Reviewer’s report

Title: Impact of Tumor Necrosis Factor Inhibitors and Methotrexate on Diabetes Mellitus Among Patients with Inflammatory Arthritis

Version: 1 Date: 27 Apr 2020

Reviewer: Anna Antony

Reviewer's report:

Thank you for the opportunity to review your paper. It was interesting and well-written. I have the following comments:

1. Abstract

- Is there a reason that the p-values have not been reported in the abstract?

- I may be missing something, but the abstract states that patients with a diagnosis of DM AND/OR a HbA1c of ≥7% were included while the methods section states that patients with a diagnosis of DM AND a HbA1c of ≥7% were included?

2. What was the mean/median HbA1c at baseline in the DM criteria group vs. the primary analysis group?

3. Is there a reason why the primary analysis was not conducted in patients who met "DM criteria" and had an inadequately controlled HbA1c? What proportion of the "DM criteria" patients had a HbA1c that was ≥7%?

4. Is there a reason that baseline PNL was not included as a covariate in the primary analysis as an effect modifier?

5. "These findings support the concept that modulating inflammation associated with inflammatory arthritis may have off target benefits regardless of the therapy" "This study found no compelling evidence for a difference in the effect between TNFi and MTX, suggesting similar treatment effects."

- The fact that there was no change in the TNF and MTX groups when those on PNL were excluded, particularly given the high numbers of patients on PNL in the former groups is concerning.

- The fact that prednisolone use has not been accounted for in the analysis probably warrants highlighting in the abstract + discussion + conclusion, as this would temper the suggestion/the risk of the reader assuming that the effects seen in the TNFi and MTX group are related to TNF/MTX.
6. Re: supplementary material, table 1: All pts in the Metformin group were already on a baseline drug for their diabetes?

7. Was there a consideration re: comparing the MTX and TNF groups to a group of patients with IA and DM that had NO change in their treatment? Were the numbers too small?

Are the methods appropriate and well described?
If not, please specify what is required in your comments to the authors.

Yes

Does the work include the necessary controls?
If not, please specify which controls are required in your comments to the authors.

Yes

Are the conclusions drawn adequately supported by the data shown?
If not, please explain in your comments to the authors.

No

Are you able to assess any statistics in the manuscript or would you recommend an additional statistical review?
If an additional statistical review is recommended, please specify what aspects require further assessment in your comments to the editors.

I am able to assess the statistics

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