The role of the number of uninvolved lymph nodes in predicting locoregional recurrence in breast cancer


PURPOSE: To identify groups of early breast cancer patients with substantial risk (10-year risk > 20%) for locoregional failure (LRF) who might benefit from postmastectomy radiotherapy (RT). PATIENTS AND METHODS: Prognostic factors for LRF were evaluated among 6,660 patients (2,588 node-negative patients, 4,072 node-positive patients) in International Breast Cancer Study Group Trials I to IX treated with chemotherapy and/or endocrine therapy, and observed for a median of 14 years. In total, 1,251 LRFs were detected. All patients were treated with mastectomy without RT. RESULTS: No group with 10-year LRF risk exceeding 20% was found among patients with node-negative disease. Among patients with node-positive breast cancer, increasing numbers of uninvolved nodes were significantly associated with decreased risk of LRF, even after adjustment for other prognostic factors. The highest quartile of uninvolved nodes was compared with the lowest quartile. Among premenopausal patients, LRF risk was decreased by 35% (P = .0010); among postmenopausal patients, LRF risk was decreased by 46% (P < .0001). The 10-year cumulative incidence of LRF was 20% among patients with one to three involved lymph nodes and fewer than 10 uninvolved nodes. Age younger than 40 years and vessel invasion were also associated significantly with increased risk. Among patients with node-positive disease, overall survival was significantly greater in those with higher numbers of uninvolved nodes examined (P < .0001). CONCLUSION: Patients with one to three involved nodes and a low number of uninvolved nodes, vessel invasion, or young age have an increased risk of LRF and may be candidates for a similar treatment as those with at least four lymph node metastases.