Author's response to reviews

Title: Insulin resistance (HOMA-IR) cut-off values and the metabolic syndrome in a general adult population: effect of gender and age. EPIRCE cross-sectional study.

Authors:

Pilar Gayoso-Diz (pilargdiz@gmail.com)
Alfonso Otero-Gonzalez (alfonso.otero.gonzalez@sergas.es)
M Xose Rodriguez-Alvarez (cotepirlampo@gmail.com)
Francisco Gude (francisco.gude.sampedro@sergas.es)
Fernando Garcia (figarcia@medynet.com)
Angel M De Francisco (angelmartindefrancisco@gmail.com)
Arturo Gonzalez-Quintela (arturo.gonzalez.quintela@usc.es)

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Author's response to reviews: see over
Dear Editor,

Thank you for considering our manuscript “Insulin resistance (HOMA-IR) cut-off values and the metabolic syndrome in a general adult population: effect of gender and age. EPIRCE cross-sectional study“.

Enclosed please find our revised manuscript, (Ref. No.: MS: 3133073926855834) addressing the reviewer’s critiques. We have attempted to address all of the comments and suggestions provided by the reviewers. We believe that the manuscript has been greatly strengthened by these suggestions.

We hope that these revisions will meet with your approval, and we look forward to your review of our revised manuscript,

Kind regards,

Pilar Gayoso-Diz
Responses to reviewers.

Reviewer #1: Fumihiko Kamezaki

Reviewer's report:

This cross-sectional study examined the influence of age and gender on the proposed cutoff levels of homeostasis model assessment of insulin resistance in order to identify subjects with metabolic syndrome. The authors responded to most of the reviewer's concerns and the revised manuscript has been significantly improved from the previous submission. The reviewer still has several minor comments that should be addressed.

Discretionary Revisions:

#1. In the 13th paragraph of the Methods section, “.. 126 mg/dl” should be changed to “.. 7.0 mmol l⁻¹”.
Response: This change has been made.

People with diabetes (247, 10.0%), defined as a fasting plasma glucose ≥ 7.0 mmol l⁻¹

#2. When this study includes subjects with the use of antidiabetic drugs, the authors should show the number of the subjects and the details of such drugs (Methods, 14th paragraph).
Response: The text: “..an/or the current use of diabetes medications, were included.” has been replaced by “..an/or the current use of diabetes medications (32, 1.3%), were included.”

#4. Again, the authors should show the numbers of each age group in Table 3 and 4.

We analyze the effect of age on the accuracy of HOMA-IR when predicting the presence of cardio metabolic risk. As our results shows, there is a significant non linear effect of age on the diagnostic performance of HOMA-IR levels to identify cardio metabolic risk in non-diabetic women. To illustrate this effect in non-diabetic women, Table 3 shows the estimated AUC values for ages of 30, 50, and 70 years; and Table 4 shows the estimate HOMA-IR cut-off values for 30, 50 and 70 years of age in Spanish population.
Reviewer #2: Qiuhua Shen

The authors appropriately addressed most of the reviewer’s comments and the quality of the manuscript has been improved. However, changes for some of the comments were not reflected in the revised manuscript, although the authors claimed that the change has been made in their responses. There are still additional minor issues that need to be addressed.

ABSTRACT

1. Background: Ln2, add a period after “metabolic risk”;
Response: This change has been made.

Ln 4, change “describes” to “describe”.
Response: This change has been made.

The third sentence “To describe the influence of…” is incomplete. Please change it to “The purpose of this study was to describe …”.
Response: The text: “To describe the influence of age and gender in the estimation of HOMA-IR optimal cut-off values …” has been replaced by “The purpose of this study was to describe the influence of age and gender in the estimation of HOMA-IR optimal cut-off values …”

2. Methods: Ln 6, change “classified” to “classifying”.
Response: This change has been made.

3. Results: Ln2, please change “…to 2.05 take into account MetS components.” to “…to 2.05 taking into account of MetS components”.
Response: The text: “…to 2.05 take into account MetS components.” has been replaced by “…to 2.05 taking into account of MetS components”.

BACKGROUND

4. P3, Ln 7-8, the sentence of “However, no take into account the ability of proposed cutoff points to identify risk of clinically relevant outcomes.” is still somewhat confusing. Did the authors intend to mean that “However, no studies have examined the ability of proposed cutoff points to identify ….”?
Response: The text: “However, no take into account the ability of proposed cutoff points to identify ….” has been replaced by “However, no studies have examined the ability of proposed cutoff points to identify ….”

5. P3, Ln 9, change “being” to “been”.
Response: This change has been made.

METHODS

Specific laboratory determinations

6. P1, Ln 3, the kit used to measure fasting insulin level was not added.
Response: We agree with referee, in previous review document there was a mistake and the kit used to measure fasting insulin levels was not added.

The text: “Fasting insulin levels were measured using a radioimmunoassay (RIA) method” has been replaced with “Fasting insulin levels were measured using a radioimmunoassay (RIA) method (Coat A Count Insulin, Los Angeles, USA)”

RESULTS

AUC values of HOMA-IR by gender and diabetes status

7.P1, Ln6, the referenced table should be “Table 3”, instead of “Table 2”, after re-numbering the tables.

Response: This change has been made.

DISCUSSION

8.P5, Ln7-10, the same statement of “The consideration of the attendant risk of cardiovascular and metabolic diseases to establish this cut-off point would increase its clinical utility in identifying those patients in whom the presence of multiple metabolic risk factors imparts an increased metabolic and cardiovascular risk.” appeared three times in the manuscript, including the Abstract, Discussion, and Conclusions. Please re-write/paraphrase to avoid repeating the exact statements three times.

Response: The text: “The consideration of the attendant risk of cardiovascular and metabolic diseases to establish this cut-off point would increase its clinical utility in identifying those patients in whom the presence of multiple metabolic risk factors imparts an increased metabolic and cardiovascular risk.” has been replaced by “To increase the clinical utility of HOMA-IR values, we study its ability to classify those individuals with multiple metabolic risk factors.”

Table 1

9. Please add the actual numbers of subjects who had metabolic syndrome among women and men with or without diabetes, using ATP III and IDF criteria. For example, 11.1% (159), 14.9% (152).

Response: We have added the numbers of subjects who had MetS among men and women, with and without diabetes, using ATPIII and IDF criteria.