Reviewer’s report

Title: Trends in diagnostic prevalence and treatment patterns of male and female ankylosing spondylitis patients in the United States, 2006-2016

Version: 1 Date: 21 Apr 2019

Reviewer: Nurullah Akkoc

Reviewer's report:

This study assessed the annual AS diagnostic prevalence in a US adult population using the IBM MarketScan® for the period from 2006 to 2016 based on the ICD diagnostic codes for AS. The authors found quite a low prevalence estimate for AS (0.09% in 2016), which is considerably lower than the previously reported diagnostic prevalence of AS using another US population registered in another database.

The authors did not attempt to test the validity of their approach and provided no data for the sensitivity and specificity of these ICD codes for a true diagnosis of AS. Therefore, the validity and reliability of the reported prevalence estimates are highly uncertain. It is very probable that some of the patients who were using TNF-inhibitors actually might have had nr-axSpA, rather than AS, but were recorded with a diagnostic code for AS to meet the insurance coverage criteria, since nr-axSpA is not an approved indication for anti-TNF treatment in the US. This may have partially contributed to the increase in the rate of the use of TNF inhibitors, as well as in the prevalence of AS, diagnosis codes over the study period.

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

No

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

Unable to assess

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.

Not relevant to this manuscript

**Quality of written English**
Please indicate the quality of language in the manuscript:

Acceptable

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