Reviewer's report

Title: Effects of vitamin D administration on cardiac natriuretic peptide levels in vitamin D deficient women

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Reviewer: Thomas J Wang

Reviewer's report:

This interesting brief report by Saadi and colleagues documents a reduction in Nt-proBNP concentrations with vitamin D administration in a moderately-sized sample of lactating women. The investigators also found a modest reduction in PRA of borderline significance (p=0.06). The manuscript is clearly written and the limitations of the study are nicely acknowledged. The principal limitation is the lack of a control group.

Major compulsory revisions

1. In both the introduction and discussion, the authors imply that the reduction in Nt-proBNP with vitamin D administration reflects an improvement in cardiac function. However, as they acknowledge, this conclusion is largely speculative given the lack of supporting echocardiographic or other cardiac functional data. Indeed, based on the experimental studies, changes in Nt-proBNP (and PRA) could mainly reflect direct effects on gene transcription without specific changes in cardiac function or structure. The authors should consider a more nuanced discussion of these various possibilities, which might have different implications when it comes to the hypothesis that vitamin D deficiency is a cardiovascular risk factor.

2. Basic information on enrollment criteria and demographics would be useful to provide so that readers do not have to rely on the reference. Also, although echo data are not available, the authors should provide other clinical information relevant to the cardiovascular system, at baseline and follow-up, including blood pressure, presence of diabetes, etc. These data could be provided in a Table. Levels of glucose, insulin, and hsCRP would also be interesting to see, if available, given the connections between the vitamin D axis, insulin resistance, and inflammation.

3. Do the investigators have any information on determinants of vitamin D status, including diet, sun exposure, and/or use of other supplements? There seems to be a substantial degree of vitamin D deficiency in this study sample.

4. The authors should note whether any differences (in Nt-proBNP or PRA response) existed between the 2 vitamin D arms.

5. More information should be provided regarding the statistical tests used. Nt-proBNP concentrations typically have a skewed distribution, and thus may be
less suited for standard parametric tests; did the investigators consider log transformation or non-parametric tests?

Discretionary revisions

1. Consider providing conversion from nmol/L to ng/ml in Methods or Figure legend.

**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.