Reviewer’s report

Title: Vitamin D, parathyroid hormone and metabolic syndrome - the PORMETS study

Version: 0 Date: 02 Aug 2017

Reviewer: Zaki Hassan-Smith

Reviewer's report:

The authors set out to characterize relationships between Vitamin D/PTH and components of the metabolic syndrome and to assess their prevalences in a Portuguese cohort. This was a sub-study of the PORMETS study (n=500 of 4096 in total study). There was a high prevalence of vitamin D deficiency. Statistically significant associations were seen between vitamin D status/PTH and metabolic syndrome markers. Notably serum PTH vs waist circumference; and serum 25OHD vs MetS, BP, TGs had negative associations. There was a high prevalence of vitamin D deficiency in the cohort.

Comments:

1. This is a potentially useful contribution to the literature - i.e. in characterizing prevalence of vitamin D deficiency in the Portuguese population and in documenting associations with components of the metabolic syndrome. I would suggest that a caveat is made to be clear that causality has not been addressed. The associations between vitamin D/PTH and markers of the metabolic syndrome could be explained by a factor such sequestration of vitamin D in adipose tissue with increasing fat mass.

2. It may be informative also to give proportions of subjects with deficiency according to IOM statement.

3. Has consideration been made to multiple comparisons and the potential for false discovery rate? In addition many of the associations seen are weak. Comment should be made on these points.

4. It would be interesting to make a brief comment on previous studies that shed light on potential mechanisms of the proposed link between vitamin D/ PTH status and metabolic syndrome.

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 recommend additional statistical review

Quality of written English
Please indicate the quality of language in the manuscript:

Acceptable

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