Neuroticism-Extraversion-Openness-Five-Factor-Inventory (NEO-FFI) and the State-Trait-Anxiety-Inventory (STAI). QoL was measured with the World Health Organization Quality of Life Questionnaire (WHOQOL-100).
Results: The two treatment groups did not differ on overall QoL. In the BCT group trait anxiety had a significant influence on overall QoL at all measurement times. Women in the BCT group with a high score on trait anxiety were 18 times more likely to have a low overall QoL one year after treatment (OR 18.7; 95% CI 1.50–232.29; p = 0.023) compared with women in the BCt group scoring not high on trait anxiety.
In the MTC group the scores on overall QoL were mainly influenced by extraversion and neuroticism. Women with a high score on neuroticism were 13 times more likely to have a low QoL one year after surgery (OR 13.1; 95% CI 1.00–172.70; p = 0.05) compared with women with a low to normal score.
Conclusion: Personality, especially trait anxiety and neuroticism, determined patients' overall QoL scores.

2039 POSTER

Radiotherapy after breast conserving surgery for ductal carcinoma in situ: an overview of randomized trials

K.P. Economopoulos[1], I.J. Dahabreh[1], S. Murray[2]. [1]*University of Athens Medical School, Medical Oncology, Athens, Greece;* [2]*Metropolitan Hospital, Molecular Biology and Genetics, Athens, Greece*

Background: More than 30% of newly diagnosed breast cancers are ductal carcinomas in situ (DCIS). Breast conserving surgery (BCS) is considered the standard of care for most DCIS but the addition of postoperative radiotherapy to BCS remains controversial. We performed a meta-analysis of randomized controlled trials to investigate the value of administering a course of radiotherapy after BCS for DCIS.
Methods: We searched the MEDLINE database, the online proceedings of the American Society of Clinical Oncology and the San Antonio Breast Cancer Symposium to identify trials randomizing patients with DCIS, to either radiotherapy or observation, following BCS. Data on post-treatment breast cancer events, both ipsilateral and contralateral, were abstracted from published reports. Random effects meta-analysis was employed to estimate pooled risk ratios (RR) and their confidence intervals, with values lower than one indicating a benefit from adding radiotherapy to BCS. When the calculated RR indicated a >50% effect, we calculated the number needed to treat statistic. Results are presented in accordance with the QUOROM guidelines.
Results: We identified 4 trials randomizing a total of 3899 women to either radiotherapy (1,965 women) or observation (1,934 women), following BCS. The addition of radiotherapy to BCS reduced the incidence of ipsilateral breast cancers (RR, 0.47; 95% CI, 0.39−0.56), both invasive (RR, 0.50; 95% CI, 0.40−0.62) and non-invasive (RR, 0.45; 95% CI, 0.35−0.58). The number needed to treat in order to avoid one breast cancer event was 8.3 for all ipsilateral tumors; 18.9 for invasive and 15.6 for non-invasive. There was a non-statistically significant trend towards an increased incidence of contralateral breast cancers (RR, 1.30; 95% CI, 0.98−1.73) in patients receiving radiotherapy. This was mainly due to an increased incidence of invasive contralateral cancers (RR, 1.40; 95% CI, 1.00−1.96), but not non-invasive ones (RR, 0.90; 95% CI, 0.28−2.92). The incidence of distant metastases (RR, 0.95; 95% CI, 0.65−1.38), and deaths due to breast cancer (RR, 1.17; 95% CI, 0.74−1.84) were unaffected by the administration of radiotherapy.
Conclusion: The addition of a course of radiotherapy after BCS for DCIS is effective in reducing the incidence of ipsilateral breast cancers, both invasive and non-invasive. Although it cannot be advocated for all women with DCIS, radiotherapy following BCS is a valid option in the management of this patient population. Further research is needed to define factors that may be predictive of an increased benefit from radiotherapy.

2040 POSTER

Increased prevalence of hypothyroidism after adjuvant treatment for stage II/III breast cancer

K.V. Reinertsen[1], T. Bjøro[2], M. Cvancarova[3], E. Løkkevik[4], T. Danielsen[5], A.A. Dahl[1], S.D. Fosså[1]. [1]*Rikshospitalet–Radiumhospitalet Medical Center, The Cancer Clinic Dept for Clinical Cancer research – unit for long term outcome, Oslo, Norway;* [2]*Rikshospitalet–Radiumhospitalet Medical Center, Dept of Medical Biochemistry, Oslo, Norway;* [3]*Rikshospitalet–Radiumhospitalet Medical Center, Dept of Statistics, Oslo, Norway;* [4]*Rikshospitalet–Radiumhospitalet Medical Center, The Cancer Clinic Dept of Oncology, Oslo, Norway;* [5]*Rikshospitalet–Radiumhospitalet Medical Center, The Cancer Clinic Dept of Medical Physics, Oslo, Norway*

