Surveillance mammography after treatment for primary breast cancer

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Authors' objectives
The authors aimed to evaluate the practice of routine surveillance mammography and its effect on disease outcomes following treatment for breast cancer.

Searching
MEDLINE, HealthSTAR, Cancerlit, EMBASE, Pascal, the Cochrane Library and PDQ were searched for studies published between January 1994 and August 1999. A full list of search terms was provided in the report. The authors handsearched selected journals, documents in the CCOHTA library, lists of projects from the International Network of Agencies for Health Technology Assessment, and bibliographies of selected papers. There were no language restrictions.

Study selection
Study designs of evaluations included in the review
There were no restrictions on study design. To be eligible, the studies had to include at least 100 participants.

Specific interventions included in the review
Studies were eligible for inclusion in the review if they examined the practice of routine surveillance mammography and its impact on disease outcomes; addressed other surveillance strategies for breast tumour recurrence; or described follow-up methods after breast cancer treatment.

Reference standard test against which the new test was compared
The authors did not specify any inclusion criteria for the reference standard. The studies included in the review used long-term follow-up to assess disease recurrence.

Participants included in the review
Studies were eligible for inclusion if they included women who had undergone breast conserving therapy for breast cancer (local excision and radiotherapy). The mean age at diagnosis ranged from 41 to 59 years. Women with a primary diagnosis of ductal carcinoma in situ were excluded.

Outcomes assessed in the review
The authors did not specify any outcomes that the studies had to assess in order to be eligible for the review. The main outcomes assessed were cancer recurrence and detection rate using routine mammography.

How were decisions on the relevance of primary studies made?
The authors retrieved and assessed all studies on relevant topics, with input from other experts.

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

Data extraction
Two authors extracted the data using a checklist. Data were extracted on the study type, study period, number of participants, age at primary diagnosis, primary diagnosis, recurrence rate, time to recurrence, mammography protocol, rate of detection by mammography, and rate of detection by other methods.

Methods of synthesis
How were the studies combined?
A narrative synthesis of the findings was presented.

How were differences between studies investigated?
The authors described possible sources of heterogeneity such as geographic location, participant characteristics, disease characteristics, intervention protocol and methodological quality. The authors did not state a formal method for assessing differences between the studies.

Results of the review
Nine retrospective studies were included in the review. The authors did not specify the total number of participants, but more than 7,642 women were involved.

The time to breast cancer recurrence ranged from 2.2 to 5.9 years. Routine mammography was not associated with a reduction in time to detection. The detection rate of routine mammography ranged from 15 to 80%. There was no evidence that overall survival increased due to the earlier detection of locally recurrent disease. There were limited data on contralateral breast cancer.

Authors' conclusions
The authors concluded that although annual surveillance mammography is recommended by professional groups, there is limited evidence that it improves overall survival. The practice of routine mammography varied between centres.

CRD commentary
The research question was clearly defined. The literature search was appropriate and included attempts to locate unpublished studies. A number of databases were searched, including those comprising grey literature. All study designs and languages were eligible. However, the procedures used to select the studies, assess validity and extract the data were not described in full. Therefore, it is not possible to judge the quality of the studies included in the review, or the quality of the review process.

Heterogeneity was not formally assessed and the authors did not assess potential publication or language biases. The authors also did not pool the results or weight the findings. The narrative synthesis involved only a basic listing of the main findings. The authors acknowledged that the quality of the studies was limited and that further research into survival and other patient outcomes is needed. Thus, it is not possible to assess whether the authors' conclusions are reliable.

Implications of the review for practice and research
Practice: The authors suggested that mammography and physical examination are complementary techniques for detecting recurring disease.

Research: The authors' conclusions were based on retrospective analyses. They suggested that data on contralateral breast cancer are particularly limited. There is a need for high-quality evidence about the effect of routine surveillance mammography. New methods of mammographic surveillance, such as digital mammography and scintimammography, could also be evaluated.

Reviewer's comment: As routine breast screening may have both positive and negative psychological impacts and other social and personal costs, it may also be worthwhile to undertake cost-benefit analyses.

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