Reviewer's report

Title: Reduction of Parathyroid Hormone with Vitamin D Supplementation in Blacks: A Randomized Controlled Trial

Version: 2 Date: 26 July 2015

Reviewer: Robert RS Scragg

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This is a well-written manuscript of a recently conducted trial investigating the effect of varying doses of vitamin D3 supplementation (from 1000 up to 4000 IU per day) on plasma parathyroid hormone (PTH) levels in US blacks. The main finding is that PTH levels decrease in a dose-dependent manner with increasing daily doses of vitamin D. The study fills an important gap in the literature given the limited publications on this topic for African-Americans. A major strength of the study is its very high compliance (nearly 97%).

Major compulsory revisions

1. The manuscript is missing a CONSORT flow diagram. Nearly 80 participants from baseline Table 1 are missing from follow-up Table 2. More detail needs to be provided about the reasons for their exclusion in the second table. If these have been reported in a previous publication, this should be described in the text and referenced so that readers don’t have to go hunting for this information.

Minor essential revisions

1. Lines 97-98: the text in this sentence should be changed, or its references, as neither reference 13 nor 14 is an RCT of vitamin D supplementation, as implied by the text.
2. Lines 239-243: it would help readers if the p-values for the comparisons in this sentence (presumably >0.05) are added to the text so that they can be certain about this.
3. Line 278: presumably this should be ‘PTH’ which is suppressed, not ‘25(OH)D’.
4. Reference 21: missing volume and page numbers.
5. Table 1: abbreviations (BMI, PTH, 25(OH)D, HCTZ) should be footnoted so that readers don’t have to go searching through the text to find their full spelling.
6. Table 2: footnote abbreviations (as above).

Discretionary revisions

1. The authors may like to consider adding the following publication, which is the largest ever study on the association between blood concentrations of 25OHD and PTH (Valcour A, et al. Effects of age and serum 25-OH-vitamin D on serum parathyroid hormone levels. J Clin Endocrinol Metab. 2012;97:3989-3995). This
manuscript reported data from >300,000 patients in the US, and found no 
threshold in the association, between 25OHD and PTH, which supports the 
findings in the current manuscript.

Level of interest: An article of outstanding merit and interest in its field

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.