Reviewer's report

Title: Breast Density in Birth cohorts of Danish Women: A Longitudinal Study

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Reviewer: Andre LM Verbeek

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Review by ALM Verbeek on:

'Breast Density in Birth cohorts of Danish Women: A Longitudinal Study'
Sophie S Hellmann, Elsebeth Lynge, Walter Schwartz, Ilse Vejborg and Sisse H Njor

When assessing the work, please consider the following points:

1. Is the question posed by the authors well defined?

The research question to be addressed are the trends in breast density as observed on screening mammograms in birth cohorts as causal approximation for the 'historical increase in breast cancer incidence.' The authors are taking hormone use into consideration.

The research is original in the sense that there are no previous longitudinal studies on mammographic density across different birth cohorts available.

2. Are the methods appropriate and well described?

Authors did not use a reproducible measure for breast density, rather a crude type of measure for this type of study. Very high percentages of dense patterns were observed, but based on the way it appears to be associated with the BI-RADS density classification, findings seem to be valid.

3. Are the data sound?

The data are collected from population-based large scale screening programmes, and mammographic density scored according to BI-RADS methodology.

4. Does the manuscript adhere to the relevant standards for reporting and data deposition?

Yes, adequately done.

5. Are the discussion and conclusions well balanced and adequately supported by the data?
Although references to other well-known studies are taken into account, some information/interpretation on the background and relevance of the findings are missing to fully appreciate the differences across birth cohorts potentially caused by on early-life exposures. The focus now is on the changes with age within birth cohorts.

6. Are limitations of the work clearly stated?

One of the main strengths of this study is that authors were able to look into birth cohorts. The fact that density was assessed by the same radiologists could be seen as a strength as well. The non-reproducible measure for density and the (somewhat) short period of follow-up (10 year) can be considered as weaknesses. Strictly spoken, the study design is not longitudinal (cross-sectional, not individual data).

7. Do the authors clearly acknowledge any work upon which they are building, both published and unpublished?

Yes.

8. Do the title and abstract accurately convey what has been found?

Title and abstract are covering the work done.

9. Is the writing acceptable?

Quality in general is quite good. Some small revisions are needed (also in the references). Table 2 and 3 are perhaps not that easily comprehensible (mainly the birth cohorts).

Nevertheless, a nicely conducted and written study, that published may prompt the reading audience to replicate the findings based on larger observation periods and individual data.