Reviewer’s report

Title: Vitamin D levels appear to be normal in Danish patients attending secondary care for low back pain and elevated in patients with Modic changes: A cross-sectional cohort study of consecutive patients with non-specific low back pain

Version: 1 Date: 27 December 2012

Reviewer: Behzad Heidari

Reviewer’s report:

Dear Editor

The authors of paper entitled "Vitamin D levels appear to be normal in Danish patients attending secondary care.................. " intended to determine the relationship between vitamin D deficiency and simple back pain (BP) in a cross-sectional study. In addition several secondary aims including association between vitamin D and age, sex, BMD, Modic changes ... were also assessed. They found a significant inverse relationship between vitamin D and Modic changes but not with BP, and the authors concluded that Modic changes were protective of low vitamin D

Major compulsory revision

1- Simple BP should be defined.
2- Modic changes also require to be defined.
3- Introduction section should be shorten.

Methods

4- To determine the status of Vitamin D in BP it was required to include a control group without BP
5- Sample size does not seem to be adequate to detect a significant differences for several research questions of this study.
6- Details of statistical analysis for relationship or comparisons have not been presented
7- Discussion section requires to be revised. In regard to the - direction of relationship between Modic changes and vitamin D - Based on data presented in Introduction, it is also possible that sufficient vitamin D may be protective of Modic changes.

Minor compulsory revision

what is the difference between - degenerative spondylolistesis- and spondylolysis with spondylosis?
How the authors found variations of serum vitamin D variations over the investigation periods? Did they re-pitted serum vitamin D assessment for two or three consecutive months?

How the authors determined the relation between vitamin D and clinical symptoms. It is required to describe in Method section for example, whether patients with or without paresthesia were compared in regard to serum vitamin D?

**Level of interest:** An article whose findings are important to those with closely related research interests

**Quality of written English:** Acceptable

**Statistical review:** Yes, but I do not feel adequately qualified to assess the statistics.

**Declaration of competing interests:**

I have no competing interests'