Author's response to reviews

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

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Author's response to reviews: see over
Dear Dr Norton,

Attached, please find our itemized answers to queries of the Reviewer 2, regarding our manuscript titled “Baseline new bone formation does not predict bone loss in ankylosing spondylitis - 10-year follow-up”

We are grateful for the opportunity to amend our manuscript and sincerely hope that after revision it can be considered further.

We look forward to hearing from you,

Sincerely

Mariusz Korkosz

Response to Reviewer 2 (Jesus Garrido) comments:

We thank the Reviewer for stimulating comments. We do admit, that previously we misunderstood the query regarding the time*interaction. Below, we answer the Reviewer’s queries, based on the suggested approach.

1) We did test the assumption of normality. We applied the Shapiro-Wilk’s test as applicable to small sample sizes. Based on Shapiro-Wilk’s test, we could not reject (all p >0.08) the hypothesis of the normality of distributions of studied variables.

2) We corrected the table according to suggestions

3) We applied the two-way ANOVA as specified by the Reviewer. We did not find the time*BMC stratum interaction. The baseline BMC strata did influence only the BMC itself. We included a following mention of that in the text.: Additionally, to test the between-subject (BMC baseline strata) differences in studied variables, we fitted the two-way ANOVA models. We found that the baseline stratification by BMC significantly influenced the BMC values both at baseline (p<0.0001) and at follow-up (p=0.0009), but had no impact on the indices derived from DXA (all p >0.07). We found no interaction between baseline BMC stratum and time-related change in all studied variables (all p >0.31).
4) Based on observed means, standard deviations and correlation between baseline and follow-up values, we applied formal power calculation. Assuming 5% alpha, observed correlation of > .8, and the naturalistic means and standard deviations, we had >90% power to detect 20% difference in the within-individual variation of BMC. However, in the discussion we added a sentence stressing the possible bias that might arise due to low numbers in our sample:

*Despite of the relatively small group, we had >80% power to detect 20% difference in the BMC from baseline to follow-up, with the 5% significance. On the other hand, we are aware, that due to moderately-sized sample size the results we obtained must be considered with caution.*

5) Likewise, we applied the two-way ANOVA to check for the possible time*X-ray score interaction. Again, we found no such interaction. We changed a sentence in the results by adding:

* p for ANOVA-based X-ray syndesmophyte scoring* time interaction =0.39).

6) Following advice from Reviewer 1, all analyses were repeated after exclusion of the outlying (see Fig 1) observation. This yielded confirmatory results. We included a mention of that as part of our response to Reviewer 1’s comments.