Background: Breast cancer (BC) may be associated with hypothyroidism (Hypo). Adjuvant loco-regional radiotherapy (RT) with or without chemotherapy/hormones (CT/H) are suspected to increase such an association.
Patients and Methods: 3−5 years after treatment for stage II/III BC 315 consecutive patients (median age 56 years, range 30−75) were examined for the prevalence of Hypo by a questionnaire including eight thyroid-related questions and blood tests (TSH). The patients were compared to women from a cancer-free, age-matched general population cohort (GP) using descriptive statistics and a Cox regression model. Treatment for BC consisted of surgery (100%), loco-regional RT (100%), CT (81%) and/or H (76%).
Results: At the examination 13% of the BC patients reported earlier diagnosed Hypo compared to 7% of the GP (Table). 19 (6%) of the BC patients were diagnosed with Hypo before their malignancy which was similar to the prevalence in the GP. However, after the BC diagnosis the patients were significantly more likely to develop Hypo compared to the GP (HR 11, p < 0.001) – with 22 patients being diagnosed with Hypo at a median time of 16 months (range 5−51) after their BC diagnosis.

Age[a]	BC patients				GP	
	Total	Patients with Hypo			Total	Hypo
		Total	Pre BC	Post BC		
30−39	14	0			42	0
40−49	66	8	5	3	198	11
50−59	159	21	9	12	477	31
60−69	64	9	4	5	192	16
70−79	12	3	1	2	36	3
Total	315*	41 (13%)*	19	22	945*	61 (7%)*

[a]Age at examination.
*p < 0.001.

Thyroid function tests in patients without former or present thyroid disease: The prevalence of undiagnosed biochemical Hypo (TSH⩾10 mU/l) was 1.4% in the GP vs 0.0% in the BC patients. However, 9.4% of the BC patients vs 4.5% in the GP had TSH 4.1−9.9 mU/l (p < 0.003).
Conclusion: Self-reported Hypo and moderately elevated TSH (4.1–9.9 mU/l) are significantly more prevalent among patients treated for BC than in a cancer-free GP cohort. This high incidence of newly diagnosed Hypo during the first five years post-treatment indicates an association between treatment and the development of Hypo.

2041 POSTER

Radiotherapy of the breast and internal mammary and median supraclavicular (IM-MS) lymph nodes using a mono-isocentric technique

S. Petillion[1], K. Erven[2], C. Weltens[2], E. Van Limbergen[2], F. Van den Heuvel[1], W. Van den Bogaert[2]. [1]*U.Z. Gasthuisberg, Radiation Physics, Leuven, Belgium;* [2]*U.Z. Gasthuisberg, Radiation Oncology, Leuven, Belgium*

Background: The most commonly used technique to irradiate the IM-MS lymph nodes in breast cancer patients, consists of an anterior IM-MS field, matched to tangential breast fields. With the introduction of CT-based treatment planning it becomes obvious that dose heterogeneities in the junction region often occur with this field set-up and cannot be disregarded any longer.
Purpose: To compare a conformal technique with standard field set-up (3Dst) for locoregional breast irradiation to an optimised isocentric conformal technique (3Diso) with respect to dose homogeneity in the target volumes.
Methods: Target volumes and normal tissues were delineated on CT-scans of twenty patients (10 left and 10 right) and used to design two treatment plans. 3Dst is a fixed SSD technique that uses direct anterior mixed photon and electron beams, matched to tangential breast photon fields. 3Diso is an isocentric technique, consisting of 4 photon beams [1 median subclavian (MS), 1 internal mammary (IM) and 2 tangential breast fields] with asymmetric collimation. The common isocenter is located in the middle of the posterior beam edge of the breast tangents, in the plane through the upper border of the breast PTV. The MS field has a gantry angle of 10º. The IM field has the same gantry angle as the medial breast field to ensure a perfect match with the tangential fields. The field edge of the IM field was not allowed to be more then 3 cm heterolateral of the midline. Constraints for the lungs and heart were respectively V20 < 25% and V30 < 10%. Dose-Volume metrics were used to assess the target coverage (IM-MS and breast PTV) and normal tissue doses (lungs and heart). Heterogeneity indices were calculated for the IM-MS and breast PTV. Paired t-tests were performed to detect differences between plans.
Results: 3Diso produced significantly higher homogeneity for breast and IM-MS PTV than 3Dst (p = 0.02). The mean heart dose was significantly

lower with 3Diso (p = 0.00), heart V30 was comparable. However, a significant increase in lung mean dose (p = 0.00) and lung V20 (p = 0.00) is found with 3Diso. Planning and treatment time were significantly reduced with 3Diso.
Conclusions: The optimised technique produced significantly more homogeneous coverage of the target volumes at the cost of higher, but acceptable, lung doses. Given these results and in view of the more efficient, easy and reproducible treatment delivery of isocentric techniques, 3Diso is implemented as standard practice.

