Reviewer's report

Title: Nine-year incident diabetes is predicted by fatty liver indices: The French D.E.S.I.R. study

Version: 1 Date: 14 March 2010

Reviewer: Janus Ong

Reviewer's report:

I. Major Compulsory Revisions

1. The indices used in this study still require validation in populations outside of the populations that they were developed from. In addition, the performance characteristics of the indices, the Fatty Liver Index in particular, leave room for misclassification considering a positive likelihood ratio of only 4.2 for predicting fatty liver.

2. The original reports for the two indices suggest cut-off scores for the diagnosis of fatty liver disease - a FLI >/= 60 and a NAFLD-FLS > -0.640. It is thus the understanding of this reviewer that the question the study wanted to answer was whether NAFLD as diagnosed using the two indices would be predictive of incident diabetes. An affirmative answer to this research question would be clinically relevant as screening for diabetes might be advocated in patients diagnosed with NAFLD. The analysis that would have been ideal would have been to divide the patients into those with NAFLD and those without NAFLD based on the cut-offs for both the FLI and the NAFLD-FLS. The two groups would then be compared as to the development of incident diabetes. I would submit that the results of the current analyses using quartiles are not at all surprising as these indices contain known predictors of incident diabetes such as triglycerides, BMI, and waist circumference for FLI and metabolic syndrome for NAFLD-FLS. In fact, results to the contrary would be difficult to explain.

3. In the calculation of the odds ratios for incident diabetes, it would be expected in the multivariate analysis that potential confounders of the association between the indices and incident diabetes be adjusted for. Table 1 shows in addition to the adjustment factors shown in Table 2, variables such as BMI, waist circumference, cholesterol levels were correlated with the FLI and thus should be included as adjustment factors.

II. Minor Essential Revisions

1. Biochemical measurements were conducted in several sites using different equipment. Are the results from these different sites comparable?

Level of interest: An article whose findings are important to those with closely related research interests
Quality of written English: Acceptable

Statistical review: No, the manuscript does not need to be seen by a statistician.

Declaration of competing interests:

I declare that I have no competing interests