Reviewer’s report

Title: Risk factors associated with the development of postpartum diabetes in Japanese women with gestational diabetes

Version: 0 Date: 26 Sep 2017

Reviewer: Teri Hernandez

Reviewer's report:

Overall Comments:

The authors have identified risk factors for the development of Type 2 diabetes postpartum within Japanese women with a history of GDM. Importantly, they sought to identify if there was a greater incidence of postpartum Type 2 diabetes among women diagnosed with GDM by the former Japanese criteria vs. the contemporary IADPSG criteria. The primary risk factors identified (A1c and 2-hour post 75g glucose challenge plasma glucose, both from the day of antepartum GDM diagnosis) are not new. Moreover, the lack of difference in postpartum Type 2 diabetes rate between diagnostic criteria could be due to lack of statistical power. Finally, the authors did not acknowledge the fact that the IADPSG criteria were not meant to identify women at high risk for postpartum diabetes, as with the Carpenter and Coustan criteria. Instead, the IADPSG criteria glucose thresholds were chosen to identify a 1.75-fold increased risk of offspring LGA (see Ryan EA, Diabetologia, 2011, 54:480-486). This is a very important point of discussion that can be used to provide context for interpreting these data.

Other comments:

Abstract

1. First sentence: is a fragment. The second sentence is unclear

2. Methods: Please make it clear that the outcome is postpartum Type 2 diabetes--not to be confused with Type 1 diabetes (also increasing in incidence after pregnancy)

3. Results: Suggest making it clear that the 2-hr PG and A1c are both from the day of GDM diagnosis--otherwise readers might think these variables were collected after diagnosis

4. The last sentence of the results: is not clear as written.
Introduction

1. As described above, it is strongly suggested that the authors describe that the IADPSG criteria glucose thresholds are based on offspring risk for LGA. Also, throughout the manuscript, make it clear that postpartum Type 2 diabetes is the phenotype of interest.

Methods

1. Why was 2003 chosen for the early end of the data abstraction years? Was GDM screening standard of care/universal in 2003? Please clarify. The ACHOIS trial was published in 2005 and provided the first evidence from a RCT that diagnosis and management of GDM improves perinatal outcomes--before that trial was published, universal screening may not have been instituted and this could be a confounding variable in terms of the incidence of GDM.

2. Maternal characteristics: Were history of macrosomia/LGA and parity included? Were women with twin gestations excluded?

3. Power: Although this is a retrospective study, the authors did not make the primary outcome clear. It is still possible to estimate power in order to have a metric for the minimum number of cases needed to be archived in order to answer the question. Because there was no power analysis or any mention at all that this was considered, it is possible that the lack of difference in type 2 diabetes incidence between the older vs. newer criteria could be a Type 2 error--it is recommended that the authors acknowledge this for readers.

4. Statistics: The ROC curves are not described in the statistics section. Moreover, the difference in the analyses between Tables 5 vs. 6 are not described, nor are they clear.

Discussion

1. Second paragraph, last sentence: It is strongly recommended that this statement be removed--it is not a valid speculation. The Carpenter & Coustan criteria glucose thresholds were validated and chosen based on maternal risk for postpartum diabetes--the IADPSG criteria were not.

2. Paragraph beginning with "In our previous study…". It is recommended that this paragraph be removed as it is not relevant to this study.
Are the methods appropriate and well described?
If not, please specify what is required in your comments to the authors.

No

Does the work include the necessary controls?
If not, please specify which controls are required in your comments to the authors.

Yes

Are the conclusions drawn adequately supported by the data shown?
If not, please explain in your comments to the authors.

Yes

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If an additional statistical review is recommended, please specify what aspects require further assessment in your comments to the editors.

I recommend additional statistical review

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