Reviewer’s report

Title: The utility of clinical decision tools for diagnosing osteoporosis in postmenopausal women with rheumatoid arthritis.

Version: 1 Date: 24 October 2007

Reviewer: Tuan V Nguyen

Reviewer’s report:

General

The authors examined the prognostic performance of various clinical prediction rule (CPR) in the identification of RA patients with low BMD. They found that none of the 9 CPRs had AUC values above 0.80. Thus, the usefulness of the CPRs is uncertain.

This is an interesting study that addresses a relevant and important issue. However, there are a number of issues concerning the study design, analysis and interpretation that the authors should clarify in their next submission to enhance the validity and clarity of the study’s findings.

It should be noted that a recent meta-analysis of the OSTA score (B Rudd, Osteoporosis Int 2007) also reached the same conclusion, and this reviewer has explained why the score had low predictive values in an accompanied editorial comment. The authors may care to consult the meta-analysis.

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

1. The manuscript needs an abstract.

2. It is informative to provide some information on the study setting (eg catchment area, patients’ characteristics) and the time when the study was conducted. How were patients selected? Were they randomly sampled from a community?

3. Please clarify which DXA machine was used to measure bone mineral density in the study, and which reference database was used to make a diagnosis of osteoporosis. The authors’ definition of osteoporosis was based on either lumbar spine or femoral neck BMD (page 4) is not consistent with the WHO definition where only femoral neck BMD is used. This may require a re-analysis, but it is unlikely to affect the authors’ conclusion.

4. The authors should state precisely how did they compute the confidence interval of the area under the ROC curve (Table 3). Moreover, while this reviewer agrees with the authors’ comment (“none of the seven general scoring algorithms..."
were tested performed better than the others as assessed by ROC curve analysis” – page 5), they should formally perform a significance test for difference in the AUC between CPRs.

5. It is difficult to follow the numbers and their messages in Table 2. In fact, the table’s title (“Prevalence of low bone mineral density …”) is not really relevant because the table actually includes “normal” BMD. The authors should consider an alternative and clearer presentation.

6. In page 8, the authors state that “The use of CDT has been proposed for identification at those at risk of osteoporosis and fracture”, but in reality, these clinical prediction rules were designed to identify individuals with osteoporosis, not for predicting fracture. When they were examined for predicting fracture risk, the performance was poor (Nguyen et al, “Limited utility of clinical indices for the prediction of symptomatic fracture risk in postmenopausal women”, Osteoporosis Int 2004). Also, please check the English expression of the sentence.

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

Discretionary Revisions (which the author can choose to ignore)

What next?: Accept after minor essential revisions

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

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.