Reviewer’s report

Title: Baseline new bone formation does not predict bone loss in ankylosing spondylitis - 10-year follow-up.

Version: 3 Date: 12 January 2011

Reviewer: Jesus Garrido

Reviewer’s report:

1. Unless tests are conducted to maintain the assumption of Gaussian distribution, with the small sample size, n = 15, would be better using median and 1st and 3rd quartile as descriptive statistics than mean and standard deviation.

2. Assumed that a parametric analysis is right, the T test used could be replaced with advantage by a 2-way ANOVA with a within-subjects factor (time) and a between-subject factor (group). The paragraph

“In spine QCT a statistically significant (p = 0,001) decrease of bone density (change±SD: 18.0±7.3) was observed, and it was universal across all strata (fig 1). There were no clear-cut trends across strata in DXA that would resemble those noted in spine QCT. In spine DXA, a significant BMD change was noted (p = 0,0009) with trend towards increased density” (change±SD: -0.15±0.14). Neither neck nor Ward DXA changed from baseline to follow-up.”

claims no differences between groups based on visual inspection, when it is possible to develop the corresponding hypothesis testing. The 2-way ANOVA would test not only the effect of the time, but also the effect of group and interaction between both factors on dependent variable.

3. The paragraph

“The mean BMC, both at baseline and follow-up was significantly lower (p=0.02 and p=0.005, respectively) in advanced group (77.2±21.5 and 55.4±18.9 mg/cm3, baseline and follow-up, respectively) as compared to early group (113.6±31.7 and 99.8±31.1 mg/cm3, baseline and follow-up, respectively).”

suggests a time effect on BMC as well as a Radiological severity. However, it is not clear if there is an interaction effect time X Radiological severity on BMC, this is, a different effect of time on BMC pending on the Radiological severity group. Again, this hypothesis should be tested by a 2-way ANOVA.

4. Multiple regression models should be described in more detail.

Level of interest: An article of importance in its field

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'