Reviewer’s report

Title: Low Vitamin D Level Was Associated With Metabolic Syndrome And High Leptin Level In Subjects With Nonalcoholic Fatty Liver Disease: A Community-based Study

Version: 0 Date: 09 May 2018

Reviewer: Ronette Lategan-Potgieter

Reviewer's report:

Congratulations on a comprehensive study, for which I would recommend a change in focus (according to the aim of the study)

Language editing is highly recommended, although a certificate was provided.

Specific comments include

Line 1-83: The title: 'Low Vitamin D Level Increases the Risk of Metabolic Syndrome in Subjects with Nonalcoholic Fatty Liver Disease: A Community-based Study' does not align with the aim of the study "to evaluate the association between serum vitamin D levels and nonalcoholic fatty liver disease (NAFLD) parameters, including metabolic syndrome risk and hepatic steatosis". The classic question of which came first - the chicken or egg needs to be answered to prevent confusion between cause and symptom when not providing sufficient scientific evidence. A more 'conservative' title could be considered based on the findings of this study.

Revisit second sentence of methods in abstract - "All subjects participated in a demographic survey to exclude alcohol abuse, blood testing and abdominal ultrasonography (US)" - does not make sense without necessary verbs added.
The results: "Subjects with serum vitamin D deficiency or insufficiency had a higher risk for metabolic syndrome than those with sufficient vitamin D levels [deficiency vs. sufficiency, adjusted odds ratio (OR) =1.860 (95% CI=1.234-2.804), P=0.003; insufficiency vs. sufficiency, adjusted OR=1.669 (95% CI=1.237-2.251), P=0.001]. Similarly, subjects in the lowest quartile of vitamin D had a higher risk for metabolic syndrome than those in the highest quartile of vitamin D (OR= 2.792, 95% CI=1.719-4.538, P<0.001)" would make more sense if reported objectively as the difference in Vit D levels between the two groups. Cause is implicated, which is not explicitly indicated and explained as the case.

Only the last sentence of the results is linked to the aim - consider language editing. I observed that a language certificate was issued, but the manuscript is still difficult to read because of language errors and sentence construction.

The conclusion cannot be made from the results (first part of the conclusion) - can be seen as the other way around if biochemical background is not provided.

88-110: The explanation of a causal relationship between vitamin D and MS is not provided to support the motivation for the study.

114: add reference, method or accept normal aging?

116: serum study - please indicate for what?

116-125: - consider to rather list

Please check language (single, plural, addition of words, etc)

133: glucose? Total Vitamin D?

137: Consider to move to after the sentence starting in 138.

140-142 - first part of the study methods.

169: Were DM included/ excluded in study - indicate earlier in methods

172 - how was this applied in the study - quartiles or specific values used?

176 - just recheck recommendations - 88/89 cm / 35 in ?

191 - did the study include African American participants? - if the case, waist circumference reference value also needs to adapt.
210 - motivate and explain why adjustments were made for the specific confounders

211 - Sure about SPSS version - it is quite old?

214-218 - relate to information in inclusion/exclusion criteria

Please correct language….

224 - control or non-NAFLD group?

225-233 - not expected? Participants grouped according to symptoms will look different if looking at a syndrome with interrelated symptoms.

240-245 - the study corrected for factors included in the classification of MS - important to explain the interaction and role. Important to explain the production of vitamin D in the body with relation to adiposity to clarify results.

282-285 - This should be explained in the introduction to set the reason for the study.

289 - Important to discuss the link between leptin, body fat and vitamin D to prevent confusion if the study focus on this association.

300-301 - Please consider the link between adiposity and dermal Vitamin D production - in other words result vs risk?

329-330 - Should mention in methods section.

334-337 - Consider again the conclusion based on risk or result.

References - 2010 Institutes of Medicine recommendations for Vitamin D can be included.

Tabel 1 - careful for selecting two groups based on differences and then indicate p-values.

A different focus of this study would be of more value - reporting on the original aim of the study. The introduction should include much more background (biochemical) if the current focus of the publication is followed.
Are the methods appropriate and well described?
If not, please specify what is required in your comments to the authors.

No

Does the work include the necessary controls?
If not, please specify which controls are required in your comments to the authors.

Unable to assess

Are the conclusions drawn adequately supported by the data shown?
If not, please explain in your comments to the authors.

No

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I am able to assess the statistics

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Needs some language corrections before being published

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