2042 POSTER

Trasuzumab in multimodality treatment of inflammatory breast carcinoma

V. Semiglazov[1], A. Bozhok[1], A. Manikhas[2], S. Petrovsky[1], I. Kochetova[1], R. Donskih[1], E. Turkevich[1], V. Semiglazov[1], S. Kanaev[1], E. Tkachenko[2].
[1]N.N. Petrov Research Institute of Oncology, Breast Cancer, St-Petersburg, Russian Federation; [2]City Clinical Oncological Dispanser, Breast Cancer, St-Petersburg, Russian Federation

Background: inflammatory breast carcinoma (IBC) is a rare but agressive form of cancer. HER2/neu is overexpressed in 50%-60% of IBC.
Material and Methods: 98 patients (pts) with confirmed HER2-positive IBC were enrolled between February 2002 and January 2007. The treatment plan consisted of chemotherapy (CT) with or without trastuzumab (H) according randomization. 47 pts received CT (doxorubicin 60 mg/m^2 and paclitaxel 175 mg/m^2 concomitant H (8 mg/kg loading dose, then 6 mg/kg) administered 3 weekly for 6 cycles. 51 pts received the same CT without H. Radiotherapy must follow surgery and H was recommended as adjuvant treatment for both groups for 1 year. Primary end point was objective response (ORR), ppathological complete response (pCR) and safety.
Results: 39 pts (82.9%) from CT+H group became resectable and underwent mastectomy; 1 patient refused from treatment. 27 pts (52.9%) from CT group also became resectable. 42 pts (91%) in CT+H group and 27 pts (52.9%) in CT group achieved an objective clinical remission (ORR; p = 0.058). 24 pts (52.1%) in CT+H group and 11 pts (21.5%) in CT group achieved pCR (p = 0.05). There were no significant differences in disease-free survival (DFS) between CT+H and CT groups (median follow up was 2 years). The pathologic response to treatment was shown to be a strong predictor for prognosis. DFS was 83% in pts with pCR vs 65% for other pts (log-rank test x^2=2.14, p = 0.03). The most serious adverse event of CT was febrile neutropenia (5% vs 8% with H).

	ORR	pCR
CT+H, n = 46	42 (91%)	24 (52.1%)
CT, n = 51	27 (52.9%)	11 (21.5%)
p	0.058	0.050

Conclusion: H improved ORR and significantly increased pCR compared with CT alone.

2043 POSTER

The feasibility of fine needle aspiration cytology (FNAC) and core needle biopsy (CNB) in the diagnosis of breast lesions

M. Leidenius[1], K. Hukkinen[2], P. Heikkilä[3], L. Kivisaari[2], K. von Smitten[1].
[1]Helsinki University Central Hospital, Breast Surgery Unit, Helsinki, Finland; [2]Helsinki University Central Hospital, Department of Radiology, Helsinki, Finland; [3]Helsinki University Central Hospital, Department of Pathology, Helsinki, Finland

