

site after external beam radiotherapy with a dose of 10 Gy in 1 fraction is a safe procedure and has no negative impact on cosmesis. Our 5-years local relapse rate of 4.1% (10-yr.: 10.3%) and survival data are very similar to those reported in literature. Therefore we will continue with the described prospective approach.

PP-3-5 Risk Factors for Local Recurrence After Breast-Conserving Treatment: Results of a Multicentre Case-Control Study

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Introduction: In the Netherlands, a multi-centre case-control study was performed to identify treatment-related and histopathological factors associated with a high risk of local recurrence after breast-conserving therapy (BCT).

Methods: Through follow-up of the patients series of 11 radiotherapy departments, 360 patients with recurrence in the breast were identified. To each case patient two controls without local recurrence were individually matched for axillary nodal status, menopausal status and length of follow-up. Cases as well as controls underwent BCT in the period 1980–91, according to current standards. The excisional biopsy specimens were reviewed by two pathologists. At the time of analysis the specimens of most patients had been reviewed.

Results: The proportion of patients with a macroscopically narrow (< 1 cm) or incomplete excision was higher among the cases (35% vs 25%; $p = 0.05$). At pathological review, the cases showed a higher proportion of tumours with a poorly outlined margin (29% vs 14%; $p = 0.006$), a high malignancy grade (44% vs 29%; $p = 0.002$) and an extensive DCIS component (> 10 ducts involved); (30% vs 20%; $p = 0.01$). Also, cases had a higher proportion of tumours for which the review revealed doubts about the microscopic completeness of the excision (37% vs 20%; $p = 0.001$). No difference was found with respect to the presence of vascular invasion adjacent to the dominant lesion.

Conclusion: Multivariate analyses are ongoing. The first results indicate that pathological factors are associated with local recurrence after BCT.

PP-3-6 Patterns of Diagnosis of 350 Breast Failures in Patients Treated with Conservative Breast Surgery, Axillary Dissection and RT for Breast Cancer

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Introduction: 350 local recurrences after conservative radiosurgical treatment for breast cancer were recorded by 10 French Regional Cancer Centers. The goals of the study were to determine the patterns of diagnosis for breast relapse and to evaluate the follow-up schedule for the treated breast.

Method: First tumor and local relapse characteristics, time before occurrence of local failure and way of diagnosis for local relapse have been analysed.

Results: The first sign of breast relapse was clinical for 260 cases (74.3%), radiological for 82 cases (23.4%), ultrasonographic for 5 cases (1.4%) and pathological for 3 cases (0.9%).

- The study of positive examinations when local relapse was detected (sensitivity) showed: clinical examination: 76%, radiological examination: 66%, ultrasonography: 60%, cytology: 72%, biopsy: 83%.

- Time before occurrence of local failure is significantly correlated with microscopically incomplete excision ($p < 0.05$), multifocality ($p < 0.05$) and SBR grade (SBR) ($p < 0.05$).

- Patterns of diagnosis of breast recurrence is dependent on the DCIS component of the initial lesion ($p < 0.05$) and the initial tumor size, (local relapses of the initial T0 lesions are more frequently detected by mammography ($p < 0.001$)). 13/37 (35%) T0 are DCIS.

- Relation between DCIS component, 1st radiological diagnosis of relapse and microcalcifications.

DCIS = 100%	9 (43%)	9 (100%)
DCIS > 50%	15 (24%)	13 (87%)
DCIS < 50%	22 (22%)	14 (64%)
DCIS = 0	28 (25%)	16 (57%)

Conclusion: The first sign of local failure has been shown to be more frequently clinical (74%).

The time before occurrence of local relapse for tumors with microscopically incomplete excision, multifocal tumors and poor histologic grade tumors is shorter. The follow-up controls should be more frequently for these patients. The breast relapse is more frequently diagnosed by microcalcifications on mammography for DCIS initial tumor. Mammography of treated breast should be more frequent.

PP-3-7 Long Term Time Course of Breast Recurrence after Breast-Conservative Treatment of Small Breast Cancer

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Breast recurrences (BR) after breast conserving treatment can occur very long after treatment.

We analyzed the time course of recurrence (cumulative risk and annual hazards) in a series of 518 patients with small breast cancers (≤ 3 cm) treated with limited excision and irradiation. Median follow-up was 16.5 years (3–35 yrs). 89 BR occurred during follow-up. Median delay of BR was 80 months (14–353 months). Cumulative 15-year risk of BR was 79% \pm 4% [95% CI]. Annual hazard of BR varied over time; it increased during the first 5–6 years, then decreased, and reincreased slowly after 10 years. Same quadrant recurrences were predominant during the first 10 years, with a maximum annual rate of 1.8%/year. Other quadrant recurrences predominantly occurred after 10 years and followed a similar pattern than contralateral breast cancers. -- We conclude that BR are made of two tumor populations: "true" recurrences that occur earlier after treatment (< 10 yrs) and "new primaries" that occur later (> 10 yrs). The incidence of the latter increases as follow-up gets longer.

Implications for prognosis, treatment of recurrence and surveillance will be discussed.

PP-3-8 Prognosis after Salvage Treatment for Local-Regional Recurrence of Mastectomy or Breast Conservation in EORTC Trial 10801

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Introduction: To investigate the efficacy of salvage treatment for local regional recurrences (LRR) after radical mastectomy (RM) or breast conservation (BCT), all 124/901 patients with a LRR in EORTC trial 10801 were analyzed.

Patients and methods: Of these, 69 patients had their LRR as first or only event. The prognostic significance of: randomisation arm (RM vs BCT), pTN classification at primary treatment, EIC⁺, vascular invasion, time to first recurrence (< 2 yr. vs ≥ 2 yr.), and extent of LRR (< 3 cm or single vs ≥ 3 cm, multiple or diffuse) was analyzed for survival and local regional control after salvage treatment using uni-, and multivariate analyses.

Results: For salvage treatment of LRR after RM or BCT, 5 yr. actuarial survival rates are 45% and 53% (curves super imposable) and 5 yr. local regional control rates 46% and 64% (small, non significant trend); indicating no significant difference. In a multivariate analysis, vascular invasion in the primary tumour ($p = 0.02$) was the only significant prognostic factor for survival, whereas extent of LRR ($p = 0.0001$), pN⁺ at primary treatment ($p = 0.02$) and time to recurrence < 2 yr. ($p = 0.04$) were significant prognostic factors for local-regional control.

Conclusion: In this randomised EORTC trial the survival and local regional control after salvage treatment for a LRR after RM or BCT is similar.