higher increase in the value of the S/C ratio in clavicle among ANS treated patients than in the control group ($p < 0.001$) and not significant difference for data taken from the second rib; 4) there was not any difference noticed in the value of parameter C in both analyzed locations between patients treated with ANS and subjected to observation; 5) patients who experienced bone fractures during adjuvant ANS therapy (N = 11) had significantly higher increase in the S/C ratio as compared to those without fractures ($p = 0.0475$) and controls ($p < 0.001$).

Conclusions: 1) our data confirm observations that ANS exerts osteopathic activity in BC women and induces quantitative changes in bone geometry, which might be related to the increase of BFR; 2) significant increase in the S/C ratio in patients who experienced bone fractures under ANS therapy (as compared to those without that complication and control cases) suggests its potential value in prediction of BFR and will be assessed on more representative group of patients.

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Evaluation of side effects after axillary lymph node dissection for breast cancer

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Background: Main focus and purpose of the current study was to evaluate breast cancer patient's symptoms after axillary dissection measured by their subjective assessments.

Material and Methods: A total number of 516 patients, who had undergone either breast conserving therapy or mastectomy including axillary dissection for invasive breast cancer from 1999 to 2002, were enrolled in the present study.

A sample of 336 women (65.1%) completed the self-administered questionnaire and their subjective estimation of long-term sequel of axillary dissection was evaluated. Besides demographic data, responses regarding axillary symptoms such as pain, impairment of arm mobility, analgetical treatment and others were included in the questionnaire.

Results: Pain and impairment of arm mobility improved significantly in course of time in our study population. Although these results prove that most of the patients do feel less pain and arm movement restriction in course of time, still 19.4% are left with mediocre pain and 19.6% with mediocre impairment of arm mobility after 12 months. When evaluating the correlation between the types of surgery which were used (mastectomy or breast conserving therapy) and the items impairment of arm mobility, pain and usage of analgesic drugs, no significant difference ($p > 0.05$) in the postoperative effect between the two types of surgical management could be distinguished.

Furthermore our study showed that the staging of the primary breast carcinoma has no direct impact on arm mobility or on impairment of pain.

Conclusions: The results of this study demonstrate that complaints significantly ($p < 0.0001$ for the parameters pain and impairment of arm mobility) diminish in course of time in the patient collective. Still our figures clearly show that one fifth of the patient collective are left with mediocre pain and impairment of arm mobility, which proves that morbidity remains substantial.

ALND associated complications can adversely affect quality of life, e.g. delaying resumption of normal activities and returning to work. Evaluated complaints such as pain, impairment of arm mobility and analgetical usage seem to be independent from the type of surgery.

Evidence from our evaluation further state, that the initial size of the breast cancer (T1, T2, T3, T4) exerts no influence on these symptoms.

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High incidence of Antiemetic treatment failure to standard chemotherapy in women with breast cancer – A prospective QOL study in clinical practice setting in Spain – EME-Q Study

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Background: Chemotherapy (CT) Induced Nausea and Vomiting (CINV), is the most feared acute side effects by patients. Although for physicians it's frequently considered as an overcome problem, given the availability of antiemetic agents. The objective of this study was to estimate, under clinical practice conditions, the incidence of CINV with standard CT regimens in women with breast cancer.

Material and Methods: Nine oncology practice units across Spain participate in this prospective study between January 2004 and January 2006. CT naïve women with stage II to IV breast cancer and indication for a moderate to highly emetogenicity CT regimen (Hesketh classification grade 4 or 5) were proposed to participate. Information about their first CT cycle and the antiemetic prophylactic therapy ($5HT_3$-RAs, steroids and dopamine receptor antagonists -RA) were collected. Patients completed a 5-day diary recording CINV episodes during days 1−5 following CT. Nausea was measured on a 100 mm Visual Analogue Scale (VAS). Antiemetic treatment failure (lack of Complete Protection) was defined as having had either an emetic episode, significant nausea (VAS $\geqslant$25 mm), or having required antiemetic rescue medication. On day-6 patients completed the Functional Living Index-Emesis (FLIE), formed by two 9-items subscales on nausea (FLIE-n), and vomiting (FLIE-v).

