Aim: The postmastectomy irradiation therapy (PMRT) was standard treatment for patients with more than four involved axillar lymph nodes. But patient with 1-3 positive axillar lymph nodes is controversial. To identify subgroups of patients with 1-3 positive axillar lymph nodes at significant risk of locoregional recurrence (LRR) who might furthermore benefit from the addition of PMRT.

Methods: We retrospectively analyzed the outcomes of 181 patients who had 1-3 positive nodes and treated with mastectomy without adjuvant irradiation between 2003 and 2008 in our hospital. Median follow-up time was 83.2 months. 156 (86.2%) patients received adjuvant chemotherapy (anthracycline alone: 29, anthracycline followed by taxane: 95, taxane alone: 10, CMF: 22 ). 76.9% (30/39) of the patients with HER2 positive cancer received trastuzumab and 92.3% (144/156) of the patients with hormone receptor positive cancer received hormone therapy. The median number of lymph nodes removed was 20. The rate of LRR and cause-specific survival were calculated by the Kaplan-Meier method, with comparisons among groups performed using log-rank tests.

Results: 13 patients developed LRR as first events (local: 9, regional: 4). The 5-years and 10-years rates of LRR were 7.3 % and 8.6%, respectively. And the 5-years and 10-years rates of cause-specific survival were 95.1% and 91.7%, respectively. Furthermore, we analyzed the rates of LRR regard to subtype of tumor (ER+ group : ER + and HER2-, HER2+ group: HER2+ and ER any, TN group: ER-and HER2- ). The 5-year rates of LRR were 5.1%, 7.5%, and 24.5 % for patients with ER+ group, HER2+ group, TN group, respectively ( ER+ group vs TN group: p = 0.008, ER+ group vs HER2 group: p = 0.574 ). The 10-years rates of LRR were nearly identical among ER+ group and HER2+ group (7.0% vs 7.5%). The 5-years and 10-years rates of LRR were less than 10% for patients with any pathological tumor size.

Conclusions: Patients who had 1-3 positive axillar lymph node and TN subtype tumor experience the 5-year rate of LRR in excess of 20% and should be offered PMRT.

Disclosure: H. Iwata: Honoraria (Chugai Pharma, Hiroji Iwata). All other authors have declared no conflicts of interest.