Reviewer's report

Title: Early predictors of response and drug survival in ankylosing spondylitis patients treated with infliximab

Version: 2 Date: 22 September 2014

Reviewer: Angelo Gaffo

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This manuscript offers useful information about the effectiveness of one TNFa antagonist (infliximab) in AS. The value of the analyses is mainly in trying to identify those patients in which treatment survival will be shorter and which factors differentiate these patients from those in which treatment survival is longer. Factors identified included sex, prednisone intake at baseline, persistent CRP elevation, and persistently high measures of disease activity.

Although there is scientific value and novelty in the results of the analysis, I think the manuscript is still not ready for publication and multiple improvements are necessary. My suggestions and observations follow:

1. My main observation is with the use of quotations in the word “early” in the title and within the text. What do the authors mean by using these? Is it that these are not really early predictors of response? I find this very strange and probably the authors should leave the quotations out or change the title altogether to reflect what they really mean. (major compulsory)

2. Page 3: describes the aim of the study as “to evaluate the efficacy, safety and long term durability….”(major compulsory)
   a. Besides the “early” word mentioned in (1) I also have the following question: is this an efficacy or effectiveness analysis? To me the latter is more likely, as the authors are reporting the experience with infliximab outside of a rigid RTC protocol (this is a retrospective description). The authors themselves mention in the introduction: “The results need… to be confirmed….by patients’ real life experience” which speaks about an effectiveness study coming next.
   b. Are the early predictors being analyzed of disease outcome or treatment discontinuation?

3. Page 3, background section, first paragraph: “Furthermore in some cases…..so requiring specific intervention” (minor essential)
   a. The sentence makes little sense to me.

4. Page 3, background section, first paragraph: “Until recently……” (minor essential)
   a. TNF antagonist have been available for use in AS since around 1998, so the statement is not accurate

5. As patients who entered the cohort after 2006 were prescribed anti-TNF
treatment under a different set of recommendations, was there a difference in response between those before and after 2006? Where these groups different in any other way? Was the rate of discontinuations the same? (minor essential)

6. The statistical analysis section in the methods should have been more detailed: I did not see what did the authors wanted to compare with what to obtain answers in the main study aims of treatment survival, effectiveness, safety, and predictors of response. (major compulsory)

7. The results and discussion sections are extensive, disorganized, and quite hard to read. In several section they spell results presented in tables which is quite redundant, they do not highlight the main results, the discussion section also presents results instead of discussing those. (major compulsory)

8. Discussion, page 9: “The fall in CRP, considered the inflammatory marker…. " (minor essential)

a. What does “considered the inflammatory marker” means? Is the sedimentation rate not an inflammatory marker?

9. The discussion, notably, lacks a study limitations section. I offer some suggestions: (major compulsory)

a. This study had a small population size
b. Because patients needed to fulfill New York criteria, it is limited to individuals with relatively advanced disease, and results do not apply to those with early, non-radiographic AS
c. Secular trends in practice (before and after 2006) can affect patient outcomes.

10. On this same line (8), a study strengths section would also be useful. Why is your study unique or original? (minor essential)

11. The last sentence in the discussion: “It is important to underline…. "(minor essential)

a. Makes little clinical and grammatical sense (“has a value greater”?) Please revise

12. Figures and tables were for the most part useful. Table 2 had formatting issues, consider decreasing number of decimal points. Figure 4 needs more explanation in the legend. (discretionary)

13. The abstract presents results in the conclusion section. (minor essential)

14. With all due respect, there is room for improvement in English language vocabulary, grammar, and syntax. For example: “discontinuers” is not an English word. Consider extensively revising the manuscript for this. (major compulsory)

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