Quality of life after breast conservation or mastectomy: a systematic review

Irwig L, Bennetts A

Authors' objectives
To assess the effect of mastectomy and breast conservation on quality of life and psychosocial outcomes.

Searching
MEDLINE was searched between 1985 and May 1996 using the subject heading 'quality of life', or any word in the title, abstract, MeSH or subheading starting with 'psycho...' or containing the word 'social' and 'breast neoplasms', and any word commencing with 'random...'. For the years 1974 to 1984, abstracts of all trials indexed under the MeSH terms 'breast neoplasm' and 'random allocation' were inspected to see if they covered quality of life measures. In addition, experts were consulted, the reference lists in reviews and those articles retrieved were searched, and some of the authors of identified studies were approached.

Study selection
Study designs of evaluations included in the review
Randomised controlled trials (RCTs) that compared breast conservation with mastectomy, with quality of life or psychological effects as an outcome.

Specific interventions included in the review
Breast conservation and mastectomy. Four studies gave additional chemotherapy to patients with stage 2 breast cancer.

Participants included in the review
Women with a mean age of 50 years, and generally no older than 70 years, that had stage 1 or 2 breast cancer were included.

Outcomes assessed in the review
Quality of life (i.e. psychological, sexual, physical, fear of recurrence or death, body image, and global quality of life) was assessed.

How were decisions on the relevance of primary studies made?
The authors do not state how the papers were selected for the review, or how many of the authors performed the selection.

Assessment of study quality
Validity was assessed on the basis of the following: concealment of allocation; similarity of quality of life measures and other potential confounders at baseline; losses after randomisation; valid outcome assessment; and whether outcome was assessed blind. The two authors independently assessed each trial and any differences were resolved by discussion.

Data extraction
The two authors independently extracted the data and any differences were resolved by discussion.

Methods of synthesis
How were the studies combined?
Quantitative pooling of the results was not possible due to the disparate measures used in the trials, therefore the direction and significance of the effects in each trial was indicated. The binomial distribution was used to determine the probability that the number of studies favouring breast conservation (or a larger number) could have arisen by chance. A similar quantitative procedure was used to assess the probability for the number of studies in which breast...
conservation was shown to be statistically significantly better, using a P-value of 0.05.

How were differences between studies investigated?
Differences between the studies were investigated narratively.

**Results of the review**
Six trials (682 participants) published between 1985 and 1994 met the inclusion criteria. The trials were performed in the United States, the United Kingdom and the Netherlands.

Women who had breast conservation had a more favourable body image of themselves than those who had mastectomy, in all five studies in which it was examined (P=0.03). The evidence was statistically inconclusive for all other dimensions measured, namely perceptions of psychological health (P=0.7), sexual health (P=0.2), physical health (P=0.5), fear of the future (P=0.3), and global quality of life (only a single study was available; this study favoured breast conservation).

Radiotherapy may be a determinant of poorer psychological health and body image.

The effect of chemotherapy on quality of life does not appear to have been examined in the studies.

**Authors' conclusions**
Apart from body image, it is unclear whether breast conservation or mastectomy results in better psychosocial outcomes. Moreover, the studies were conducted before evidence was available to inform women about the equivalence of survival with these alternative treatments. Therefore, there is inadequate information available to help many women decide about their choice of treatment in the future. Preference trials should be conducted, using standardised quality of life measures, in which women whom are uncertain about which treatment to choose are randomised to breast conservation or mastectomy.

**CRD commentary**
This was a well-described systematic review with clearly stated methods. The decision not to formally pool the data appears to have been correct, considering the heterogeneous nature of the outcomes and the overall poor quality of the studies. The restriction of the electronic search to a single database could be criticised, since it is likely that some of the published literature would not be represented in this database. This is particularly important to the National Health Service, since the database MEDLINE is known to have a USA bias and relevant UK or European data may have been overlooked.

Considering the poor quality and small sample size of the included studies, it is difficult to draw conclusive statements on the relative effectiveness of the interventions under consideration.

**Implications of the review for practice and research**
Preference trials should be conducted using standardised quality of life measures, in which women who are uncertain about which treatment to choose are randomised to breast conservation or mastectomy.

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**Bibliographic details**
Record Status
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.