Reviewer's report

Title: Exposure to General Anesthesia and Risk of Alzheimer's Disease: A Systematic Review and Meta-Analysis

Version: 1 Date: 30 July 2011

Reviewer: Craig Ritchie

Reviewer's report:

Re: 'Exposure to General Anesthesia and Risk of Alzheimer's Disease: A Systematic Review and Meta-Analysis'
Dallas P. Seitz, Prakesh S. Shah, Nathan Herrmann, Joseph Beyene and Naveed Siddiqui BMC Geriatrics Research article

Reviewer's report.

1. Is the question posed by the authors well defined? - YES
2. Are the methods appropriate and well described? - YES
3. Are the data sound? -YES
4. Does the manuscript adhere to the relevant standards for reporting and data deposition? -YES
5. Are the discussion and conclusions well balanced and adequately supported by the data? - YES
6. Are limitations of the work clearly stated? -YES
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 Do the authors clearly acknowledge any work upon which they are building, both published and unpublished?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? -YES
9. Is the writing acceptable? - Partially

I suggest:

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

Detailed comments:

This is an important and novel piece of research. There remains a perception despite evidence to the contrary that GA is associated with cognitive decline and or disease. This well presented and methodologically sound meta-analysis is an important counterpoint to that perception.

In general the manuscript is well written – I have only minor comments:
1. In the background, I would like to see a sentence or two summarising the meta-analysis / systematic reviews with regards to these papers conclusions of POD and POC (References 13-17).

2. In the abstract results section – I would add that no cohort studies were identified as I was surprised at the emphasis on case-control studies and wondered if this was a methodological flaw that only case-control studies had been sought. This addition would put that concern to bed straight away.

3. There could also have been greater clarity in the methods section about the acceptance of control groups that were either no surgery or surgery but no GA. This wasn’t always clear and I have concluded this from the results section.

4. There were several typos and other grammatical errors in the manuscript – especially in the background and discussion – I suggest that the authors proof read again before copy editing.

**Level of interest:** An article of importance in its field

**Quality of written English:** Needs some language corrections before being published

**Statistical review:** Yes, and I have assessed the statistics in my report.

**Declaration of competing interests:**

I declare that I have no competing interests