Reviewer’s report

Title: Prognosis of screen-detected breast cancers: results of a population based study

Version: 2 Date: 5 September 2005

Reviewer: Matti M.K. Hakama

Reviewer’s report:

General

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Major Compulsory Revisions (that the author must respond to before a decision on publication can be reached)

This is a fluently written study on screen detected and other cases of breast cancer in Modena area. The conclusion on effectiveness is based on intermediate indicators and survival analysis. It is true that a screening programme that results in a mortality reduction would give similar results as those in this study. Unfortunately, also an ineffective programme to reduce mortality may have results as given in this study. Therefore, the conclusion is far reaching and, strictly, the observations as such do not justify the effectiveness-conclusion.

The major problem is that the intermediate indicators should be estimated for the total target population and compared to a population not offered screening. Even this comparison is subjected to overdiagnosis bias and only mortality comparison may yield unbiasedness as to the conclusion.

The authors have discussed these problems of biases.
- Intermediate indicators estimated from the screen detected cases only give biassed values, as e.g lead time and length bias affect them. It is no remedy to replace survival by event free survival, as proposed in the paper.
- Median age before screening and of screen detected and clinically detected is a crude and, therefore, an insufficient proof of no or small lead time. Length-bias: Loss by screening was not small (5.6%) but rather more than 30%, further, considering participation only is insufficient as there are interval cancers that affect the estimate of length-bias.

This paper is of value for the programme and those running it as it describes some of the programme, but to be of interest for a wider audience it would assume a design that covers the total target population and compares the results with an unscreened control population. A less ambitious objective would be to focus on the sensitivity of the programme to identify cancers in the target population, and make only after that questions of predicting of effectiveness. An indication of sensitivity can be found by observing the proportion of screen detected cancers in all cancers diagnosed in the target population. This estimate is subjected to overdiagnosis, which issue can be covered in discussion.

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Minor Essential Revisions (such as missing labels on figures, or the wrong use of a term, which the author can be trusted to correct)

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Discretionary Revisions (which the author can choose to ignore)
What next?: Unable to decide on acceptance or rejection until the authors have responded to the major compulsory revisions

Level of interest: An article of limited interest

Quality of written English: Acceptable

Statistical review: No

Declaration of competing interests:

I declare that I have no competing interests