Reviewer's report

Title: Unilateral cause of primary hyperaldosteronism is usual and adrenal vein sampling is mandatory in the diagnosis. Results from screening to histopathology in a Swedish population

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Reviewer: j deinum

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This paper is concerned with two issues: first the determination of optimal cut-off values for screening for primary aldosteronism (PA), second with the finding of unilateral hyperplasia as a frequent cause for PA. According to the title the consequence of the latter in the opinion of the authors is that adrenal vein sampling is an important diagnostic tool in order to detect unilateral hyperplasia.

The paper is well-written, but I am afraid it is less well conceived. I have the following comments:

1. There is little correspondence between the title and the conclusion of the abstract. I suspect this is caused by addressing two very different issues: optimizing screening and the pathology causing PA.

2. In order to determine optimal cut-off levels for the screening test, one should determine ARR in patients with proven PA and in control patients with the same entry characteristic as the patients with PA, i.e. hypertension. It is wrong to use healthy controls for reference and in fact, using these values to determine cut-off values jeopardizes the value of this part of the study considerably. Moreover, medication use at the time of screening should be well-defined. Moreover a screening test should have a very high sensitivity, and this is not given for the combination of aldosterone level and ARR.

3. what is a standardized sphygmomanometer? P.5

4. the two PRA methods should be compared by Bland Altman plots, not by correlation.

5. Coefficient of variation should be given for a specific PRA value (preferably a low one for this study)

6. I could not find what EA stands for.

7. I doubt the prospective nature. It is unlikely for a carefully executed prospective study to have this large loss-to-follow-up rate. In order to judge the value of diagnostic methods the only way to assess this is to determine the benefit for the patients. There is only follow-up for five adrenalectomized patients and I think this number is far too low to draw these conclusions. These numbers cannot support in itself the recommendation in the title that adrenal vein sampling is mandatory.
8. The supplementary table 1 should contain data on potassium levels.
9. Adrenal vein sampling is rarely available. What should a physician do if he/she has no access to AVS?

**Level of interest:** An article of insufficient interest to warrant publication in a scientific/medical journal

**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