Author’s response to reviews

Title: Trend of various adiposity indices in women with and without history of gestational diabetes: A population-based cohort study

Authors:

Samira Behboudi-Gandevani (s.behboudi@hotmail.com)
Fahimeh Ramezani Tehrani (fah.tehrani@gmail.com)
Maryam Rahmati (rahmati.mary@gmail.com)
Mina Amiri (mina_amiri_p@yahoo.com)
Fereidoun Azizi (azizi@endocrine.ac.ir)

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Response (R) to reviewer comments (C)

We appreciate the valuable comments of the reviewers and have provided a revised version based on these comments, along with a point-by-point response to the comments. We hope that the responses meet your journal needs. Please do not hesitate to inform us if any further changes are required.

Yours Sincerely

Fahimeh Ramezani Tehrani

The corresponding author

Editor Comments: This constitutes an interesting study that attempts to compare adiposity indices among women with GDM and non GDM. An important limitation of the study are the self-reported GDM. Also, it is not clear how many years after GDM the patients were evaluated, nor is it clear during the 12 year follow up if the majority of the patients were evaluated every 3 years or if there was only one follow up visit in the majority of the studied women. Additionally, the study should be rechecked from a native English speaker, as it contains several mistakes.

R: Thank you for your comment. As you rightly mentioned, the diagnosis of gestational diabetes in our study was self-report. However, some studies showed that regardless of race/ethnicity or socioeconomic status, women accurately recalled whether they had gestational diabetes.

In addition the data about “how many years after GDM the patients were evaluated” did not collected in our study. This point were added to the study limitation. But

In addition, Seven hundred and thirty seven (92%) of the subjects with GDM, and 2283 (88%) of the participants in the non-GDM group had at least two follow-up visits. Also, 1894 (73%) and 657 (82%) of the subjects had at least three follow-up visits in non-GDM and GDM groups, respectively. These data were added to the material and method, participants section.

The MS were edited by native speaker.

Reviewer reports:

Giorgio Borretta (Reviewer 1): This prospective study evaluates, over a decade long follow-up, adiposity indexes trends in a large series of women with or without GDM history.

The study shows that women with GDM history, despite starting higher rates of obesity, in the long term gained better control of their weight and adiposity index than women without GDM.

It is conceivable that this arises from an improved awareness and weight control in GDM women. As recognized by the Authors, the main limitation of this study is the lack of data about lifestyle modifications, dietary habits and concomitant medications. Anyway, the paper is clear and well-written, I suggest to accept it in its present form.

R: we appreciate the reviewer for the comment.

Pavlina Andreeva-Gateva (Reviewer 2): This paper describes parts of the longitudinal TLGS study. Part of the results were already published, including a comparison between women with or without GDM, which were participants in this study - https://www.sciencedirect.com/science/article/pii/S0168822716307148?via%3Dihub. Obviously, the present paper gives more results, than the publication in the Diabetes Research and Clinical Practice 2017. However, I am wondering why it was not included as a reference. I would suggest to broader the discussion section in relation with this and other similar publications.

R: Thank you for your comment. The references were included and the discussion section were debate with similar publications.
Labels of the figure - what is this P-V interaction? Please, add an explanation.

R: P-V referred to P-value. It was corrected. As mentioned in the manuscript this p-value reveals whether the effect of a variable varies over the follow up study in GDM compared non-GDM groups or not. For example with respect to panel C, BMI demonstrated a significant increase in both GDM (P-value <0.001) and non-GDM P-value <0.001) groups. Also the interaction form (follow-up year ×GDM) was statistically significant, indicating that per visit changes of this variable over follow-ups was different between both groups. This means the groups do not develop similarly over time.

Panel C of the Figure - according to the Table 1, the BMI is 29 and 27 at the baseline, but according to the figure both values are slightly below 29? There is some mistake here.

R: in the panel C the mean of BMI at first follow –up visit were presented. But in the table the mean of BMI at the baseline were presented

Panel B - What does it mean "Probability of being central obesity?". How it was calculated?

R: This related to the odds of central obesity and it can be obtained from the following formula:

Odds of event = P / (1-P) that P is the probability of event. The stata output is in the form of the probability of the event but to interpret the result odds ratio is more practical.

Panel A - What does it mean "Probability of being obesity?". How it was calculated?

R: This related to the odds of obesity and it can be obtained from the following formula:

Odds of event = P / (1-P) that P is the probability of event. The stata output is in the form of the probability of the event but to interpret the result odds ratio is more practical.

Labels of the parts of the figure do not reflect what was presented. Please, see Panels D, E and F.

R: Figure 1 shows Generalized estimating equation (GEE) measures; Mean changes follow-ups between GDM and non-GDM groups assuming the interaction between time and the study group and also adjusting for age, BMI, and baseline parameters. A: obesity, B: central obesity, C: body mass index, D: lipid accumulation product, E: female visceral adiposity index, F: a body shape index.
Panels G and H are missing.

R: the order of figure were matched and the mistake was corrected.

Labels of the parts of the figure do not reflect what was presented. Please, see Panels D, E and F.

R: Figure 1 shows Generalized estimating equation (GEE) measures; Mean changes follow-ups between GDM and non-GDM groups assuming the interaction between time and the study group and also adjusting for age, BMI, and baseline parameters. A: obesity, B: central obesity, C: body mass index, D: lipid accumulation product, E: female visceral adiposity index, F: a body shape index.