Reviewer's report

Title: TriGlycerides and High-Density Lipoprotein Cholesterol ratio compared with Homeostasis Model Assessment Insulin Resistance indexes in screening for Metabolic Syndrome in the Chinese obese children: a cross section study

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Reviewer: Stefano Zucchin

Reviewer's report:

Liang et al. Aimed to compare in a sufficient number of Chinese obese children the accuracy of TG/HDL ratio vs HOMA-IR index to define metabolic syndrome, according to IDF definition, and also by establishing the appropriate cut-off value for the ratio. They found that sensitivity and specificity were significantly better for TG/HDL ratio in each age group, gender and pubertal stage.

Major compulsory revision

The aim is simple and the study original, given the fact that TG/HDL ratio is increasingly used to define cardiovascular risk (as an alternative to the more complicated and debated definition of metabolic syndrome). I have only one important statistical concern: since elevated TG levels are part of the metabolic syndrome definition, there may be an obvious association between TG/HDL ratio and MS definition when compared to HOMA-index that is not directly part of the MS definition for children of age > 10 years. When the authors state that 'In our study the AUC-ROC values (higher than 0.8) of TG/HDL-C ratio were much more robust than HOMA-IR indexes and were not much influenced by the pubertal stage' it may simply reflect a statistical trick. I will ask the Editor for a statistician independent review.

Minor essential revisions.

Language and style should be revised extensively.

Background. 'To our knowledge, few studies have been investigated regarding the cutoffs between TG/HDL-C ratio and MS during the childhood'. Please cite and comment the studies.

Exclusion criteria. Which drugs can influence glucose or lipid metabolism in children?

Conclusion. ‘This study demonstrates that TG/HDL-C ratio for screening MS may be a better index than HOMA-IR in screening obese children and adolescents with pediatric MS’: this is pending.

Table 4 should be removed.

Level of interest: An article of importance in its field

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

Statistical review: Yes, but I do not feel adequately qualified to assess the statistics.

Declaration of competing interests: I declare that I have no competing interests