Reviewer’s report

Title: Gender-specific contribution of cardiometabolic index and lipid accumulation product to left ventricular geometry change in general population of rural China

Version: 1 Date: 18 Nov 2017

Reviewer: Chiara Rovera

Reviewer's report:

Thank you for giving me the opportunity to review your article. I read the paper with interest.

The authors have made a detailed analysis on a large population, deriving data from a wide epidemiological cross-sectional study of permanent residents in rural areas of China.

The main messages are clear: CMI and LAP are independently related to the probability of eccentric or concentric LVH, and the predictive powers of CMI and LAP in discriminating the presence of LVH are substantially stronger for females than males.

However, sometimes, statements are not always easy to follow and the text fluency should be increased.

Please find below some comments that I believe will help you to improve your manuscript prior to publication:

- in the abstract two abbreviations come into view without previous explanations (VAI and WC); you have to define the abbreviations.

- in the paragraph named "Definitions" there is a typing error: "Lipid accumulation product (LAP) is determined by using the following equation…"

- in the section "Statistical analysis", line 4, the sentence is clearer writing: "Characteristics were assessed in females and males using Student’s t or Mann-Whitney test…"
- in the section "Statistical analysis", lines 14-15, the portion of the sentence "...where three models were evaluated where potential confounding risk factors were progressively established" should be rephrased in order to better explain the concept.

- in the section "Results" at page 7, the sentences "In terms of echocardiographic parameters, the same pattern was found in IVST, PWT, LVWT, RWT, LVM, LVMI, which was consistently higher in individuals with concentric LVH. Those in the eccentric LVH experienced higher levels of LVIDD, LVEDV, LVESV, LVEDVI, and LVESVI than other group." are redundant and unnecessary, these characteristics being already included in the definition of concentric LVH and of eccentric LVH, respectively.

- the main messages should be strengthened in the section "Conclusion", which should be partially reworded (e.g. avoid the link to the distinction in eccentric and concentric LVH; better express the concept of the more predictive power of CMI and LAP in females).

In conclusions, I consider the technical content of the paper suitable for publication, after minor revisions.

**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.

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:

Needs some language corrections before being published

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