and expected to be well tolerated at long term. It facilitates acceptance by patients because of a limited number of treatment sessions and may contribute to a more efficient use of treatment facilities.

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255 Poster

The tolerance and efficacy of intraoperative radiotherapy (IORT) after conservative treatment in breast cancer

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Background: IORT after conservative treatment in breast cancer allow to raise total radiation dose in tumor bed and ought to reduce local recurrence risk. The aim of the study was to estimate tolerance and efficacy IORT with whole breast irradiation after breast-conserving treatment.

Material and Methods: Between 2003 and 2004, 112 patients with early stage breast cancer (T1−2, N0−1) were treated in Center of Oncology Maria Sklodowska-Curie Memorial Institute, Branch Gliwice in Poland. All patients had breast conservative treatment (wide tumor excision with regional lymph nodes) followed by Intraoperative Radiotherapy using Low-Energy X Rays. The total dose was 5−7.5 Gy and was specifed 0.5 cm depth from tumor bed. After surgery patients received external beam radiation therapy to the whole breast. The total dose was 50 Gy delivered in 25 fractions. The radiotherapy included also regional lymph nodes if pathological stage was classified as N+.

Acute and late toxicity of treatment was evaluated according to RTOG/EORTC criteria. The evaluation of normal tissue early reactions included also the analysis of wound healing time. A Kaplan-Meier method was used to plot survival curves.

Results: Extended wound healing time after operation with IORT was the most frequent and occured in 16% of patients. Wound infection was observed in 15%, fistula or necrosis in 10% and hematoma in tumor bed in 9% of patients. 66 patients (59%) developed Grade I, 12 patients (11%) Grade II and 17 patients (15%) Grade III early skin toxicity. Late skin toxicity in Grade I was observed in 31 patients, Grade II developed 9 patients. Late toxicity from subcutaneous tissues in Grade I, II, III properly developed 56 (50%) patients, 8 patients (7%) and 1 patient (1%). The median follow up was 5 years. 5-year disease free survival was in 88%. In 3 patients (2%) occurred local recurrence. Distant metastases occurred in 7 patients (6%).

Conclusions: The results of the study have shown that IORT with whole breast conventional radiotherapy after conservative treatment in early stage breast cancer was well tolerated. The risk of local recurrence and distant metastases in those group of patients was low.

Thursday, 25 March 2010 18:15–19:15

POSTER SESSION

Surgical management (including reconstructive surgery)

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Resection margins in breast conservation surgery: what is an adequate margin?

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Background: Adequate surgical margins are the strongest predictors of local recurrence following breast conservation surgery (BCS). Involved margins carry a significant risk of local recurrence despite radiation therapy. However, there is no consensus as to what is considered an adequate margin. We therefore sought to determine the incidence of residual tumour following BCS, and to identify factors predictive of residual tumour and local recurrence.

Materials and Methods: A retrospective review was performed of 550 patients who underwent BCS at our institution from January 2001 to December 2008. In most cases, wide excision extended from beneath the skin to the pectoralis fascia. The presence of residual tumour and local recurrence was correlated with the closest surgical margin and standard clinicopathological parameters.

Results: Forty-seven of 185 patients (25.4%) who underwent repeat surgery were found to have residual tumour. Twenty-six percent (44 of 170) of patients with involved or close margins had residual tumour, compared to 10% (1 of 33) of those with margins of 1 mm; this was not statistically significant. Two patients with margins of more than 1 mm were found to have separate foci of tumour on repeat surgery. The anterior or posterior margins alone were close or involved in 46 patients; 8 of whom underwent repeat surgery. No residual tumour was found in all cases, although a separate focus of invasive carcinoma was found in 1 patient. None of the 38 patients who did not have repeat surgery developed local recurrence. No factors predicting for residual tumour were identified; notably, margins status did not correlate with the presence of residual tumour or the risk of local recurrence. Only lymphovascular invasion and oestrogen receptor status were independent predictors of local recurrence on multivariate analysis. There were no difference in the local recurrence rate between margin status of 1 mm, 2−5 mm and more than 5 mm (4.5%, 5.7% and 7% respectively).

