Reviewer's report

Title: Fetal growth determines duration of the human pregnancy

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Reviewer: Jim P Neilson

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This paper adds to the literature on fetal measurement / gestational age assessment without entirely clarifying the issue as to the proportion of ‘small’ fetuses that are genuinely small compared to those that have miscalculated gestational age.

There are two major issues that the authors should address:

1. This study is predicated on an assumption that women with certain knowledge of their last menstrual period, regular cycle etc. provides a population with sufficient certainty about gestational age to be useful for research purposes. However, the authors have excluded 8 women ‘because the discrepancy between ultrasound and menstrual age was more than 14 days’. This is not discussed further in the paper, but needs justification. Was this pre-specified? Does it challenge the underlying assumption about precision of gestational age assessment? Why 14 days rather than, say, 10 or 7 days?

2. There is a possible source of bias here which isn’t addressed in the paper and which hinges on what the attending clinicians did with the information provided on second trimester measurements. If they re-calculated gestational age on the basis of second trimester fetal measurements (as is very commonly done), then gestational ages would be advanced for bigger fetuses and reversed for smaller fetuses. Since the authors only included women with ‘spontaneous deliveries’ [I assume that this means spontaneous labours and would potentially include instrumental deliveries and emergency caesarean sections in labour – but this does need clarification] then it is quite likely that bigger fetuses would be more likely to be excluded because of induction of labour for perceived post-term pregnancy. It would be useful to give a breakdown of ALL pregnancies included in the study [like a CONSORT flow chart in randomised trial] rather than only those included in the analysis, to reassure the reader that there was no differential effect.

Minor points:

1. P4 para 1 final sentence: it is more accurate to say: reducing the number of inductions of labour for presumed post-term pregnancy.

2. ‘foetal’ is better spelt ‘fetal’.

3. I wasn’t clear what was meant by ‘when adjusting for the difference between LMP and ultrasound dating’ p7 para 2.

4. ‘delivery’ should read ‘labour’ p8 para 2 | 8.
5. 'pregnancies' should read 'women' p8 para 2 l 10.
6. Reference 7 is incorrectly cited.