Reviewer's report

Title: New Birth Weight Reference Standards Customised to Maternal BMI and Sex of babies from South India

Version: 5 Date: 10 December 2012

Reviewer: Matthews Mathai

Reviewer's report:

Major compulsory revision:

1. The new analysis has included BMI to develop smoothed birthweight centiles for the different groups. It is surprising to note that only 36.8% of women reportedly had a normal BMI. The rest were considered obese, overweight or underweight. It is not clear how adjustments were made for BMI while developing smoothed birthweight centiles. I am also unclear why women with BMI outside the normal range were included in developing reference graphs. The authors may also wish to comment on the relevance of BMI at the time of delivery. Obesity is associated with other complications in pregnancy which have an effect on birthweight. The earlier study from the same institution used maternal height prior to using adjusted birthweight centiles – a similar approach could be considered.

2. The number of first born babies at early gestational ages are in single digits. Providing a range of birthweight centiles for 1 or 2 observations does not make clinical sense. Suggest excluding data from groups with very few observations.

3. The proportion of primigravidae in this report is 12.2%, which is considerably less than 28.7% reported from the same institution in the 1990s. With falling fertility rates, one should have expected the same, if not an increase in the proportion of primigravidae. The authors should provide an explanation for the differences.

Minor Essential Revision:

1. The earlier comment on misclassification of birthweights when using unadjusted centiles does not appear to have been clearly understood. For clinical management, the classification of interest is whether an infant is of appropriate weight for gestation, or small for gestation or large for gestation. It does not matter if the birthweight falls between the 10th and 25th centile, or the 25th and 75th centile, etc. I suggest reducing the number of categories in line with clinical relevance.

2. The text should be better edited – there are a few sentences which have been repeated. “Primigravidae” does not make sense. Suggest referring to babies as first born or latter born.
3. The authors may clarify the last sentence under Discussion: “Though this may not be very useful in India, where the sex of the baby cannot be revealed to the mother antenatally, it may be useful for Asian mothers elsewhere”. This paper refers to birthweight and not ultrasound determined fetal weight. Also how useful are birthweight centiles from one Indian centre for Asian mothers elsewhere.

4. The last sentence under conclusion also needs an explanation why although several Indian birthweight standards have been included in the reference, “Western standards… have been followed earlier”.

Level of interest: An article of importance in its field

Quality of written English: Needs some language corrections before being published

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

Declaration of competing interests:

I declare that I have no competing interests