Reviewer’s report

Title: Association of insulin, C-peptide and blood lipid patterns in patients with impaired glucose regulation

Version: 2 Date: 17 Sep 2018

Reviewer: Fernando Bril

Reviewer's report:

In a large cohort (n=354) of patients with T2DM, prediabetes, or normal glucose tolerance (NGT), Wang et al assessed the changes that occurred in plasma glucose, insulin and c-peptide during an OGTT, as well as changes in the lipid panel. Their main findings were that patients with prediabetes and T2DM had similar abnormalities in the lipid panel, and that patients with T2DM had blunted insulin secretion during the OGTT compared to patients with prediabetes.

The main issues to consider are the following:

1- Lack of Novelty: what does this study add to the vast amount of literature on the metabolic response of patients with NGT vs. IFG vs. IGT vs. T2DM? This issue has been extensively addressed in the past and it is not clear why the authors believe their study is different from the prior literature.
2- Grammar: it should be revised to clarify many sentences along the manuscript.
3- Lack of information on medications: no information is provided regarding use of diabetes medications, insulin, statins, fibrates, etc. This is important as it can affect the results reported. Were any of these medications excluded?
4- More information regarding patient recruitment should be provided. Specifically, how were these patients recruited? Are they a good representation of the overall population?
5- Use of a glucose-lowering agent does not appear described in the manuscript as a criterium for diabetes.
6- No information is provided regarding the methodologies used to measure insulin and c-peptide.
7- Measures of insulin resistance were calculated based on fasting information (HOMA-IR or QUICKI) despite the fact that an OGTT was performed. Better IR measurements, such as Matsuda Index could be used.

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

**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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