Background: Our aim was to compare the feasibility of FNAC and CNB in the diagnosis of breast lesions. The special aim was to evaluate the extra costs and delay in surgical treatment due to unsuccessful preoperative biopsies.
Methods: The diagnostic work-up in 632 consecutive patients with 642 dubious, suspicious or malig-nant breast lesions was evaluated. FNAC was the first biopsy method for in 339 lesions (333 patients), CNB or vacuum biopsy (the CNB group) for 303 lesions (298 patients). In addition, one patient with bilateral lesions had FNAC in the one and CNB in the other breast. The postoperative diagnosis was ductal carcinoma in situ (DCIS) or invasive cancer for 550 lesions in 542 patients. Eight patients had bilateral cancer.
The basic costs were 160 € for FNAC, 176 € for ultrasonographically guided CNB, 228 € for stereotactically guided CNB and 760 € for the vacuum biopsy. The cost for the surgical biopsy was 780 € when the biopsy was performed in local anaesthesia and 1220 € when performed in general anaesthesia. The costs included the imaging and the cyto- or histopathological assessment of the specimens.
Results: The sensitivity was 67% (194/289) for FNAC and 94% (245/261) for the CNB group, p < 0.0001. Invasion was revealed in the surgical specimen in 5 lesions with DCIS in CNB. Two lesions with FNAC 5 were benign and one lesion was DCIS. There were no false positives in the in the CNB group.
In order to achieve the definite diagnosis, in patients with FNAC as the initial biopsy method, a subsequent FNAC was obtained in 4 lesions and a subsequent CNB was obtained in 89 lesions. In addition, a surgical biopsy was performed in altogether 68 lesions showing invasive cancer in 16 lesions and DCIS in 5 lesions. In the CNB group, a subsequent CNB was obtained in 2 lesions. A surgical biopsy was performed in 57 lesions showing invasive cancer in 7 lesions and DCIS in 8 lesions.
The total costs of the diagnostic work-up were 279.8 € per patient when the initial biopsy method was US-guided FNAC, 199.5 € when it was US-guided CNB and 234.5 € for the entire CNB group.
The extra needle biopsies delayed the first surgical treatment in 69 of the 283 patients with FNAC and in 1 of the 252 patients in the CNB group. The mean delay in surgery was 9 days in these patients. Six patients with neoadjuvant treatment or co-morbidity postponing surgery were excluded from this analysis. Also the patient with FNAC in the one and CNB in the other breast was excluded.
Conclusion: Although sole FNAC is less expensive than CNB, the frequent need of additional biopsies and extra imaging raised the total expenses of FNAC over those of CNB. In addition to generating extra expenses, multiple biopsies also delayed the surgical cancer treatment in almost every fourth patient with FNAC as the initial biopsy method.

2044 POSTER

Phase II trial with letrozole (2.5 mg) to maximal response as neoadjuvant endocrine therapy in postmenopausal patients with ER/PgR[+] operable breast cancer

A. Llombart Cussac[1], A. Galán[2], C. Fuster[3], E. Buch[2], V. Carañana[4], A. Rodríguez Lescure[5], C. Vázquez[3], A. Guerrero[3], A. Ruiz[3], V. Guillem Porta[3]. *[1]Hospital Arnau de Vilanova, Oncology, Lleida, Spain; [2]Hospital de Sagunto, Oncology, Valencia, Spain; [3]Instituto Valenciano de Oncología, Oncology, Valencia, Spain; [4]Hospital Arnau de Vilanova de Valencia, Oncology, Valencia, Spain; [5]Hospital Universitario de Elche, Oncology, Alicante, Spain*

Background: Randomized trials in postmenopausal patients with ER/PgR[+] operable breast cancer had shown that neoadjuvant therapy with an aromatase inhibitor (AI) is more effective than tamoxifen and equivalent to chemotherapy in terms of objective response rate (ORR) and preserving breast surgery. However, trials were conducted with a predetermined length of 3 to 4 months of therapy, and no study has analyzed as yet the optimal duration of AI as induction therapy. In this study we assessed the safety and efficacy for letrozole (Femara®), in postmenopausal women with ER and/or PgR[+] until maximal response is reached.
Material and Methods: An open, multicentric, phase II clinical trial to evaluate the efficacy and safety of letrozole over a preoperative period of 3 months to 1 year was conducted. Inclusion criteria: Postmenopausal status, histological diagnosis (tru-cut) of infiltrating breast carcinoma, ER and/or PgR[+] (by IHC), tumor stage II to IIIb (T2 > 2 cm, T3, T4b, N0−2, M0) non suitable for conservative surgery. Inflammatory or T4a tumors were excluded. The primary endpoint was to determine the median duration of treatment to optimal response defined as the interval of time required to achieve the maximal response by clinical exam. The ratio of clinical responses and the frequency of conservative surgery were secondary objectives. Data on adverse and severe adverse events was also presented.
Results: Seventy patients have been recruited in four centers from June 2003 to September 2005. Median age: 79.0 years (66−91), Stage T2 N0 (50.0%), ER[+] (92.9%). The median times to objective and to maximal response were 3.9 months (3.3−4.5) and 4.2 months (4.0−4.5) respectively. At the time of maximal response, the ORR was 76.8%; 67.4% obtaining a partial response and 32.6% a complete response. Only, one serious adverse event related with the drug that fulfilled NCI criteria was reported.
Conclusions: Letrozole shows a high activity and tolerability as neoadjuvant endocrine therapy in elderly patients with endocrine dependent criteria breast cancer. Mature results with the optimal duration of this approach will be helpful to increase local disease control.