Reviewer’s report

Title: Biomarker Screening for Antenatal Depression in Women Who Underwent Caesarean Section: A Matched Observational Study with Plasma Lipidomics

Version: 1 Date: 29 Apr 2019

Reviewer: Reviewer 2

Reviewer's report:

PEER REVIEWER ASSESSMENTS:

OBJECTIVE - Full research articles: is there a clear objective that addresses a testable research question(s) (brief or other article types: is there a clear objective)?
Yes - there is a clear objective

DESIGN - Is the current approach (including controls and analysis protocols) appropriate for the objective?
Yes - the approach is appropriate

EXECUTION - Are the experiments and analyses performed with technical rigor to allow confidence in the results?
No - there are minor issues

STATISTICS - Is the use of statistics in the manuscript appropriate?
No - there are issues with the statistics in the study

INTERPRETATION - Is the current interpretation/discussion of the results reasonable and not overstated?
No - there are minor issues

OVERALL MANUSCRIPT POTENTIAL - Is the current version of this work technically sound? If not, can revisions be made to make the work technically sound?
Probably - with minor revisions

PEER REVIEWER COMMENTS:

GENERAL COMMENTS: Potentially innovative contribution to furthering understanding of biomarkers in antenatal depression. Literature review seems thorough. A bit better description of sampling and potential limitations besides the sample sizes should be added to the manuscript. In addition some issues about statistical analyses need to be addressed.
REQUESTED REVISIONS:
Authors need to describe better the process of enrollment and reasons for exclusions given that hundreds were screened and only 33 were enrolled with AD and then matched. The flow chart clarifies the criteria used to screen and match but not how many women at each stage were excluded and for what reasons. Matching criteria are also slim. In the table the percentages under quality of marriage also are confusing. At the very least the discussion should address other factors that might account for different lipid profiles that could confound the findings. Also, the reasons in the intro for need for biomarkers (e.g. inadequate clinical opinion) should be modified somewhat as patient-reported screening instruments have shown to be valid and reliable. The reverse association of biomarker to self-reported depression needs to be considered. What percent of patients with the identified 'biomarker' are not depressed? What is the predicted sensitivity and specificity of such use of biomarkers? Can the authors also analyze the strength of the association depending on the level of self-reported depression (e.g. very high scores on the EPDS vs lower) or suggest that as other steps to study (given the limited sample size in this study). Authors also need to describe how they selected variables for the logistic regression. Further, p-value comparisons for 35 variables should be Bonferonni corrected as there is room for Type 2 error.

ADDITIONAL REQUESTS/SUGGESTIONS:
Manuscript could use some English language editing. Also, some general references to the development of biomarkers are used to support the specific link of biomarkers to depression and after checking some of these references did not specifically support the points being made in the text (eg, 24-27) and some others.

Note: This reviewer report can be downloaded - see attached pdf file.

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.

No

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

No

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:

Needs some language corrections before being published

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