Screening and self examination for breast cancer

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Authors' objectives
To summarise for a primary care audience evidence about the effectiveness of breast screening by mammography and breast self examination.

Searching
Not stated. This is more a review of reviews: see CRD Comments field.

Study selection
Study designs of evaluations included in the review
Randomised controlled trials (RCTs) (for mortality data), surveys of practitioners' attitudes, assessments of women's beliefs.

Specific interventions included in the review
Mammography, breast self-examination.

Reference standard test against which the new test was compared
The review did not include any diagnostic accuracy studies that compared the performance of the index test with a reference standard of diagnosis.

Participants included in the review
Women in age groups 50 to 74 and 40 to 49.

Outcomes assessed in the review
Detection rates, stage at diagnosis, 5 year survival rates, mortality

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. Results from "the controversial" Canadian randomised study, which showed an excess mortality among women aged 40-49 years who were offered screening, were excluded without adequate explanation.

Assessment of study quality
The authors do not report the method used to assess validity, or how the validity assessment was performed.

Data extraction
The authors do not state how the data were extracted for the review, or how many of the authors performed the data extraction.

Methods of synthesis
How were the studies combined?
Meta-analysis (method not stated here, but in original reviews).

How were differences between studies investigated?
Not done. One Canadian RCT of women under 50 with discrepant results was excluded, apparently because of its controversial status.
Results of the review
Six RCTs comparing mortality in women aged 50-74 (and with sub-group analyses for women aged 40-49) invited for screening with controls.

In women aged 50-74, breast cancer mortality is reduced by 28% among those screened (95% CI not stated, but shown diagrammatically). In women aged 40-49, there was no significant reduction in mortality (95% CI for relative risk includes 1). Benefits of screening include improved prognosis and less radical treatment for cases detected early, reassurance after negative results. Disadvantages include discomfort of mammography, possible radiation hazard, possible anxiety, morbidity and unnecessary intervention after false positive results, possible overdiagnosis, longer morbidity for those whose prognosis is unaltered by detection of breast screening. Early results from a randomised trial of breast self examination suggest no difference in cancer detection rate or characteristics of tumours detected between intervention and control groups, but a significantly higher frequency of visits to specialists, referrals and excision biopsies of benign lesions in the breast self examination group.

Authors' conclusions
Regular screening by mammography is effective in women over 50, but a similar effectiveness has not yet been shown for women under 50. There is at present no compelling evidence that breast self examination is effective in reducing morbidity and mortality from breast cancer, and no evidence that it should be conducted routinely following a set technique. There is concern about the anxiety it can provoke, and about the fact that most breast lumps identified are benign and many cancers are missed. 2 RCTs are in progress.

CRD commentary
This review does not explicitly satisfy our methodological criteria: it gives no indication of how primary studies were located, assessed, selected and combined. However, from our own knowledge of this area, the paper has identified the major trials. It presents the findings of other reviews very clearly for a practitioner audience, and discusses the risks and benefits (including morbidity and psychological morbidity), and practical issues associated with breast screening and self examination, in an easily accessible form. The assessment of the effectiveness of screening women under 50 is biased by the exclusion of the Canadian RCT which explicitly addressed this issue. Thus mammographic screening for women under 50 is probably not advisable.

Implications of the review for practice and research
Regular screening by mammography should be offered to women over 50. Primary care practitioners should promote uptake of mammographic screening among women over 50. Breast self examination should not be regarded as an effective primary screening technique.

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