

Benefit of Internal Mammary Lymph Nodes Irradiation in Patients with Breast Cancer

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Abstract

Purpose: To evaluate the contribution of internal mammary nodal radiation to the benefit of postoperative radiotherapy in breast cancer patients. The impact on the overall survival (OS), the locoregional relapse-free survival (LRRFS) and distant metastasis-free survival (DMFS) is the endpoint to evaluate the benefit.

Patients and Methods: Between January 2000 and December 2005, breast cancer patients who were treated by either wide local excision or mastectomy followed by radiation therapy to the intact breast or chest wall and regional nodes were divided into two groups; group A including patients treated without targeting the internal mammary chain (IMC) and group B including those treated with a separate field targeting the IMC. The two groups (100 patients in each) were compared with respect to demographic, staging, pathologic, treatment, and outcome parameters. The relevant data were obtained and retrospectively reviewed from the medical records.

Results: Baseline patient and tumor characteristics were balanced between both groups with the exception of age and T-stage. The mean age of group A patients was 50.28 ± 9.887 years compared with 54.48 ± 11.661 years for group B patients ($P=0.018$) and T3-T4 tumors were more likely to be encountered in group B patients (68%) compared with (38%) in group A patients ($P=0.012$). There were no significant difference between both groups at 5 years with respect to the OS (51.5% for group A vs. 57.1% for group B, $P=0.341$), the LRRFS (48.6% for group A vs. 51.9% for group B, $P=0.268$) and the DMFS (46.9% for group A vs. 44.3% for group B, $P=0.836$). Subgroup analysis showed that the benefit of IMC irradiation was limited to patients with 4 or more positive axillary lymph nodes (N2-N3) as evidenced only by better LRRFS (40.2% for no IMC vs. 57.3% for IMC, $P=0.049$). Furthermore, there was a trend toward a better OS in N2-N3 patients who received a separate IMC field but it did not reach the statistical significance (39.8% for no IMC vs. 57.3% for IMC, $P=0.053$).

Conclusion: Postoperative irradiation of IMC with separate field has no benefit with respect to survival parameters in breast cancer patients. It may be considered for patients with N2-N3 stage for better locoregional control.