Reviewer’s report

Title: Prevalence of vertebral fractures in a disease activity steered cohort of patients with early active rheumatoid arthritis

Version: 2 Date: 23 May 2012

Reviewer: marijn vis

Reviewer’s report:

This is a very interesting study. It provides insight into the bone metabolism of RA patients.

This is of interest for everybody treating patient with RA. The authors did a very good job in investigating this interesting topic of fractures in early RA with aggressive targeted treatment.

- Major Compulsory Revisions

The main problem I have is with the statistics and the presentation of the results. The authors used 2 models (GEE and mixed models) to study relationships between vertebral fractures and DAS, HAQ and BMD. Maybe this is because I am not a statistician, but I find this very confusing, because it is unclear what the final model is and why 2 models are chosen.

For instance in the methods section it is written that bmd will be analysed using GEE and on the second page of the results third paragraph it is written that mean BMD predicts… in linear mixed models.

I would advise to use either linear mixed models or GEE or else explain why both are used.

The other major problem is with the lay-out of the results. They are too complex and messy.

They need to be tidied to clearly state what the outcome of this study is.

The interesting finding that patients with a fracture at 5 year follow-up had a higher disease activity during the study is hidden between other negative findings and less relevant findings.

- Minor Essential Revisions

In the results percentages are given for difference between certain subgroups, please provide confidence intervals of p-values.

In the discussion, please give some numbers for the occurrence of fractures in the healthy population. Also give a bit more information about the historical Ra controls.
I also feel that the discussion should concentrate more on the main outcome.

- Discretionary Revisions
Form the studies cited I cannot read that BMD change predicts fractures.

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

**Quality of written English:** Acceptable

**Statistical review:** No, the manuscript does not need to be seen by a statistician.

**Declaration of competing interests:**

'I declare that I have no competing interests'