Conclusions: Our study finds that radial margin of 1 mm result in acceptable and similar local recurrence rate when compared with larger margins and thus re-excision is not necessary. Furthermore, anterior or posterior margins status does not affect local recurrence if the excision had been taken from the skin down to the pectoralis fascia. In addition, factors other than margin status affect local recurrence in BCS.

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Quality of care through the eyes of breast cancer patients: an assessment before and after implementation of a short stay programme following breast cancer surgery

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Background: Short admission following breast-cancer surgery is an established and safe care protocol that has not, as yet, been widely implemented across Europe. Aim of this study was to assess breast-cancer patients' opinions on quality of breast-cancer care before and after implementation of a short stay protocol, including disease-management principles, and to formulate patient-inspired targets for further quality improvement.

Material and Methods: Patients were asked to complete a self-administered validated questionnaire on quality of breast-cancer care six weeks after surgery. The study was conducted in four hospitals in the Netherlands, following a before-after design, and included two six-month measurement periods between December 2005 and June 2007. These measurements were performed after implementation of the short stay programme and in the care as usual situation, i.e. before implementation of the short-stay programme.

Results: Among 421 eligible patients, 324 (77%) signed informed consent and 281 (87%, before implementation: 137/161; after implementation: 144/163) completed the questionnaire. Scores on quality of patient education regarding postoperative treatment-related aspects showed a slight deterioration (e.g. education on drain care and education on a prosthesis). Services by the breast nurse remained stable, while services by the surgeon, patient education regarding activities at home, and patient education regarding postoperative treatment-related aspects remained stable on average with a greater variation: some aspects showed improvement and other deteriorated somewhat. Although several separate quality of care items not belonging to a specific factor had improved slightly after introduction of the short stay programme (such as the availability of

all results when a patient had an appointment with a doctor), there was still room for further improvement on other aspects (for example regarding the time between actual diagnosis and surgery).

Conclusions: Patients' ratings of quality of care overall remained stable between the period before and after implementation of the short stay programme. Although newly introduced patient education on postoperative treatment-related aspects was insufficient. We conclude that a breast cancer care programme in short stay can be introduced with, on average, similar quality of care as perceived by the patient. Specific care aspects were identified that require continued attention.

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Evaluation of radioactive seed versus radio guided localization in breast conserving surgery after primary systemic therapy

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Objective: To analyze the use of Radioactive Seed Localization (RSL) as an alternative to Radio Guided Occult Lesion Localization (ROLL) in operative excision of non palpable breast tumors after Primary Systemic Treatment (PST).

Methods: Retrospective analysis of 114 patients treated with PST between 2003 and 2009 in the Netherlands Cancer Institute. Inoperable patients (T4, N3) were excluded. The majority of patients (70%) were initially treated with doxorubicin and cyclophosphamide and participated in two randomized studies in which anthracycline and taxane based regimens were compared. Since 2005 HER2-positive patients received chemotherapy in combination with trastuzumab. Till the end of 2007, breast lesions were marked with a twist markers prior to systemic treatment. Since June 2007 radioactive iodine seeds were placed to mark the tumor burden before the start of PST. The decision to perform breast conserving surgery was based on the radiological response on MRI and the patients preference.

Results: From 2003 till November 2009, 114 patients with breast tumors after PST were treated with breast conserving therapy. In 80 patients breast conserving surgery was performed with the use of ROLL and in 34 patients with the use of RSL. Additional surgery was required because of irradical resection in 9% (7/80) and 11% (4/34), respectively. These differences are not statistical significant. The overall pCR rate was 26% (21/80) in the group of patients treated with the ROLL and 43% (13/30) in the group of patients treated with RSL.

Conclusion: RSL is comparable with ROLL in terms of tumor free margins in patients that were treated with breast conserving therapy after PST. The RSL method reduces scheduling conflicts for surgery since no radiologic localization is needed anymore prior to surgery. Therefore, RSL is an attractive method for localizing breast tumors before primary systemic treatment and has essentially replaced the traditionally placed twist marker in our tertiary-care medical center.

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The MARI procedure; Mapping of the Axilla with Radioactive Iodine seeds

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Background: An important benefit of neoadjuvant chemotherapy (NAC) is the increase in breast-conserving surgery. At present the response of axillary lymph node metastases to chemotherapy cannot be accurately assessed. Therefore axilla-conserving therapy is not a benefit. We aimed to assess a new surgical method to evaluate the axillary response:: the MARI procedure which stands for Mapping of the Axillary lymph node with Radioactive Iodine seeds.

