Reviewer’s report

Title: MiR-146a G/C rs2910164 variations in South African Indian and Caucasian patients with psoriatic arthritis

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Reviewer: John Bowes

Reviewer's report:

The authors present results from a case-control association analysis of a SNP (rs2910164) in patients with psoriatic arthritis and healthy controls recruited from South African Indian and Caucasian populations. They report a significant allelic association with susceptibility to PsA; in addition they present multiple associations to laboratory biomarkers and perform stratified subgroup analysis based on HAQ, sex and smoking status within the case group.

The manuscript is well written and all results are clearly presented, however I have a number of concerns that affect the interpretation of the presented results:

* My main concern relates to the small sample size and the fact that these samples are recruited from two ethnic groups. The concern arises from the fact that the proportions of these ethnic groups differ between the case and control groups (leading to potential population stratification). Therefore if the minor allele frequency (MAF) of rs2910164 naturally differs between these two populations this could result in the observed statistical association with case/control status. The authors should demonstrate that combining data on these two populations does not result in confounding. Simply presenting the MAF by population and case-control status would be helpful as a starting point, as would including the ethnic group as a covariate in the analysis.

* Following from this first point; the subsequent analysis of clinical parameters could also be confounded by population stratification. It is unclear from tables if any of the tested clinical parameters differ between the two ethnic groups, which in the presence of a differing MAF
between the groups could result in a false positive association. This information needs to be presented.

* The stratified sub-group analyses presented in tables 4, 5 and 6 seem excessive given the small sample size (n=117) with no attempt to correct for the number of tests (n=72). It is not clear from the tables how many counts are in each cell. A reader may be more confident accepting a significant association if they could see it was derived from a comparison of groups with a reasonable sample size.

**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.

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

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

Acceptable

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