Results: Overall 79 females, median age 47, were recruited. Only 27% received a grade 4 Hesketh CT regimen, 73% been grade 5. CT regimens included anthracyclines in 94% of patients (CAF 36%, CEF 27%, other 37%), ciclophosphamide in 87% and taxanes in 13%. All patients received antiemetic prophylactic treatment, 95% covering the acute and delayed phases. All patients received $5HT_3$RAs (2.5 days mean length of therapy – LOT), and steroids (2.9 days average LOT), and 44% also received dopamineRAs (1.8 days average LOT). Within days 1 to 5 after CT, 44% of the patients experienced Significant Nausea, 53% emetic episodes (47% $\geqslant$2 days), and 47% required rescue medication. In total, antiemetic therapy failed to keep Complete Protection in 80% of patients. CTIN had a great impact on patient's daily living. Patients with significant nausea had an average FLIE-n score of 4.1, as compared with 5.3 for those with mild nausea (VAS 5−25 mm) and 6.8 for those patients without nausea ($p < 0.001$). The likelihood of experiencing an impact on the IDL was also related to the number of days with nausea and vomiting ($p < 0.001$).

Conclusion: Despite the generalised use of $5HT_3$RAs, steroids and dopamine-RAs, CINV remains a highly incident problem in women with breast cancer confronted to CT. There is need for better treatment alternatives to improve this frequent side effect of CT in Spain.

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The effect of toremifene on lipid metabolism compared with that of tamoxifen in vitro

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Background: Tamoxifen (TAM) and Toremifeme (TOR) are selective estrogen receptor modulators (SERMs), which not only prevent estrogen from stimulating breast cancer growth, but also have agonistic effects in a number of physiological systems including bone and lipid metabolism. They also have effects partly similar to estrogen which produces a well-known hypertriglycemic effect. TAM is known to increase intracellular triglyceride, but the action of TOR on lipid metabolism in vitro has still not been known yet.

Material and Methods: HepG2 cells obtained from American Type Culture Collection were grown in Minimum essential medium (MEM) with supplemented with 10% fetal bovine serum (FBS), 1 mmol/l sodium pyruvate (NaPy), 2mM L-glutamine, 1% non essential amino acid (NEAA), 100 IU/ml penicillin, 100μg/ml streptomycin, and 250 ng/ml amphotericin B. HepG2 cells were preincubated overnight in serum-free MEM supplemented with 1% Bovine serum albumin (BSA). The following day, after removing the media, the cells were incubated for an additional 24 h in 1 ml media containing the appropriate compounds (TOR and 4-Hydroxytamoxifen; TAM) with or without free fatty acid (18 μmol/l oleic acid). Oleic acid was dissolved in 1% BSA. Both compounds were dissolved in 100% ethanol and added to media at a 1:1000 dilution. At the end of incubation period, the cells were washed 3 times with 1 ml ice-cold phosphate-buffered saline (PBS), and the solute cell protein was dissolved in 1 ml 0.1 mol/l NaOH and measured using the method of Bradford with BSA at the standard. To determine the intracellular triglyceride and total cholesterol, after washing 3 times with cold PBS, the cells were treated with 1 ml hexane/isopropanol (2:1) for 30 min at room temperature. These samples were transferred to the test tubes. The organic solvent was removed under nitrogen, and the lipids were resuspended in 500 μl 95% ethanol. Cellular concentrations of total cholesterol and triglyceride were measured by enzymatic kit.

