Reviewer's report

Title: Association of Alanine Aminotransferase Levels (ALT) with the Hepatic Insulin Resistance Index (HIRI): a cross-sectional study.

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Reviewer: Kazuki Mochizuki

Reviewer's report:

The manuscript entitled “Association of Alanine Aminotransferase Levels (ALT) with the Hepatic Insulin Resistance Index (HIRI): a cross-sectional study.” written by Gomes-Samano M et al is focused on association between ALT activity and insulin resistance. The idea for the manuscript is very good, however, I found many serious problems, in particular, in statistical methods. For example, parametric methods and non-parametric methods are included in same analysis, but the readers cannot understand which methods were used in each parameter. In my mind, the authors would be better to parametric analysis in addition that parameters with skewed distribution were converted to logarithm natural. In addition, the authors performed ANOVA and Kuraskall-Waris tests in Table 2. The analysis divided by quartiles is generally for observing tendency for dose dependency. Thus, I think that trend test is better. In addition, the conclusion of this study is “ALT levels are independently associated with HIRI in subjects with the MetS, IFG, IGT, and T2DM.” In general, ALT activity is a hepatic injury marker, and hepatic injury was observed in patients with MetS, IFG, IGT, and T2DM, even if these subjects were not taken drugs for hepatic injury. Thus, the author should be considered and assessed the possibility for hepatic injury, i.e., using ultrasonography. Or, the author may be assessed an independent association between ALT activity and insulin resistance from liver injury by the multiple liner regression analysis using other hepatic marker such as AST as a covariate. In addition, I found many typo in the manuscript.

Thus, I recommend the manuscript is re-submitted after correcting these serious problems.

Level of interest: An article of importance in its field

Quality of written English: Not suitable for publication unless extensively edited

Statistical review: Yes, and I have assessed the statistics in my report.

Declaration of competing interests:

I declare that I have no competing interests.