487 Patterns and risk of first and subsequent recurrences in women within ten years after primary invasive breast cancer

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Poster Abstracts

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Background: Previous studies suggest a distinct pattern and a number of predictive factors for breast cancer recurrence. However, only few studies include data on recurrence site and no study provides data regarding second and third breast cancer recurrence after local and regional recurrence. The aim of this study was to analyse the occurrence, timing and predictive factors of first and subsequent local (LR), regional (RR) or distant (DM) recurrence during the first 10 years after treatment for primary invasive breast cancer in women.

Methods: Women with stage I-III invasive breast cancer diagnosed in 2003 and treated with curative intent were selected from the Netherlands Cancer Registry (N = 9797). Median follow-up was 10 years. Multivariable cox proportional hazards regression was used to model the hazard of recurrence over time for site-specific first recurrence and for subsequent recurrences after LR or RR. Predictive factors were identified for first and for subsequent recurrences. All tests were two-sided and probability values of <0.05 were considered statistically significant.

Results: In total 379 patients had LR, 156 patients had RR and 1412 patients had DM as first recurrence. The risk of first recurrence was highest around 2 years post-diagnosis (HR 0.040 95% CI 0.036–0.044) with a similar pattern for LR, RR and DM. Multivariable analysis showed that lower age and negative estrogen-receptor (ER) status were predictive factors for first LR. Tumour size >2 cm, grade III and negative ER were predictive factors for first RR and tumour size >2 cm, grade II or III, increasing number of involved lymph nodes and negative progesterone-receptor (PR) status were predictive factors for first DM. After a LR 109/379 patients (28.7%) developed subsequent recurrence: 11 patients had another LR (2.9%), 13 patients had RR (3.4%) and 85 patients (22.4%) had DM. Median time to second recurrence was 1.1 year (IQR 0.3–2.5 year). Tumour size >2 cm, grade III, primary tumour histology (other vs invasive ductal), >3 positive lymph nodes and negative PR-status were predictive factors for a second recurrence after LR. After a first RR 79/156 patients (50.6%) developed subsequent recurrence: 8 patients had LR (5.1%), 3 patients had RR (1.9%) and 68 patients (43.6%) had DM. Median time to second recurrence was 1.1 year (IQR 0.5–2.1 year). In multivariable analysis, no predictive factor for a second recurrence after RR was identified. After previous LR or RR a third subsequent recurrence occurred in 18 patients (9.6%).

Conclusions: The pattern of first recurrence was similar for LR, RR and DM. To improve personalized follow-up, predictive factors could be taken into account. However, this study showed no explicit predictive factor for site specific recurrence and subsequent recurrences after LR and RR. Future studies that take treatment characteristics into account are needed.

No conflicts of interest