Author’s response to reviews

Title: Alcohol consumption is associated with lower self-reported disease activity and better health-related quality of life in female rheumatoid arthritis patients in Sweden. Data from BARFOT, a multicenter study on early RA.

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Author’s response to reviews: see over
Covering letter revised version

Thank you for considering this revised version of our manuscript. Besides the comments from reviewers we have also taken comments from the editor into account and for example changed the title, so it no longer claims an association to inflammation, but self reported outcome measures.

Reviewer 1

Thank you for valuable comments. We have considered them all and done some corrections to improve the manuscript. We also hope that our answers below will clarify.

1. We do agree that this is a cross-sectional study and that it by the design not is possible to conclude cause and effect with regard to alcohol and RA activity. We do this clear in the discussion and it is discussed already in the second paragraph. We also conclude that we see an association and not that there is a certain direction in cause and effect. We have changed all places were words such as “predictive” were used. We do however find that the use of “association” is the common way of presenting this kind of relationship from cross-sectional studies, with no definitive direction.

2. The stratified analyses where done in collaboration with an experienced biostatistician and the main reason was to be able to show differences in subgroups. The differences between sexes with regard to alcohol consumption could not be shown without a stratified design. We do however then study associations in multivariable models (now also stratified on sex), and have added three tables that highlights these findings.

3. The use of a dichotomized outcome is mandatory for the logistic multiple regression, and we also found that it made the stratified analyses more comprehensible. There were also issues with that most explanatory variables were of ordinal or nominal character and not continous.

4. Selection bias is a problem and it is now discussed in the paragraph on limitations in the end of discussion section. It is however not a deliberate subset of the study population. All living patients in the cohort were invited and all who responded were included.

5. We have discussed the merging of the tables 1 and 2, and also confirmed with the editor that they should be left as two tables.

6. We have gone through all passages where “positive” are used and made clear what it means.

7. We are not able to adjust for baseline disease severity since this is a cross-sectional study based on a questionnaire several years after onset of the disease. Baseline data are only used in the analysis of those not responding.

8. The issue of multiple testing is important. We have not done any formal Bonferroni correction, but the main results in the many univariate stratified analyses are based on findings with p-values of down to 0.0001, allowing for 500 tests. The findings are also consistent over several outcome variables.
Reviewer 2

Thank you for valuable suggestions to improve our manuscript.

1. A good comment and we have decided to use the term hazardous drinking instead of heavy drinking, since this is the term used by WHO. The cut-off is based on risk for drinking problem. The used cut-offs are however higher than in some of the literature and are based on revised recommendations. If we should use another cut-off it would have been even lower.

2. We now address the limitation of not having a physician derived measure of disease activity.

3. DMARDs and biologic use were merged in the analyses due to that they showed the same pattern and that it should be too many groups to compare. The text is now revised to be more consistent with this, omitting information on treatment that not were derived from the questionnaire.

4. We only used information from the questionnaire and could not control for other variables and those derived from this. This is of course a limitation with this cross-sectional study.