Reviewer's report

Title: Evaluation of Easily Measured Risk Factors in the Prediction of Osteoporotic Fractures

Version: 1 Date: 29 March 2005

Reviewer: Alison Stewart

Reviewer's report:

General

This is an interesting study which applies the risk factors found in a previous study (Black et al, Osteopor Int 2001; 12: 519-28) to a large Canadian database. No new conclusions has been derived since all the risk factors assessed have been previously shown in many studies to be associated with fractures. The advantages of this study is that the data is derived from a tertiary care setting anc would be applicable to other clinical settings. However I have some reservations regarding the study.

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

The author's state that the CANDOO database consists of over 10,000 men and women, however data is only shown for 3426. The authors do not inform us why the remaining subjects were excluded and do not discuss any bias implications.

Subjects with multiple fractures were excluded - if the index fracture was included this would increase the numbers of fracture cases significantly. Can this data be added?

No information is given regarding the follow-up period. Can information regarding the length of follow-up and how follow-up was achieved be added to manuscript?

Fracture status was based on self-reports and x-ray confirmation. However no numbers are provided for this. If the majority of cases were self-reported this will introduce a bias since it has been shown previously that recall data is not very reliable and differs by skeletal site.

The Fracture Index on which the analysis is based also contains a total score (with or without BMD) but this is not used in this analysis. It would be interesting to identify the sensitivity/specificity of the total score in this database with regard different fracture types.

Why was hip, vertebral, wrist and rib fractures chosen? Many now accept that hip, wrist, vertebral and humeral fractures are "osteoporotic" fractures. Rib fracture are very difficult to confirm, but humeral fractures would be easier. Do you have data on fractures of the humerus?

T-score of the hip was included as a risk factor, however from Table 1 it appears that only 447 individuals had BMD assessment. Can you clarify this and make it clear in the manuscript that not all subjects had BMD assessment?

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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)

When giving the results of the multivariable regression it is stated that some risk factors were at "higher risk of developing a new hip fracture". These risk factors were not statistically significant. Can you make it explicit that these was simply a trend for higher risk, and these were not statistically significant.

In the figures can Family Hx Fx be changed to Maternal Hx Fx, as it is not family history but maternal history that has been used. The figures are also difficult to see especially the error bars. Can the figure background be changed so the data can be seen more easily?

Discretionary Revisions (which the author can choose to ignore)

What next?: Unable to decide on acceptance or rejection until the authors have responded to the major compulsory revisions

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

Quality of written English: Acceptable

Statistical review: No

Declaration of competing interests:

I declare that I have no competing interests.