

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.

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POSTER

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

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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.

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POSTER

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

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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		
30–39	14	0		42	0
40–49	66	8	5	198	11
50–59	159	21	9	477	31
60–69	64	9	4	192	16
70–79	12	3	1	36	3
Total	315*	41 (13%)*	19	945*	61 (7%)*

^aAge 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.

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POSTER

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

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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 10°. 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 than 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