Reviewer’s report

Title: Vitamin D levels appear to be normal in Danish patients attending secondary care for low back pain and a weak positive correlation between serum level Vitamin D and Modic changes was demonstrated: A cross-sectional cohort study of consecutive patients with non-specific low back pain

Version: 2 Date: 19 February 2013

Reviewer: Stewart Leavitt

Reviewer’s report:

I want to thank the authors for their very careful attention to my previous comments, and those of the other reviewers, and for their appropriate revisions of the manuscript. I believe that this study will make an important contribution to the literature on Vitamin D and pain, and I recommend its publication.

I would like to note that there is a range of serum 25(OH)D above “deficiency” that has been described in some consensus guidelines (eg, Holick et al. J Clin Endocrinol Metab. 2011;96[7]:1911-1930) as being “insufficient” -- specifically, 21-29 ng/mL (52.5-72.5 nmol/L). In that regard, the vast majority of subjects in this observational study fell below a level of what might be considered as “adequate” (>= 30 ng/mL, 75 nmol/L).

It is of consequence that LBP patients in this study with “deficient” Vitamin D levels (<= 50 nmol/L) did not appear to have distinguishing characteristics compared with subjects having “insufficient” levels (ie, those considered as “normal” in this study). There may be significant numbers of patients in whom LBP may emerge below a certain threshold 25(OH)D level, and the absolute extent of insufficiency/deficiency is a less critical factor. However, identifying that possibility or the subgroup of patients who might most benefit from Vitamin D therapy was not the purpose or design of this study.

As the authors note in their discussion section, going beyond observational designs, it is important to have randomized controlled trials to determine which persons with nonspecific LBP could benefit from Vitamin D supplementation. Along with that, it would be important to know if there is a minimum threshold of 25(OH)D required to achieve beneficial effects of such therapy in these patients.

Hopefully, further research along the lines of this current study also will take the next step and test effects of Vitamin D supplementation in the identified and carefully selected LBP population.

Level of interest: An article of importance 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:**

No financial or non-financial competing interests to declare.