Reviewer's report

Title: Association of back pain with hypovitaminosis D in postmenopausal women

Version: 2 Date: 5 February 2013

Reviewer: Bahar Sadeghi Abdollahi

Reviewer's report:

1- The manuscript needs Major Compulsory Revisions. Additional necessary statistical analysis are needed to avoid statistical bias in current interpretation.

2- This could be an article whose findings are important to those with closely related research interests. If the following questions and recommendations be answered and implemented in the script:

3- The question posed by the authors is not well defined. As the condition for NCT00088010 study is Osteoporosis and Postmenopausal condition. It is recommended to mention both conditions in title and methods (Osteoporosis and Postmenopausal).

4- The Paragraph references to Methods is not well described in abstract. Primary and secondary outcomes might be part of methods but not whole of it.

5- I have assessed the statistics in my report. Statistical review is necessary. The data are not sound. Data should be analyzed again. Odds ratio and related confidence interval should be calculated. Re-analyzing data by proper regression test is recommended to rule out the role of confounding factors.

- Mean age, Mean age of menopause, Mean weight of patients in each group plus standard deviation should be reported. Is there any statistical difference between two groups at the beginning of study?

- According to large number of subjects in each group the statistical difference is not clinically meaningful. To make a better sense of differences and related risk please give us Odds Ratio for all the items that are calculated by Chi2 in table 1 and 2. Include confidence interval for each Odds Ratio.
- How does the author exclude the role of a confounder like obesity for back pain?

- After including the age, age of menopause and weight please do statistical analysis again by the proper regression test. Present the suitable model.

6- The discussion and conclusions are not well balanced and adequately supported by the data. It is recommended to omit the following sentence:

This study opens up possibilities for vitamin D or a metabolite that plays its role, to be used as a therapeutic agent for back pain, requiring more prospective intervention.

The discussion and conclusion induce the readers to prescribe Vit D to decrease back pain. The study doesn’t support this opinion even as a suggestion.

7- Limitations of the work are not clearly stated. Including osteoporotic and osteopenic women is a remarkable limitation of the work and should mentioned.

Quality of written English: Acceptable

Statistical review: Yes, and I have assessed the statistics in my report.

Declaration of competing interests:

'I declare that I have no competing interests'