Reviewer's report

Title: Optimal fetal growth for the Caucasian singleton and assessment of appropriateness of fetal growth: an analysis of a total population perinatal database

Version: 4 Date: 11 March 2005

Reviewer: Russell S Kirby

Reviewer's report:

I have reviewed the revised version of the manuscript “Optimal fetal growth for the Caucasian singleton and assessment of appropriateness of fetal growth: an analysis of a total population perinatal database”. The revision is vastly improved and nearly acceptable in my opinion. However, there are some additional comments I would like the authors to consider. I am also a little concerned about the length of the discussion section relative to the rest of the paper. While most of the points raised are interesting, it might be possible to present these ideas more efficiently.

In the methods section, p. 8, top of page, be more clear that the actual study focuses on the full distribution of gestational ages from xx â€” xx. A reader might be confused by the focus for data cleaning on the 23-36 wk range.

In the presentation of the results, I think the editor should decide whether the equations should be specified in the text, given that the same information is also provided in tabular form in three tables. Personally I would say this is redundant, though I am sympathetic to the author’s argument in their response to my previous comments.

On p. 17, top of page, a more specific generalization is needed re gestation-specific outcomes of multiple births. We have conducted extensive analyses of the American national data, and have found that in the 26-32 wk range of gestational ages, quads have the best mortality outcomes, followed by triplets and twins, with singletons having the worst outcomes (summarized in our review paper, Alexander GR et al, Fetal and neonatal mortality risks of multiple births. Obstet Gynecol Clin N Am 2005:32:1-16, also check PubMed for series of papers with Salihu HM as first author in 2003-4).

On p. 19, there is quite a bit of research on paternal size, including whether mother and father were SGA themselves. The key issue with not using paternal anthropometric data has to do with availability and accuracy of these data in the clinical records. Continuing on p. 20, make a more convincing case for why maternal pre-pregnant BMI should not be included in these measures. I am not satisfied just based on its being incomplete â€“ speculate as to why it is important and that you are modifying the perinatal data system to capture this information more systematically in the future, perhaps.

On p. 21, there is a sentence concerning association between maternal age and HC, despite adjustment for parity. Do you mean to imply that there is an interaction between age and parity? Remember that yours is a cross-sectional dataset â€“ would you expect to find this in an analysis of birth records linked across sibships? This finding was not explicitly mentioned in the results section â€“ if its important it should first be mentioned there.

Re the point about regression to the mean, consider the following brand new paper, Barnett AG et al Regression to the mean: what it is and how to deal with it. Int J Epidemiol 2005;34:215-220.
The conclusion lacks bite. Consider making a stronger statement about future directions for research, informatics, clinical management.

Specific comments:

p. 5 omit â€“ see Discussionâ€™ at end of first full para.

p. 6 several copyedits. Omit â€“ or notâ€™ on line 3. Change last sentence of first para to â€“ The most recent available birth cohort at the time of writing was for 2002.â€™

Delete â€“ as defined in the introductionâ€™ from first sentence third para. Change â€“ which has recently beenâ€™ to â€“ asâ€™ in first sentence para 4. There is a redundant space before the period in the last complete sentence on this page.

p. 7 Make first full sentence into two, with a period after â€“ recordsâ€™ and new sentence beginning with â€“ Howeverâ€™. Itâ€™s not necessary to be specific to two decimal places with percentages, change â€“ 0.08%â€™ to â€“ <0.1%â€™ near bottom of page. I still havenâ€™t decided whether â€“ datumâ€™ sounds right at the bottom of this page.

p. 8 Paragraphs should have at least two sentences, so no break is needed after the first sentence in section on â€“ Analysisâ€™.

p. 9 Check on wording as to whether â€“ multivariateâ€™ or â€“ multivariableâ€™ is the correct term, but either way, it is one word, not two.

p. 14 omit â€“ see Sample Selectionâ€™ at top of page. First sentence next para, change end of sentence to â€“ despite the many advantages of ratios over the more commonly used percentile positionsâ€™ for readability.

p. 16 First full para, end first sentence with â€“ unfamiliarityâ€™. Delete â€“ becauseâ€™ and start next sentence with â€“ Inâ€™. Delete â€“ It must be noted thatâ€™ later in this paragraph. Delete â€“ As indicated in the introductionâ€™ in second sentence of last para at bottom of this page.