Results: Intracellular concentrations of total cholesterol were decreased by both TAM and TOR, but not significantly different from control level. Neither TAM nor TOR changed the intracellular concentration of triglyceride in the absence of oleic acid. In the presence of oleic acid, TOR produced no changes in the intracellular concentrations of triglyceride; whereas TAM increased the intracellular concentrations of triglyceride at concentrations ranging from 10^{-7} to 10^{-5} mol/l of TAM ($p < 0.05$). Moreover, there was significant difference at concentrations between the two groups ranging from 10^{-9} to 10^{-5} mol/l ($p < 0.05$).

Conclusions: Our study suggests that TOR treatment does not increase intracellular concentrations of triglyceride in the presence of oleic acid, although TAM treatment increases the concentrations of triglyceride. Therefore, TOR may be a safer treatment in patients with unstable triglyceride levels or a history of hypertriglyceridemia.

Friday, 18 April 2008 12:30–14:30

POSTER SESSION

Surgical management (including reconstructive surgery)

512 Poster

Perspective on breast and axilla preservation after introduction of targeted intraoperative radiotherapy and sentinel node biopsy for the treatment of patients with early breast carcinoma

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Background: The purpose of the study is: 1) to analyse early results of the breast conserving treatment (BCT) in patients with breast carcinoma using both intraoperative radiotherpy (IORT) and sentinel node biopsy (SNB) simultaneously; and 2) to estimate breast and axillary lymph nodes preservation with this approach.

Material and Methods: The treatment protocol was approved by Ethical Committee. The BCT using combined SNB, wide local excision (WLE) and IORT was performed in 77 patients who signed the informed consent. Patients with primary tumour $\leqslant$2 cm and clinically negative axillary lymph nodes were eligible. The SNB was done using isotope-dye technique with preoperative lymphoscintigraphy. The INTRABEAM® PRS 500 system (Carl Zeiss, Oberkochen, G) was used for irradiation of the tumour bed with the dose of 20 Gy (boost; energy 18 keV). After completion of the adjuvant treatment, whole breast external beam irradiation was performed with a total dose of 50 Gy, omitting the tumour bed. Objective computerized aesthetic effect assessment was done using BCCT.core® software (University of Porto, PT). Follow-up time ranged from 1 to 24 months (mean 11 months).

Results: Minor early postoperative complications (reddening of the skin wound 2; seroma 3) did not prolong hospitalization. In 10 patients (13%), surgical specimen pathology revealed positive margin. Re-excision of the margins was performed in 8 patients. In one of these patients mastectomy was necessary because neoplastic cells in re-excison specimen. In 16 (21%) patients (selective) lymphadenectomy was performed following positive SNB. In one patient both positive SNB and positive margins necessitated mastectomy; whereas in another patient after selective lymphadenectomy, mastectomy was necessary because of margins' infiltration by comedo type carcinoma. Altogether breast and axillary lymph node preservation was possible in 59 (77%) of patients. One patient has fibrosis of the treated breast quadrant. In patients after breast conservation who reached 1 year follow-up, the BCCT.core® general aesthetic score was excellent in 50%, good in 42%, and fair in 8% of patients. There was neither poor aesthetic outcome, nor local recurrence.

Conclusions: The combination of SNB, WLE and IORT is a safe surgical procedure leading both to breast and axillary lymph nodes preservation with improved patients' satisfaction by excellent or good aesthetic effect and shortening the time of treatment in majority of patients.

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Multidisciplinary quality management of breast cancer surgery

J. Tio[1], S. Weigel[2], D. Hungermann[3], A. Woestmann[2], C. Kersting[4], P. Wulfing[1], K. Roterberg[1], T. Decker[1]. *[1]University of Münster, Dept. of Gynecology and Obstetrics, Münster, Germany; [2]University of Münster, Dept. of Radiology, Münster, Germany; [3]University of Münster, Insitute of Pathology, Münster, Germany; [4]University of Münster, Institute of Pathology, Münster, Germany*

Surgical therapy of breast cancer (BC) as a one-step-procedure is important for oncological results, patients' satisfaction and cost effectiveness of breast units. Therefore, the number of surgical procedures to reach complete excision of the lesion means an indicator of quality.

