Reviewer’s report

Title: Using fetal scalp stimulation with Doppler ultrasonography to enhance intermittent auscultation in low-resource settings: A diagnostic trial from Tanzania

Version: 0 Date: 12 Nov 2018

Reviewer: Jonathan Nelson

Reviewer’s report:

Overall I feel the premise is clear and this is an important area of research and admirable to try and address.

Some general comments from reading the paper that I was unsure of:

- Whilst validation of the handheld Doppler devices with a CTG was nice to show a strong correlation, it should be acknowledged that there are no standards to say this degree of correlation means we are ok to proceed e.g. it was still your subjective choice as investigators to go ahead with this degree of correlation.

- You mention using chi-square tests to compare groups, but should these be listed or mentioned in table 1?

- My main query or concern is surrounding how the study influenced intervention e.g. caesarean section. I understand caesarean rates were similar, but was there any change in management based in the IA+FSST group? I couldn't quite work out whether you were performing the FSST but then ignoring whether it was positive or negative and following previous protocols for intervention based on IA, or whether you were basing management on it e.g. timing of delivery. This links in with my other query as to the comment about this being unethical to perform currently as an RCT. If you were altering management in the IA+FSST group then I don't see how whether it was performed in this study design or RCT makes any difference because you are subjecting that IA+FSST group to a potentially unproven intervention.

Assuming you weren't changing management based on the FSST then it might be worth acknowledging in the discussion that if this intervention were to be implemented it would need to involve quite widespread re-education. Without this it could result in increased intervention e.g. continued intervention in a group with standard 'fetal distress' but a normal FSST, and further intervention in a group without standard fetal distress with with an abnormal FSST.

Also, whilst the increased examination in the IA+FSST group was mentioned, a concern in the resource-rich countries is the increased risk of infection/ascending chorioamnionitis with additional examinations, so at least this could be mentioned?
I do feel the possible benefits of this sort of intervention could be explored further or referenced more as well. The potential neonatal morbidity/mortality through better identifying intra-partum hypoxia is mentioned, but the potential decrease in unnecessary caesarean sections is as big a positive in terms of maternal morbidity and future maternal/neonatal morbidity mortality. I wonder if this aspect should be mentioned more or at least be included as a measure in a future study?

**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.

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