OUTCOMES OF PATIENTS WITH ULTRASOUND DETECTED LYMPH NODE METASTASIS: ARE WE OVER-TREATING THE AXILLA?

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BACKGROUND

Traditionally breast cancer patients with lymph node metastasis undergo axillary lymph node clearance (ALNC) to prevent further spread. However, evidence suggests that ALNC can be safely omitted in patients with a low nodal burden (metastasis in ≤2 nodes).1 Updated ABS guidelines reflect this and use prognostic markers to allow omission of further axillary surgery after sentinel lymph node biopsy.2 But ALNC is still recommended in patients with pre-operatively detected lymph node metastasis despite the fact that some will have a low nodal burden. Therefore, current practice results in over-treatment of the axilla.

The aim of the study was to explore the total lymph node burden in patients preoperatively diagnosed with nodal metastasis and determine if any good prognostic factors can reliably identify those with low nodal burden.

METHOD

Study population
Patients newly diagnosed with invasive breast cancer at University Hospitals of Coventry and Warwickshire (UHCW) in the period 2012-2014 with preoperatively detected lymph node metastasis followed by ALNC.

Data collection
Patient data was extracted from electronic hospital records, anonymised and compiled into an Excel spreadsheet. Extracted data included: Patient demographics, tumour characteristics, preoperative ultrasound (US) and biopsy results, post-surgery histology and ALNC results.

Inclusion criteria
Lymph nodes were determined to be abnormal on US if they showed one or more of the features defined by UHCW assessment criteria:
1. Cortical thickness >3mm or
2. Focal eccentric cortical thickness or
3. Lobulated cortex.
Abnormal lymph nodes underwent US-guided FNA or core biopsy.

Patients were grouped into 1-2 or 3 or more (3+) based on their lymph node burden after ALNC. Prognostic factors used for comparison across the two groups included: post-menopausal (Age ≥47 used as a surrogate), treated with breast conservative surgery, T1 disease (tumour size ≤2cm), grade 1 or 2 disease, oestrogen receptor positive (ER+) and human epidermal growth factor receptor negative (HER2-).

Statistical analysis
Data was analysed using IBM SPSS statistics software version 23. Significance levels of all tests were set at p<0.05 (95%). Categorical variables were evaluated with Chi-squared tests (or Fisher’s exact tests if expected values <5).

RESULTS

629 patients were newly diagnosed with invasive cancer at UHCW during 2012-2014 and 210 of these had lymph node metastasis.

64 patients were found preoperatively and progressed to ALNC. 20 of these patients (31.3%) had macrometastasis in only 1-2 nodes.

- In the 1-2 node group, 13 patients (65%) underwent breast conserving surgery compared to 11/44 patients (25%) in the 3+ node group. Chi-squared tests showed this difference to be significant with p=0.002.
- The 3+ node group also had a higher proportion of T3 cancers with 10 patients (22.7%) compared to 0 patients (0%) in the 1-2 node group. Again this was significant with chi-squared tests yielding p=0.024.
- The 3+ node group also had higher proportions of other poor prognostic factors such as; lymphovascular invasion (25% vs. 15%), lobular cancers (18% vs. 10%) and grade 3 disease (30.1% vs. 20%), albeit not significant on Chi-squared/Fisher’s exact tests.
- ER positivity and postmenopausal age were similar between the two groups.

DISCUSSION

Between 2012-2014, 30.5% of patients with lymph node metastasis were detected by pre-operative US and biopsy. Following current NICE guidance, 31.3% of these patients would receive ALNC, despite having a low axillary nodal burden. We attempted to identify features which would separate low from high nodal burden. Breast conserving surgery was shown to be a significant good prognostic factor and T3 cancers a significant bad prognostic factor. Higher rates of lymphovascular invasion, lobular cancers and grade 3 disease were seen in the 3+ node group but the difference was not significant. ER positivity and postmenopausal age showed no difference between groups.

CONCLUSION

Axilla management of patients with pre-operatively diagnosed lymph node metastasis currently leads to overtreatment in 31.3%. There is scope to identify patients with a low nodal burden to select them for axillary staging and possibly avoid ALNC. In particular, patients having breast conserving surgery or T1/T2 disease are more likely to have lymph node metastasis limited to 1-2 nodes.

REFERENCES