gy) or hypofractionated (40.05 Gy) regimens was aplicated in those patients. 83.7% (36) of the patients received adjuvant hormone therapy. 44.2% (19) received chemotherapy treatment. The median follow-up was 55 months (5–80). Grade 3–4 fibrosis was not evidenced as chronic toxicity. Grade 1–2 fibrosis was evidenced in 14% (6) patient. 4.7% (2) patients presented with fat necrosis. 7% (3) presented seroma. 4.7% (2) had localized pain. 2.3% (1) presented localized hematoma. 2.3% (1) presented localized edema. We had no local recurrence in IOERT boost. The 4.7% (2) patients presented distant recurrence.

Conclusions: IOERT boost during BCS is a safe treatment option with low chronic toxicity. IOERT as boost is an effective treatment.

No conflict of interest.

334 Poster

Early invasive ductal breast cancer: Review after 5-year median follow-up of the first 681 patients treated by partial breast irradiation with intraoperative electron radiation therapy

C. Philippson[1], S. Simon[2], C. Vandekerkhove[2], I. Veys[3], D. Noterman[3], F. De Neubourg[3], M. Roman[3], J.M. Nogaret[3], D. Larsimont[4], A. Desmet[1]. *[1]Jules Bordet Institute, Radiation Oncology, Brussels, Belgium; [2]Jules Bordet Institute, Radiophysics, Brussels, Belgium; [3]Jules Bordet Institute, Surgery, Brussels, Belgium; [4]Jules Bordet Institute, Pathology, Brussels, Belgium*

Objectives: Intraoperative electron radiotherapy (IOERT) can be used to treat early breast cancer during the conservative surgery. The primary endpoint of this prospective phase II study is the evaluation of this treatment in terms of local control. Early complications and cosmesis will also be analyzed.

Patients and Methods: At Jules Bordet Institute, from February 2010 till July 2016, 681 consecutive patients underwent partial IOERT of the breast. Inclusions criteria were unifocal invasive ductal carcinoma, age ≥40 years (median age was 61, range 40–89), stage T0-T1N0, pathological size ≤20 mm, sentinel lymph node free (in frozen section and immunohistochemical analysis). A 21 Gy dose was prescribed on the 90% isodose line in the tumor bed with the energy of 6 to 12 MeV (Mobetron®- intraOp Medical).

Results: At a 5-year median follow-up (0.9 to 111 months), 24 patients presented an ipsi lateral relapse (3.2%) among which 8 in-quadrant (true recurrences). (1%). Thirty-four patients died (5%) among them 6 (0.9%) due to breast cancer, 11 (1.6%) due to another cancer and 17 (2.5%) due to another reason. Acute toxicity rate was low (grade I: 2.7%, grade II: 2.6%), similar to a conventional treatment. The cosmetic result was considered by the clinicians to be very good or good in more than 87%.

Conclusions: The rate of breast cancer local recurrence after IOERT is very low and comparable to published results. Our preliminary analyzes did not reveal classic criteria of increased risk of relapse as described in ESTRO and ASTRO recommendations. However, BRCA mutation and/or personal history of breast cancer seems to be significant. Free margins at the surgery are imperative as well as a watchful preoperative workup (MR is performed for every patients). The complication rate is low and the cosmetic results evaluated by the physicians are considered as good or very good in the vast majority of cases.

No conflict of interest.

335 Poster

The effect of a decision aid for breast cancer patients deciding on their radiation treatment

D. Raphael[1], N. Russell[2], T. van der Weijden[3], L. Boersma[1]. *[1]Maastricht University, Maastricht Radiation Oncology MAASTRO, Maastricht, Netherlands; [2]Netherlands Cancer Institute, Antoni van Leeuwenhoek, Radiotherapy, Amsterdam, Netherlands; [3]Maastricht University, Family Medicine, CAPHRI School for Care and Public Health Research Institute, Maastricht, Netherlands*

Trial abbreviation and ID: BRASA-trial (***NCT03375801***).

Background and Objective: The choice for Radiotherapy (RT) after breast surgery can be a so-called preference sensitive decision in selected patient groups: in these patients, RT lowers the recurrence risk, but does not improve survival. Therefore shared decision making (SDM) on RT, taking into account their personal preferences, is indicated. We developed a patient decision aid (PtDA) to support patients and their clinicians in the process of SDM. The aim of the study was to evaluate the effect of the PtDA on decisional conflict and SDM process measures.

Material and Methods: We performed a pre- and post-intervention study. 103 clinicians of 14 radiotherapy centers in the Netherlands participated in the study.

Population: We included 214 breast cancer patients in the pre- and 189 in the post-intervention arm.

Intervention: The PtDA was developed for 4 categories of breast cancer patients with a doubtful indication of RT after surgery. The implementation of the PtDA was adapted to the logistics of the participating sites.

Outcome Measures: Patients were asked to complete validated questionnaires: decisional conflict scale, SDM-Q9, CollaboRATE, and a knowledge test, immediately after they had made their decision (T = 1) as well as three months after (T = 2). In addition, the actual chosen treatment was registered.

Analysis: Differences between pre- and post-intervention groups were analysed with independent t-tests.

Trial Status: Patients were included between December 2017 and July 2019.

Trial Sponsors: This study was sponsored by the Dutch cancer society, KWF MAC2014-7024.

Results: We found no difference in patient characteristics between the pre- and post-intervention arm. Decisional conflict was similar for both groups, both at T = 1 and T = 1 (27.3 vs 26.2, and 27.9 vs 26.8, respectively). In addition, experienced SDM, measured with the SDM-Q9 and CollaboRATE at T = 1 were comparable between both groups (74.7 vs 73.6 and 88.9 vs 88.6 respectively). The use of the PtDA also did not affect the choice for more or less treatment at group level. The only significant