Reviewer's report

Title: Beyond the assessment of radiological progression in rheumatoid arthritis -
The imaging of structural integrity

Version: 3 Date: 22 December 2014

Reviewer: Helena Forsblad-d’Elia

Reviewer's report:

Dear Authors,

This is an interesting manuscript studying the change in radiographic destruction by the Sharp score and by DXR (BMD, MCI, CT and W) after a mean follow-up of 22 months in RA patients treated with MTX or LEF. No change was found in the Sharp score while DXR-BMD decreased significantly by 4.3% in patients treated with MTX and by 1.4% in patients treated with LEF. However, since the patients are not randomized to be treated with MTX or LEF a comparison between the change in DXR between the treatment groups should be avoided.

Major Compulsory Revisions

1. Since I do not think that the title of the manuscript describes the contents I suggest a new title reflecting the contents.

2. This is not a randomized trial. Therefore, comparisons between the changes in radiographic destruction and in DXR variables between the treatment groups should be omitted. The changes within each treatment group tested with Wilcoxon signed-rank test can remain unchanged. It is written in the method section that the patients were treated with LEF in case of contraindications to MTX. Thus, there is a clear selection bias and therefore comparisons between the groups should be avoided.

3. DXR-BMD has previously been found to be related to laboratory measures of inflammation, for instance ESR. How did the inflammatory activity and DAS28 change in the MTX and the LEF group and was the change in inflammation related to the alterations in the DXR variables?

Methods

4. Patients on LEF had contraindications to MTX. Please describe which contraindications.

5. Was treatment with glucocorticosteroids (oral or injections) allowed? Please add the information in the methods.

6. Should the patients have a certain level of disease activity to be included? Please clarify in the methods.

Baseline data

7. The meantime from RA symptoms to diagnosis is given but information about
the variability, for instance as SD, is missing. Also, the time from diagnosis to be included in this study is missing. The variability of the mean observation period is also missing as well as the variability of the MTX dose.

8. The mean observation period is written to be 1.8 years in this section and in other sections of the manuscript 22 months. Please change to 22 months in the whole manuscript.

9. Please add information about the Sharp score and HAQ at baseline in table 1.

10. Please add information about the variability of some of the variables in table 1 where it is missing

Table 2 and figure 1

11. Please add information about the variability of the mean differences and the relative changes in table 2.

12. Change the contents of the description of the figure according to point 2 above.

Minor Essential Revisions

Discussion

13. Treatment with bisphosphonates and with HRT seems to have bone protecting effects also some time after discontinuing with the treatment (in particular bisphosphonates). This can be mentioned in the discussion since it is only written in the method section that intake of bisphosphonates or HRT was not allowed during the study period.

Discretionary Revisions

14. Table 1 – Rheumatoid factor instead of Rheuma factor

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

Quality of written English: Needs some language corrections before being published

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