Reviewer's report

Title: General vs. neuraxial anaesthesia in hip fracture patients: A systematic review and metaanalysis

Version: 0 Date: 21 Feb 2017

Reviewer: Iain Moppett

Reviewer's report:

The authors have conducted a systematic review and metaanalysis of the association between mode of anaesthesia and outcome following hip fracture.

Broadly, they found that it doesn't make any difference.

The authors provide a sensible justification for the study - it assesses contemporary rather than historical practice.

The authors are also very clear about the problems with retrospective cohort studies with confounding by indication.

Clearly the meta-analysis is limited by the quality of the data that exist; it is for readers to judge whether these data are good enough. At present, they are all that we have, so I think the authors are right to synthesise them.

There are a few technical issues with the methods and analysis which I think the authors need to address.

I have repeated the search in Pubmed and retrieved 465 articles. Can the authors explain this discrepancy?

Most systematic reviews now include some element of forward searching (citations), 1 or 2 level reference list searching, and formal searching of trial registries. I'd be surprised if other studies were found, but I would suggest this should be done for completeness.
There is a study missing - White et al 2016. (I say this as one of the authors - and I have attached it to this review). This does raise doubts about the effectiveness of the search / retrieval strategy (it is found by the PubMed search). The results of this study are almost identical to the findings of the authors, so it's inclusion is probably not going to change the conclusions.

Inevitably I have checked the data for one of my studies and these are not correct. White 2014 (p 226) - The MS (figure 2) has n/N of 1345/23665 for spinal - this should either be 1713/23665 (all spinal) or 135 / 18955 (spinal only (not with block)); similarly the data for GA are wrong - given as 1066 / 35373: should be either 1066/15666 (GA only) or 2112/31092 (all GA) or 2393/35372 (GA + (GA+SA)). I haven't checked any others bar Neuman (which is correct).

I am unclear as to how GA+RA was managed in the analyses. I don't think there is a 'right' answer. It would seem prudent to repeat the analyses with and without this group. There is some suggestion that the combined GA/SA group might do worse.

Risk of bias: a minor point, but the risk of bias has been put as high for the Parker trial as participants knew their allocation. This is probably a little harsh for a mortality outcome, and realistically also for length of stay.

Exclusion of Neuman study for length of stay. Although the Neuman study doesn't include a direct SD is it estimable from the CI given in the paper. The authors question their own analysis due to the heavy weighting of the Helwani study, so it would seem sensible to try to include the Neuman study. The White 2016 study showed no difference between the groups so this might alter the overall conclusion.

There were 4 studies excluded at full text - please elaborate.

It would support the robustness of the study if the authors provided sensitivity analyses - eg. excluding small studies, etc.

Iain Moppett
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Are the methods appropriate and well described?
If not, please specify what is required in your comments to the authors.

No

Does the work include the necessary controls?
If not, please specify which controls are required in your comments to the authors.

Yes

Are the conclusions drawn adequately supported by the data shown?
If not, please explain in your comments to the authors.

Yes

Are you able to assess any statistics in the manuscript or would you recommend an additional statistical review?
If an additional statistical review is recommended, please specify what aspects require further assessment in your comments to the editors.

I am able to assess the statistics

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I declare that I have no competing interests.

However, I am the author of one of the included studies and one missing study (see comments).

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