Axillary node interventions in breast cancer: a systematic review

Rao R, Euhus D, Mayo HG, Balch C

CRD summary
Available evidence suggested that axillary node dissection was associated with more harm than benefit in women who underwent breast conserving therapy, did not have palpable suspicious lymph nodes, had tumours 3cm or smaller and who had three or fewer positive nodes on sentinel node biopsy. Limitations in the methods of this review render the conclusions uncertain.

Authors' objectives
To assess the role of axillary interventions (surgical and non-surgical) in breast cancer treatment with reference to recurrence of axillary node metastases, mortality and morbidity.

Searching
MEDLINE (1946 to July 2013), Cochrane Database of Systematic Reviews (2005 to July 2013), DARE (1994 to July 2013) and Cochrane Central Register of Controlled Trials (CENTRAL) (1989 to July 2013) were searched for publications in English. Search terms were reported.

Study selection
Randomised controlled trials (RCTs) and non-randomised trials that reported on oncological outcomes after axillary surgery or radiation for breast cancer were eligible for the review. RCTs needed to have at least two years of follow-up of patients with breast cancer. Non-randomised trials needed to have at least two years follow-up in at least 50% of the patients who underwent treatment for breast cancer that included surgery or radiation of the axillary nodes. Outcomes of interest were isolated recurrence of axillary lymph node metastases, complication rates and survival.

Most of the studies were conducted in patients with no palpable suspicious nodes. Average age of participants (where reported) ranged from 50 to 76 years. Various treatments were used including mastectomy, breast conserving therapy, axillary lymph node dissection, radiation and tamoxifen.

Two reviewers were involved in the selection of studies for the review.

Assessment of study quality
The authors did not state that they assessed quality.

Data extraction
It appeared that two reviewers extracted data for the review.

Methods of synthesis
Results were presented in a narrative summary.

Results of the review
Seventeen studies (at least 12,000 patients) were included. Follow-up varied between one and 50 years. Results of individual studies were presented. In summary the authors noted that there was little evidence of benefit from surgical complete axillary node dissection compared with sentinel node biopsy alone. Complete axillary node dissection in patients with no palpable lymph nodes compared with sentinel node biopsy gave no survival benefit and was associated with a 1% to 3% reduction in recurrence of axillary node metastases but an increased risk of lymphoedema (14% compared to 5% to 7% for biopsy).

Authors' conclusions
Available evidence suggested that axillary node dissection was associated with more harm than benefit in women who underwent breast conserving therapy who did not have palpable suspicious lymph nodes, who had tumours 3cm or smaller and who had three or fewer positive nodes on sentinel node biopsy.
CRD commentary
This review was based on defined inclusion criteria and a search of several relevant databases. Searching was based on published data only and only studies in English were eligible, so some studies may have been missed. More than one reviewer was involved in study selection and data extraction, which helped to minimise bias and error. Studies were not quality assessed and the review included some non-randomised studies (more open to bias than RCTs). The authors chose not to perform a meta-analysis but a meta-analysis could probably have been conducted along with subgroup analyses for the different interventions.

The lack of quality assessment and of statistical pooling renders the conclusions uncertain.

Implications of the review for practice and research
Practice: The authors stated that patients and physicians should tailor axillary lymph node interventions to maximise regional disease control and minimise morbidity and made several specific recommendations in this area. In the future multimodal treatment will be dependent on primary tumour features including molecular markers.

Research: The authors did not state any implications for research.

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This is a critical abstract of a systematic review that meets the criteria for inclusion on DARE. Each critical abstract contains a brief summary of the review methods, results and conclusions followed by a detailed critical assessment on the reliability of the review and the conclusions drawn.