p. 17 First sentence in first full para, change to â€“ Maternal race is also a problematic factor.â€™ Later in para, to what does â€“ Ifâ€™ refer in sentence beginning â€“ It arisesâ€™ â€“ this is very unclear. And still later, delete â€“ This is less likely to be trueâ€™ so that sentence begins â€“ In communities . . .â€™. Replace â€“ who alsoâ€™ with â€“ womenâ€™ later in this sentence and delete â€“ butâ€™. Next sentence, move the word â€“ onlyâ€™ from where it is now to between â€“ raceâ€™ and â€“ ifâ€™.

p. 18 Top of page, break first line at â€“ Ifâ€™ into two sentences. The sentence beginning with â€“ sinceâ€™ is extremely complex and hard to follow. Consider rephrasing, or breaking into two or three sentences. Delete â€“ It is also interesting to note thatâ€™ and edit so sentence begins â€“ Selected births were also more . . .â€™. Next para, delete â€“ For the following reasons are edit so sentence begins â€“ We believe that the curves shown in Figure 2 demonstrate that . . .â€™. No para break before sentence beginning â€“ Biologicalâ€™.

p. 19 â€“ away fromâ€™ is not a conventional usage for comparing to term birth. Use â€“ prior toâ€™ or â€“ beforeâ€™. At bottom of page, try â€“ Some may consider our selection of predictor variables incomplete . . .â€™ for first sentence of new section.

p. 21 change â€“ accountâ€™ to â€“ accountedâ€™ in first sentence first full para. Next sentence change â€“ is likely to be associated withâ€™ to â€“ may result from variation inâ€™. Add a reference for the statement that birth weight can be measured within 0.15%. The comma is in the wrong place in next sentence, and change â€“ on account ofâ€™ to â€“ due toâ€™. Break this sentence by ending at â€“ stretchedâ€™, delete â€“ andâ€™ and begin new with â€“ Measuredâ€™.

p. 22 again, use â€“ <0.1%â€™ rather than â€“ <0.03%â€™. Next para change â€“ were the first to presentâ€™ to â€“ presented the firstâ€™. Add â€“ was the development ofâ€™ between â€“ growthâ€™ and â€“ customizedâ€™ in next sentence. Last sentence of this para, replace with â€“ These charts were designed to predict birth weight rather than for assessment of appropriateness of fetal growth.â€™ Next para, change â€“ which was theâ€™ to â€“ aâ€™. Next sentence, change â€“ They excludedâ€™ to â€“ Their study sample excludedâ€™. Next sentence, delete â€“ surprisingly they continued to defineâ€™, and edit so that the sentence begins â€“ Poor growth was defined on the basis . . .â€™ and delete â€“ see aboveâ€™ at end of sentence.

p. 23 Begin this page with a new subhead â€“ Summaryâ€™. Second sentence, replace phrase
beginning â€”Our groupâ€™ so that sentence reads â€”We sought a sample with optimal growth opportunities for fetal growth for the creation of the standards, both . . . and also to avoid . . . â€™. Next sentence, delete â€”could onlyâ€™ and so it reads â€”excluded only perinatal . . . â€™. Next sentence replace â€”that alsoâ€™ with â€”weâ€™. Next para, first sentence, replace â€”here is possible on accountâ€™ with â€”here was possible in part due toâ€™.

p. 24 The conclusion leaves me hanging â€”what are the future steps for perinatal epidemiologic research and clinical utility of your work?

Tables:
1. get rid of the grid
2. omit grid, align columns and right justify numerical values
3. omit grid, move * to col heading, group information so it is easier to read (many of the rows relate to one another but this is not obvious)
4. remove grid, include adjusted R-squared, df, goodness of fit statistics. Present confidence intervals in a single column headed 95% Confidence Limits with data presented in form -15.51 - -12.66. these comments also apply to Tables 5 and 6.
7. This could be organized much more efficiently into two columns:

Percentile Position Percentage of Optimal Weight

<table>
<thead>
<tr>
<th>Weight</th>
<th>3rd</th>
<th>10th</th>
<th>90th</th>
<th>Etc</th>
</tr>
</thead>
<tbody>
<tr>
<td>Change</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Figures
1. Place Y-axis label so it reads from bottom to top along axis, also on Fig 2. Assume that your readers only have black toner when they print out the graphs. Donâ€™t use grey-tones which are practically invisible when printed. Make the grey tone trends solid black, and rely on the different dash marks to differentiate the lines.

What next?: Accept after minor essential revisions

Level of interest: An article whose findings are important to those with closely related research interests

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

Statistical review: No

Declaration of competing interests:
I declare that I have no competing interests.