Reviewer's report

Title: Early increase in serum-COMP is associated with joint damage progression over the first five years in patients with rheumatoid arthritis

Version: 2 Date: 16 April 2013

Reviewer: Peter Junker

Reviewer's report:

This is an interesting and clinically relevant study showing, that radiographic progression can be predicted in newly diagnosed rheumatoid arthritis from S-COMP changes between baseline and 3 months after initiation of synovitis suppressive treatment. By this approach, inter-individual variations in S-COMP can be partially overcome. The study was conducted on the well-known BARFOT Early RA Cohort, and the prediction model is well described with due reference to current laboratory standards and clinical studies.

I have the following minor comments:

1. P6: Reasons for non-availability of serum samples/radiographs should be mentioned considering that this subset comprises around 25 % of the total number of candidate cases. It is stated, that these 124 patients did not differ from those included upon inclusion – were there any differences regarding treatment or subsequent course of the disease including X-ray findings at 5 years?

2. Was blood sampling standardized with respect to e.g. physical activity?

3. In order to better assess the possible significance of the different Prednisolone doses between groups, please consider to calculate cumulated Prednisolone dose at the individual level in all 3 groups.

4. P5: The authors have previously reported that single high COMP S-levels are associated with progressive disease in RA. Were there any associations between baseline COMP and radiographic progression in the subsets defined in this study?

5. P7 and P10: Any clinical or laboratory/X-ray associations with follow-up COMP at 6, 12 and 24 months should be described in a little more detail or at least be commented upon in the discussion.

6. Normal range of S-COMP should be included.

7. The authors rightly discuss the somewhat surprising finding, that COMP change was associated with erosion score rather than joint space narrowing. Since RA is a systemic disease and since cartilage is a major source of circulating COMP, the authors should consider also presenting joint counts in addition to DAS28. Associations between COMP and total joint counts may allow for a more detailed interpretation of the COMP-X-ray findings.
8. P11: It seems reasonable to add a brief comment on the discrepancy between inter-group COMP and radiographic changes vs. comparable clinical outcomes.

9. Minor language revision is recommended.

10. The introduction could be somewhat shortened.

**Level of interest:** An article of importance in its field

**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.