Reviewer's report

Title: A study of 0.5 Tesla dedicated magnetic resonance imaging for the detection of breast cancer in young, high risk women

Version: 2 Date: 13 April 2006

Reviewer: Bruce Kimler

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)

I am sorry to keep harping on the issue of enrollment based on quantitative risk assessment, but if the authors insist on characterizing this as the first study to use this approach, then they have to present it properly. They have made it somewhat palatable by their qualifying phrase that theirs is the first to use a combination of Gail and BRCAPRO models. But there is still a problem of how that was actually done. My understanding of the BRCAPRO model (which I do not use and so my understanding is likely to be similar to that of a general reader) is that what it calculates is the risk (probability) of an individual being a carrier for a germline mutation of BRCA1 or BRCA2. It does not calculate a probability for developing breast cancer, especially not within 5 years. I am told that one can run a Gail module from within the program, but that the Gail risk is not altered by the probability of having a mutation. The authors allude to "absolute breast cancer risks were calculated using age-specific penetrance liabilities", but I am not sure how that would be done or whether it is legitimate to apply to a defined interval, i.e., the next five years for an individual starting at a specific age. So, what is it that was used for 23 women to make them eligible for this study? What did they have was greater than or equal to 3.5%? Secondly, there is still the phrase (last line of page 7) that eligibility could be satisfied by a participant having a known mutation of BRCA1 or BRCA2. While a woman with a known mutation would certainly be characterized as "high risk", there is no "quantitative risk assessment" aspect to this. Unless, perhaps what happened is that for women who were already identified with a mutation, neither model was run because Gail would not be accurate and BRCAPRO was unnecessary, and instead the authors went straight to calculations based on penetrance. But this is not what is stated. Again, if the authors wish to make the claim, then readers should be provided with all the details necessary for them to understand what was done, and in fact for them to replicate it in their own practice setting. Otherwise readers will only be confused about what was done and, more importantly, what they should do.

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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)

Figure 2B: Sorry, I meant that I would like to see an arrow to the visible lesion in the right breast in the pre-contrast MRI view. This would be in parallel to the arrow identifying the lesion in the post-contrast views. The presentation of the MRI findings is potentially confusing to readers since the authors never mention that it is the "second" lesion identified only on post-contrast studies that is found to be malignant. In the text (page 11), they describe a subject diagnosed with Stage I invasive ductal carcinoma, but don't provide details of which lesion or how it was visualized. In the figure legend, they provide no pathological diagnosis for this second lesion other than to state that the kinetic pattern is typical of malignancy. How about a direct statement that this second lesion was also biopsied and demonstrated ...
Discretionary Revisions (which the author can choose to ignore)

What next?: Accept after minor essential revisions

Level of interest: An article whose findings are important to those with closely related research interests

Quality of written English: Acceptable

Statistical review: No

Declaration of competing interests:

I declare that I have no competing interests.