Material and Methods: Prior to NAC, proven tumour-positive axillary lymph nodes were ultrasound guided localized with Iodine-125 seeds in 15 patients. After NAC, the marked lymph nodes were selectively removed with the use of a gamma-detection probe. A complementary axillary lymph node dissection was performed to assess if pathological response in the marked node was indicative for the pathological response in the additional lymph nodes.

Results: Tumour-positive axillary lymph nodes were successfully localized with Iodine-125 seeds in 15 patients. The marked lymph node (MARI-node) was surgically detected and selectively removed after NAC in all patients. The pathological response to chemotherapy in the MARI-node was indicative for the overall response in the additionally removed lymph nodes. Nine patients with macrometastases in the MARI-node had macrometastases in their complementary axillary lymph node dissection specimen. Two patients with isolated tumour cells in the MARI-node showed residual micrometastases in an area of reactive fibrosis in the complementary axillary lymph node dissection. Four patients with a tumour-negative MARI node also had a pathological complete remission of the additionally removed axillary lymph nodes.

Conclusions: This study shows that marking and selectively removing metastatic lymph nodes after NAC is feasible. The tumour-response in the marked lymph node may be used to tailor further axillary treatment, and herewith makes axilla-conserving surgery an potential treatment after neoadjuvant chemotherapy.

	MARI-node	Complementary axillary lymph node dissection			Response MARI node
	Size metastasis	Number removed	Number tumour-positive	Size largest metastasis	indicative
1	Macrometastasis	27	3	Macrometastasis	Yes
2	Macrometastasis	18	2	Macrometastasis	Yes
3	Macrometastasis	19	1	Macrometastasis	Yes
4	Macrometastasis	20	17	Macrometastasis	Yes
5	Macrometastasis	11	2	Macrometastasis	Yes
6	Macrometastasis	10	3	Macrometastasis	Yes
7	Macrometastasis	28	3	Macrometastasis	Yes
8	Macrometastasis	25	25	Macrometastasis	Yes
9	Macrometastasis	15	1	Macrometastasis	Yes
10	Isolated tumour cells	19	1	Isolated tumour cells	Yes
11	Isolated tumour cells	24	2	Micrometastasis	Yes
12	Complete remission	30	0	Complete remission	Yes
13	Complete remission	40	0	Complete remission	Yes
14	Complete remission	9	0	Complete remission	Yes
15	Complete remission	23	0	Complete remission	Yes

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Comparative study of lymphoedema with axillary dissection level I−II versus axillary disection level I−III in patients undergoing breast radical surgery

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Introduction: Breast cancer related lymphoedema is a chronic debilitating complication. Our aim was to compare the incidence of lymphoedema in two groups of patients undergoing axillary disection; one undergoing axillary dissection level I−II, and the other undergoing axillary disection level I−III.

Material and Methods: Retrospective review of records of two sequential groups of patients treated in surgical clinic Nis between 2004 and 2006. Both groups had minimum of 2 years follow-up.

Results: Two hundred and twelve patients were included in Group 1 and 104 in Group 2. The incidence of lymphoedema in Group 1 was 7.7% compared to 11.5% in Group 2. This was statistically significant with a P value <0.001. In the node-positive patients, the incidence of lymphoedema in Group 1 was 12.2% compared to 14.4% in Group 2, although the differences were not statistically significant with P = 0.28.

Conclusions: The incidence of lymphoedema in the axillary group with dissection level I−III was higher, although the differences were less pronounced in the node-positive patients. The effectiveness of radiotherapy as an alternative to full axillary dissection among patients with positive nodes is currently under investigation in randomised controlled trials.

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Reasons why women do not undergo immediate breast reconstruction and estimation of accuracy of predicted need for chest wall radiotherapy

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Background: NICE guidelines recommend that immediate breast reconstruction (IBR) should be "discussed with all patients who are being advised to have a mastectomy, and offer it except where significant co-morbidity or (the need for) adjuvant therapy may preclude this option". The aim of this study was to examine the reasons why patients do not undergo IBR, and in particular to determine how accurate the multidisciplinary team (MDT) are at predicting the need for adjuvant chest wall radiotherapy.