Reviewer’s report

Title: The shape of the glucose response curve during an OGTT heralds β−cell function in a large Chinese population

Version: 0 Date: 01 Aug 2019

Reviewer: Simona Cernea

Reviewer's report:

This study evaluated the shape of the glucose response curve during a 3-h OGTT, as ways to evaluate β−cell function in a large Chinese population. The paper has the advantage of a very large data base, but there are also some concerns, in part related to methodology and part related to the presentation of results:


2. Background: lines 26-29: The OGTT is used to diagnose diabetes mellitus, not type 2 diabetes mellitus.

3. Material and methods: Subjects: the selection criteria of subjects included in the study are not clear. Were these individuals with or without DM, or both? The exclusion criteria c) suggests that patients with diabetes were also included. In this case, the study population should be restricted to subjects without previously diagnosed diabetes for various reasons, the main one being that the antihyperglycemic medication influence significantly the evaluated parameters (see for example: DeFronzo RA et al. J Clin Endocrinol Metab. 2014 Oct;99(10):3774-81.)

4. Material and methods: Blood sampling and OGTT: The standard OGTT for adults is performed with 75 g glucose. Were children included? If not, I suggest that only individuals receiving 75 g glucose be included in the analysis.
5. Material and methods: Blood sampling and OGTT: In order to evaluate the response curve after glucose loading, a more frequent sampling is necessary (at least 0, 15, 30, 60, 90, 120, 150, 180).

6. Material and methods: Classification of glucose tolerance status: The normal fasting blood glucose value is < 100 mg/dl (see ADA Standards of medical care in Diabetes 2019)

7. Material and methods: Classification of glucose curve shapes: "This was done with a plasma glucose threshold of 0.25mmol/L to minimize fluctuations in glucose concentrations" should be rephrased - is not clear what authors describe.

8. Results: Table 1. The abbreviation used in the table are not explained. The same for the rest. I suggest that the tables 1 and 2 could be presented as one.

9. Results: A figure with monophasic and multiphasic curves are missing. This is the most important information in the paper.

10. Results: Figures 2 and 3 should be presents together - in fact, data from figure 2 may be presented in the text.

11. Results: Data should be analyzed according to the time to peak glucose and insulin levels as well.

12. Results: I suggest adding results for the first 30 minutes (which actually approximates the first phase insulin secretion, in the absence of 15-min sample).

13. Results: tables 3 and 5 should be re-arranged, so that data would fit in raw

14. Results: The way data is presented should be improved.

15. English language should be substantially improved
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.

Unable to assess

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

Yes

Are you able to assess any statistics in the manuscript or would you recommend an additional statistical review?  
If an additional statistical review is recommended, please specify what aspects require further assessment in your comments to the editors.

I am able to assess the statistics

Quality of written English  
Please indicate the quality of language in the manuscript:

Not suitable for publication unless extensively edited

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