Risk factors for loco-regional recurrence after breast conserving surgery: Impact of young age and surgical margin status in breast cancer patients

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Introduction & Aim: Breast cancer is a common malignant tumor and treatment predominantly consists of surgery. Modern society has increased the demands of women to have higher requirements for breast appearance and quality of life. Therefore, exploring effective measures to control or reduce the rate of loco-regional recurrence (LRR) after breast conserving surgery (BCS) is the main focus of this study.

Method: This cohort included 743 consecutive patients with invasive breast cancer, treated with BCS in two centers in Tehran, Iran between 2005 and 2010. The primary endpoint was the rate of loco-regional recurrence in a five year follow-up period. We also investigated the factors that could predict LRR after BCS.

Results: The prevalence of LRR after BCS was 7.6% in a median follow-up of 56.9 months. The median time to local recurrence was 20.45 months. A correlation between follow-up outcome and age; histologic sub-type; surgical margin; number of positive nodes; complete pathologic response to neo-adjuvant chemotherapy; chemotherapy and hormone therapy was recognized. Surgical margin status, hormone therapy, histologic sub-type, age and Ki67 were shown to be significant risk factors for LRR in univariate analysis whereas surgical margin status emerged as an independent risk factor in multivariate analysis.

Conclusion: Increased LRR was observed among those with higher Ki67, aged under 35, not receiving hormone therapy and with a surgical margin less than 2 mm. These factors appeared to be risk factors for LRR after BCS, while, histologic grade, axillary nodal status, tumor size and biologic sub-type did not predict LRR after BCS.