Reviewer's report

Title: Hypertension Outcomes of Adrenalectomy in Patients with Primary Aldosteronism: a Systematic Review and Meta-analysis

Version: 0 Date: 26 Apr 2017

Reviewer: Martin Wolley

Reviewer's report:

In this meta-analysis the authors pooled results from a number of mostly retrospective observational reports to estimate the hypertension cure rate from unilateral adrenalectomy in primary aldosteronism. There were 43 studies, of which 40 were retrospective, comprising almost 4000 patients. The pooled hypertension cure rate was 50.6%, being higher in China vs other countries, shorter vs longer follow up and in smaller vs larger cohorts. The studies were heterogeneous and there was a high probability of bias suggested by the funnel plots. They were unable to pool data to estimate odds of cure from more discrete variables such as age etc to develop a new prediction score.

The conclusions are reasonable based on the unfortunately limited data that is available, and this provides a good overall estimate of the cure rate that is practically achievable.

I would like to see the inclusion of the method of diagnosis of unilateral disease if feasible, given that cure of hypertension is likely to depend at least in part on what is left in the remaining adrenal. Even if only at the level of imaging vs AVS, it would be interesting given the results of the recent Spartacus trial. If not possible it should be mentioned as a limitation.

Although briefly mentioned in the discussion (page 10 line 31) I think this needs further stress - complete cure of hypertension as a binary benefit/no benefit variable is an oversimplification. Many patients would perceive achieving control of blood pressure and a large reduction in medications as worthwhile. Additional quality of life benefits have been reported, as have very recent metabolic effects.

Table 4 needs to be labelled better - I believe this is referring to the individuals studies (?) included in the meta-analysis but that is not clear from the legend, title or column headers.
Are the methods appropriate and well described?
If not, please specify what is required in your comments to the authors.

Yes

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

Quality of written English
Please indicate the quality of language in the manuscript:

Acceptable

Declaration of competing interests
Please complete a declaration of competing interests, considering the following questions:

1. Have you in the past five years received reimbursements, fees, funding, or salary from an organisation that may in any way gain or lose financially from the publication of this manuscript, either now or in the future?

2. Do you hold any stocks or shares in an organisation that may in any way gain or lose financially from the publication of this manuscript, either now or in the future?

3. Do you hold or are you currently applying for any patents relating to the content of the manuscript?

4. Have you received reimbursements, fees, funding, or salary from an organization that holds or has applied for patents relating to the content of the manuscript?

5. Do you have any other financial competing interests?

6. Do you have any non-financial competing interests in relation to this paper?
If you can answer no to all of the above, write 'I declare that I have no competing interests' below. If your reply is yes to any, please give details below.

I declare that I have no competing interests

I agree to the open peer review policy of the journal. I understand that my name will be included on my report to the authors and, if the manuscript is accepted for publication, my named report including any attachments I upload will be posted on the website along with the authors' responses. I agree for my report to be made available under an Open Access Creative Commons CC-BY license (http://creativecommons.org/licenses/by/4.0/). I understand that any comments which I do not wish to be included in my named report can be included as confidential comments to the editors, which will not be published.

I agree to the open peer review policy of the journal