Reviewer’s report

Title: The role of BRCA1 and BRCA2 mutations in prostate, pancreatic and stomach cancers.

Version: 4 Date: 17 June 2015

Reviewer: Elizabeth Bancroft

Reviewer’s report:

The revisions that have been made have improved this manuscript and I hope the authors find the following comments helpful in finalising this for publication.

Compulsory Revisions

(1) The aim of the review

The last sentence of introduction states that:

“This report reviews the most relevant available literature on the association of BRCA1/2 genes with cancers other than breast and ovarian. The principle aim being to evaluate and critically discuss whether there is an association between mutations in BRCA1/2 genes and cancers other than breast and ovarian.”

As suggested previously I do not think this accurately describes what you are reporting. I recommend changing this to:

“This report reviews the most relevant available literature on the association of BRCA1/2 genes with prostate, pancreatic and stomach cancers”

I also suggest changing the abstract wording to reflect this:

“This review examines the association of BRCA1/2 germline gene mutations with cancers other than breast and ovarian and incorporates critical analysis on the correlation of prostate, pancreatic and stomach cancers with BRCA1/2 gene mutations”

It might be clearer to re-phrase to state:

“This review examines the association of BRCA1/2 germline gene mutations with prostate, pancreatic and stomach cancers”

(2) The prostate cancer section provides conclusions about BRCA2, it would be helpful to provide a summary of your findings about BRCA1.

(3) As above it would be helpful to have a summary sentence for both BRCA1 and BRCA2 concluding what the review has found for both pancreatic cancer and stomach cancer.

(4) Conclusion:

This section would benefit from teasing out what you have found for BRCA1 vs
what you have found for BRCA2. For both prostate and pancreatic cancer your review highlights that there is good evidence for a link with BRCA2 but that there is conflicting evidence around their link with BRCA1. This also seems to be the conclusion about stomach cancer. You have added a sentence at the end, but this should be stated at the start and then the rest of the conclusion amended to reflect this.

Conclusion: paragraph 2 - I do not follow this paragraph. Are you talking about aggregation of all types of cancer in mutation positive families? Or are you referring to the aggregation of the cancers reviewed?

Discretionary revisions

(1) It would be helpful to include the fact that only articles freely available as full-text in the limitations of the review.

(2) Prostate cancer, paragraph 3: “Another study showed that two of 290 participants possessed germline protein-truncating BRCA2 mutations..” suggest rewording as follows:
“Another study showed that two of 290 participants with prostate cancer possessed germline protein-truncating BRCA2 mutations.”

(3) BRCA1/2 mutations and Prostate Cancer Survival Rate:
Last two sentences: two groups are described, these need to be defined as it is not clear to the reader what this refers to.

(4) BRCA1/2 mutations in pancreatic cancer, last para: first sentence could be removed as this study is a series of Hereditary pancreatic cancer cases with no BRCA1/2 mutations and therefore not as relevant to this review.

(5) Impact of BRCA1/2 mutations in other associated cancers: I would remove references [24,33] from this section as you are talking about your overall findings, not just findings from these two papers.

(6) Implications for male BRCA1/2 mutation carriers: paragraph 1. You could add a sentence to this section to state that the findings of your review highlight that there are cancer risks for men and therefore BRCA1/2 mutation screening has relevance for men in their own right, rather than just to inform risk for relatives. This would link this section to the rest of the review.

Level of interest: An article of limited interest

Quality of written English: Acceptable

Statistical review: No, the manuscript does not need to be seen by a statistician.

Declaration of competing interests:
I declare that I have no competing interests.