Reviewer’s report

Title: Early pregnancy body mass index and spontaneous preterm birth in Northwest Russia: a registry-based study

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Reviewer: Maria Regina Torloni

Reviewer’s report:

This is a relevant and interesting study from a country that has few publications on this topic. The study question is well defined but there are several important details missing in Methods, especially the exact definition of the authors’ main outcome. The data is sound, with the exception of a few minor errors. The Discussion could be improved if the authors compared their results specifically with those of other studies that analyzed the association between maternal BMI versus spontaneous PTB (instead of PTB in general). The limitations of the work are clearly stated. The title and abstract are adequate and the writing is acceptable.

Background

Minor Essential Revisions:

1) The data (and references) on prevalence of pre-obesity and obesity among reproductive age women in Russia do not seem to be the most representative or the most recent available. The authors should strive to provide more recent and nationally representative estimates (look at the WHO on Global Database on Body Mass Index).

2) The 2nd sentence on page 5 is missing the word “not”, to make sense.

Methods

Major Compulsory Revisions:

1) please clarify what is the meaning of “singleton spontaneous deliveries” (last sentence, 2nd paragraph, page 5). Did the author exclude all women who had induced or elective, antepartum cesarean deliveries? This should be clearly stated.

2) The exposure variable (BMI) is very well defined but the outcome variable (spontaneous PTB) needs to be better defined by the authors. On page 6, 2nd paragraph, it is unclear whether the authors included only women who presented with spontaneous onset of labor before 37 weeks with intact membranes or whether they also included those with preterm ruptured membranes too, as long as they were in spontaneous labor. What about those with spontaneous onset of labor < 37 weeks who were delivered by intrapartum CS? On Figure 1, it is unclear whether the authors excluded all women who were delivered by CS before 37 weeks (including those who initiated preterm labor spontaneously) or only those that had an elective CS before 37 weeks, for any reason. This should
be clearly stated.
3) The authors need to report what was the exact definition used for “excessive gestational weight gain”, which was one of their confounders (page 7).

Minor Essential Revision:
For the sake of clarity, education should be presented in years of schooling, instead of “basic”, “secondary” and “vocational”, which are unclear for readers of other nationalities.

Results
Minor Essential Revision:
The 2nd foot note of table 2 should be reviewed: the total N for term deliveries is 20,064 (29,209 women – 1645 PTB).

Discussion
Major Compulsory Revisions:
1. The statement on the 2nd paragraph of page 10 regarding the findings of the systematic review by McDonald is misleading: “According to the review, overweight and obese women had an increased risk of VPTB (<33 weeks of gestation) with relative risks of 1.16 (95% CI: 1.05-1.29), 1.45 (95% CI: 1.23-1.71), and 1.82 (95% CI: 1.48-2.24) for overweight, obese, and very obese women, respectively”. These data refer to PTB in general and not specifically to spontaneous PTB. In fact, McDonald states that “The risk of spontaneous preterm birth did not differ (0.93, 0.85 to 1.01, 15 studies)” . His Table 3 clearly depicts the specific OR for spontaneous PTB according to maternal BMI, from studies with crude and adjusted OR; they are all non-significant.

2. Similarly, in their discussion of the findings of the study by Salihu (2nd paragraph, page 11), the authors report the results of the association between low maternal BMI versus PTB in general. The crude and AOR for this association with spontaneous PTB are different from the values presented in the Discussion (see Salihu’s Table 3).

3. The authors are encouraged to compare and discuss their results with the findings of those reported in two other systematic reviews (Honest 2005, in their reference list and Torloni et al 2009 not in their list) that specifically analyzed the interaction between maternal BMI and spontaneous PTB.

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

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