Aim: To investigate the impact of multidisciplinary planning (MDP) and multidisciplinary perioperative quality management (MDQM) on the rate of secondary surgery in BC patients.

Methods: From January 2003 to December 2007 645 patients with primary BC were treated in our Breast Unit. During the whole period under review minimal microscopically tumour-free margins to the resection lines (RLs) laid down in the multidisciplinary therapy protocol were 5 mm for invasive cancer (IC) and 10 mm for pure DCIS concerning all margins except to the always subcutaneous located ventral RL and the dorsal RL consisting of the pectoralis fascia. In case of margins involved by invasive cancer or DCIS re-excision or mastectomy was advised. In October 2004 additionally first MDP of surgery, and secondly MDQM were introduced. MDP is done by a nominated team of surgeons, radiologists and pathologists. To reach the targeted margins at final histopathology the size of macroscopic margins of segmental resections around the mass or microcalcification area in imaging is planned depending on the nuclear grade of the DCIS component: 10 mm macroscopic margins are planned for IC with or without high grade DCIS as for pure high grade DCIS. 20 mm resection margins are planned for intermediate and low grade DCIS with or without IC. MDQM is done intraoperatively by macroscopic measuring of margins by the pathologist or in case of microcalcifications by the radiologist. If macroscopically planned margins could not be reached a re-resection within the same operation is done.

We compared the rate of patients with more than one operation needed to reach the definite surgical therapy as the rate of breast conserving therapy (BCT) for two periods before and after implementing MDP and MDQM (2003–2004 171 patients vs. 2005–2007 474 patients with similar distribution of tumour sizes.

Results: The rate of patients with two (or more) operations needed to get the targeted minimal margins was 35.1% before, and 19.0% after implementing MDP and MDQM, whereas the BCT rate did not differ significantly (54.1% vs. 57.6%).

Conclusions: By MDP and MDQM the multidisciplinary breast team can spare secondary surgery without compromising tumour-free margins or the rate of BCT in patients with primary BC.

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Breast cancer – analysis of tumor size at diagnosis in 3,050 consecutive surgical patients

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Background: Breast cancer is the third most frequent cancer in the world and the most common malignancy of female. In the past the majority of patients was diagnosed when the disease was in an advanced stage. Analysing different series of patients affected by breast cancer reported in literature appears that in these last recent years there is worldwide an increased number of patients with stage I disease, suggesting an increase in the early detection of breast cancer as a result of improvement of the diagnostic techniques and of the extensive screening programs.

Material and Methods: The medical records and the pathological reports of 3,050 consecutive patients undergone breast resection between 1992 and 2005, examined at the Anatomy-Pathologic Service of the University of Insubria in Varese, were reviewed and registered in a computerized data-base.

The aim was to compare and analyze pathologic data.

For each patient enrolled were registered: gender, age at diagnosis, treatment, type of surgical resection, sentinel lymphnode biopsy (LNS) (with the total number of lymphnodes for each axillary level), histological type, pathological staging, grading, tumoral size and hormonal receptor status.

Results: The analysis of tumour size demonstrated a progressive decrease since 1992 to 2005.

During the study period, the tumors lower than 1 cm increased from 13.4% to 15.4%; the tumors diagnosed at Stage I increased from 44% to 57%. The most frequent histological type was ductal carcinoma; the CDIS increased from 4% to 6%; the percentage of lymphadenectomies decreased from 72% to 52%.

We observed a progressive decrease of mastectomy with a consequent increase of breast conservative treatment. Similarly, after the introduction of LNS biopsy there was a decrease of N-lymphadenectomies.

Conclusions: Our longitudinal study on 3,050 consecutive surgical patients confirmed the progressive reduction of tumor size at diagnosis in these last decades.

Perioperative factors that correlated with the decreased tumour size over time were screening and improvement of diagnostic techniques; the