Reviewer's report

Title: Study protocol: PoPE- Prediction of Preterm delivery by Electrohysterography

Version: 2  Date: 24 March 2014

Reviewer: Miha Lucovnik

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Discretionary Revisions

This is a very interesting study trying to evaluate an automated method to estimate EHG (or uterine EMG) signal conduction velocity (also referred to as propagation velocity by other groups of researchers in the field). Conduction velocity has been shown to be a promising EHG parameter in prediction of preterm delivery. In order to make EHG a clinically useful tool, however, signal analysis has to be automated, as the authors rightfully note. Preliminary results of the proposed study have already been published and the results are encouraging. I look forward to read the final report.

The only part of the protocol that needs clarification is, in my opinion, how will contractions be chosen. This is essential since conduction velocity will only be measured during contractions (not the whole EHG recording). The authors state: “Contractions will be detected by analysis of the EHG and using an estimation of the intra uterine pressure.” How will intrauterine pressure be estimated is not clear to me. Analysis of EHG recording in order to find contractions, on the other hand, implies visual inspection of signals. This is again both time consuming and subjective, which may limit the clinical usefulness of the method studied. Many groups have used root mean square to convert EHG signals to resemble contraction tracings. This could, perhaps, be helpful in identifying uterine contractions to be analyzed by this method also.

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

Quality of written English: Acceptable

Statistical review: Yes, but I do not feel adequately qualified to assess the statistics.

Declaration of competing interests:

I do not have any competing interests to disclose.