Reviewer's report

Title: Association between adverse pregnancy outcome and imbalance in angiogenic factors and oxidative stress biomarkers in gestational hypertension and preeclampsia.

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Reviewer: Sam Newton

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Title: Association between adverse pregnancy outcome and imbalance in angiogenic factors and oxidative stress biomarkers in gestational hypertension and preeclampsia

Abstract: There are a few issues outlined below which need to be addressed.

Line 36: The authors use the words hypertensive pregnancy? Can this be replaced by hypertension in pregnancy?

Line 46-49. It was reported that “Levels of sFlt-1, 8-epi-PGF2α and sFlt-1/PLGF were significantly elevated while PLGF and T-AOC were correspondingly decreased in study participants with PE co-existing with adverse outcomes compared to PE without adverse outcome and normal pregnant controls (p<0.05)” and that three of them were significantly elevated. Please report the level of significance for each of them.

It was also reported that “Two others PLGF and T-AOC were reported to be correspondingly decreased”. Were these decreases also significant and if yes what is the level of the decrease? Please report with p values.

Line 48-53. Please report the levels of significance for the conditions in line 48-53 as has been recommended in the comment on line 46-49 and do not lump them altogether.

Conclusion: The conclusion the authors seemed to have arrived at is not supported by the results. How did the authors determine that there was an imbalance? Secondly the authors have not shown how early identification of these factors will present adverse complications and also they have not stated how the results from this study will provide innovative approaches to early management.

Specific comments:

1. Line 69-71 contradicts the statement in the abstract in line 36-38 that states that some reviews relate this to ....” and yet in line 69-71 it states that little or no published research have explored the association of adverse pregnancy outcomes with angiogenic factors and oxidative stress biomarkers.
2. Line 93-94. Unless this is the journal’s style it is highly unusual to have ethical consideration being the first thing mentioned in the methods section.

3. Line 110. 235 women were initially recruited into the three arms of the study. How did the investigators finally settle on 50 for each group out of the original 235 and what were the statistical considerations which informed the decision to use 150 as the sample size.

4. Line 120 it has been stated that “to ensure 100% rate of accuracy of answers to structured questionnaires, record reviews of hospital database were also accessed”. The authors should please explain how accessing the records of hospital records from the database will ensure that the answers given are accurate

5. Line 132. For a study of this nature in order to reduce observer bias it will have been expected that a digital sphygmomanometer will have been used and this study used a mercury sphygmomanometer and this decision was apparently based on a 1967 recommendation from the American Heart Association (reference number 9). This is rather unusual.

6. Line 196. There is no need for ages to be reported ± 4 decimal places.

7. Statistical analyses. The authors need to explain why for a study with such a very simple data set three rank tests namely Kruskal Wallis tests, Mann-Whitney test and Spearman’s rank correlations tests should be used for its analyses. What is the advantage of doing this? Apart from the Mann-Whitney test which was used in table 2 and the Spearman’s test which was used in Table 4 can the authors explain what the results obtained from using the Kruskal Wallis tests were used for.

8. Line 317. The statement “The significantly shift of the balance in favour of sFlt-1 and 8-epiPGF2#” needs to be explained.

9. Line 321. The word “are” is missing between biomarkers and word the.

10. Reference number 18 is incomplete.

11. Line 326-330 The conclusion of the study are not supported by the results of the study. The authors for example need to explain how “Early identification of patients at risk of adverse pregnancy complications could provide innovative approaches to the early management to help reduce maternal and child mortalities. Thus in managing hypertensive pregnancy especially GH, PE and its associated adverse pregnancy outcomes, supplementation of diet or drug with antioxidants or proangiogenic molecules should form part of the treatment plan”.

Table 1. The authors seemed to have omitted the gestational age at baseline for the normal pregnancies? This information needs to be provided as well.

Table 2. How can the authors explain the fact that the association which was
found to be highly significant was more to do with the normal pregnancies 48 hours post partum compared to the others.

Table 3. How do the proportions which have been stated in table 3 help to answer the research question?