Reviewer’s report

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

Version: 1 Date: 04 May 2018

Reviewer: Carlos Lorenzo

Reviewer's report:

1) Table 1
IR = Insulin resistance (>2.7)
The authors do not justify why they use this cut point. In addition, Insulin resistance (>2.7) results should be expressed in % and the proper statistical analysis should be not analysis of variance but logistic regression.

2) HOMA-IR in Table 1. HOMA-IR in IGR individuals is higher than in individuals with type 2 diabetes. These results suggest that IR is lower in type 2 diabetes than in IGR. This is in contradiction with previous studies on diabetes and insulin resistance. On the other hand, Matsuda, a measure of insulin sensitivity is lower in type 2 diabetes than in IGR.

3) In my previous Comments to the Author's, Comment #5 I stated the following: In addition, IFG and IGT may differ in terms of insulin secretion. Several indices of insulin secretion could be investigated and these results may be of greater interest that those currently presented in the manuscript. Authors' response: "We calculated other indices, but only HOMA-IR showed a significant difference (P<0.05) between IGF and IGT patients."
HOMA-IR, insulin levels, Matsuda IGI, ΔG30/ΔG30, triglyceride levels... are log-transformed (or other type of transformation) for statistical analyses in many studies. In addition, the analysis of measures of insulin secretion needs to take into consideration insulin resistance (adjustment for insulin resistance may be needed).

4) the reported results do not support the following conclusion in the Abstract: In clinical practice individuals with HbA1c values of >6.0% should be evaluated also by OGTTs. A similar statement is present in the conclusion's paragraph of the Discussion.

Are the methods appropriate and well described?
If not, please specify what is required in your comments to the authors.

Yes
**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.

No

**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:

Acceptable

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