Reviewer's report

Title: Improvement of fetal heart rate monitoring by exclusion of maternal-fetal heart rate ambiguities in the final hour of labor.

Version: 2 Date: 12 July 2015

Reviewer: Linda May

Reviewer's report:

Major Compulsory Revisions:
NA

Minor Essential Revisions:

Abstract:
1. Clearly state hypothesis of study
2. Mention if there are or are not differences in maternal, fetal, neonatal characteristics that were evaluated.
3. It may be more clear to state in the conclusion the removal of maternal and fetal HR ambiguity improves FHR interpretation during the final hour of labor.
4. FIGO guidelines is listed as a keyword, however, it is not mentioned in abstract or manuscript.

Background:
1. 2nd sentence, 1st paragraph: please replace “The former” with the subject of the sentence.
2. The purpose is stated, please state hypothesis of study as well.

Methods:
1. were confounding variables excluded (unhealthy women with complications, epidural, etc.)?
2. define minor ambiguity
3. was a separate analysis done on vaginal vs. C-section deliveries?
4. Line 95-96, what is the reference for the baselines; please more detail regarding the algorithms for MHR and FHR baselines?
5. Please spell out FIGO at first use within text.
6. Line 91, is the term baseline referring to LTV or HR?
7. Line 94-101, please clarify if the normal/abnormal classification of STV and LTV were used for the fetus?
8. Please describe the sampling rate and signal processing of the fHR recording.
9. Line 102, how many of the recordings were excluded from analysis due to
“poor or ambiguous visual signal quality . . . “
10. Statistical Analysis section, please explain the skewed data is presented as median and interquartile range.

Results:
1. The results are mentioned for maternal demographics (BMI, age, gestational age at delivery, blood pressure, temperature, analgesics, delivery type, Apgar scores, acidosis level), however, these measures are not explained in the methods section. Please briefly describe how these measures were acquired.
2. Please report the average length of labor and delivery for participants.
3. line 159-161, please re-word to clarify meaning of this sentence.

Discussion:
1. line 149-150, regarding validation of system; this information should be moved to the methods section.

Conclusion:
1. fine

Figures:
1. Figure 1 does not have a title on page 18.

Discretionary Revisions:
NA

Level of interest: An article of outstanding merit and interest in its field

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