Reviewer's report

Title: Oxidative stress as a risk factor for osteoporosis in Mexican elderly

Version: 1 Date: 21 August 2007

Reviewer: Tuan V Nguyen

Reviewer's report:

General

This is an interesting study, in which the authors examined the association between oxidative stress (OxS) and the risk of osteoporosis. They found that 68% of osteoporotic subjects had OxS, and this prevalence was significantly higher than in controls (38%). This is an original investigation into an area that is still under-studied; therefore, the study represents a meaningful contribution to the literature of osteoporosis.

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Major Compulsory Revisions (that the author must respond to before a decision on publication can be reached)

There are some issues of concern that this reviewer thinks the authors can address in their next submission:

1. Although the authors state that this was a cross-sectional study, in reality it was a case-control study. The authors should clarify this point right in the Abstract.

2. It is much helpful to readers if the authors could provide more information on the study setting and inclusion/exclusion criteria used in the study. Please provide more information on the control subjects: how were they recruited or selected, where were they from?

3. It is not clear how the diagnosis of osteoporosis was made. Was the diagnosis based on femoral neck BMD (which is recommended by WHO)? Was the diagnosis made after the subjects had enrolled in the study?

4. The number of study subjects seems modest. How was the sample size determined? Please state the assumptions of sample size calculation (if there was a pre-planned consideration of sample size).

5. What is the reliability of OxS measurement?

6. What was the rationale for selecting the value of 3 for stress score? It is well-known that categorization of continuous data often results in loss of information. It is strongly recommended that the authors analyze the association between OxS and osteoporosis risk in their original scale rather than categorized scale.
7. The presentation of data can be improved. It is important to know whether the distribution of OxS was normally distributed before any analysis. Could the authors please provide a graph showing the distribution of OxS measurements? Please also provide a matrix graph of correlation between age, BMI and OxS.

8. The odds ratio for smoking seems to have a large standard error. How many smokers were there in cases and controls?

9. It is rather odd that the authors considered BMI>27 being “overweight” (Table 3). Please clarify!

10. Oxidative stress has been suggested to be associated with bone resorption. Did the authors measure bone resorption or bone formation in the study subjects. Without these data, it is perhaps difficult to interpret the biologic significance of the finding.

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Minor Essential Revisions (such as missing labels on figures, or the wrong use of a term, which the author can be trusted to correct)

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Discretionary Revisions (which the author can choose to ignore)

What next?: Accept after minor essential revisions

Level of interest: An article of importance in its field

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 interest.