Reviewer's report

Title: Prevalence of Metabolic Syndrome in patients with Rheumatoid Arthritis and its determinants

Version: 2 Date: 12 December 2012

Reviewer: Joshua Baker

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Overall comments:
An interesting problem in RA that deserves more study.

Major: This is a relatively small study, which is a concern because it is being proposed as a “prevalence” study. However, a study of this kind, at a single center and with a relatively small number of subjects is at risk for selection bias. Generalizability is also a question, given that the study is performed in Morocco. In other words, I suspect the prevalence in other countries would be highly variable. This should be emphasized in the manuscript

Methods

Major: Study selection- this could be more clearly defined. How were patients identified? From what practices? Were there exclusion criteria? More information on how the control population was defined would also be helpful. How were they identified? Were there differences in the geography or socioeconomics of the clinics for RA/controls?

Major: Metabolic syndrome definition- It’s clear that the authors used a number of methods to define metabolic syndrome. What could be more clearly delineated is how the components were defined. For example- how was “hypertension” defined? What was available in terms of fasting glucose?

Results:

Overall the results are not particularly novel, although I doubt there is literature in the Moroccan population.

Minor: Frequency of metsyn- concern is selection bias here, though I believe the results. The variation in prevalence based on the definition is interesting- however I would avoid the terms “under/over estimation” since we don’t know what is truth.

Minor: It may be interesting to see how the different components of the metabolic syndrome are affected by different exposures. For example, I wonder if prednisone use is primarily associated with glucose or with weight. In addition, it might be interesting to evaluate whether different RA factors are associated with a greater number of components of the metabolic syndrome in ordinal
regression. Finally, it would be interesting to know if there is one component driving the difference between RA and controls (i.e., weight).

Major: The finding that glucose, SBP, and lipids were higher in Metsyn is not important and could be removed from the results (these are characteristics of the Metsyn).

Major: Linear regression models might help better characterize some of these associations. For example, was the association with ESR independent of age (which is associated with higher ESR)? Same for the HAQ. Is the HAQ score associated with metabolic syndrome simply through an association with BMI? Is the effect of prednisone independent of BMI? A table with the final regression model and some explanation of how that model was developed would be helpful.

Discussion

Major: The authors appear to promote their study as a prevalence study. While they appear to be the first to study Metsyn in RA among Moroccan subjects, I’m not sure that I would intimate that this is representative of any larger population. I think the “prevalence” data should be downplayed given it is based on 120 clinic patients.

Major: The associations between ESR and Metsyn are not convincing, given that ESR can be affected by a number of comorbid conditions (renal disease) as well as age. Furthermore, metabolic syndrome is an inflammatory condition, and thus ESR may be elevated to some degree by the presence of Metsyn. I think a greater discussion of this association and the limitations of a cross-sectional analysis should be included.

Major: An expansion of the discussion of the overall limitations is necessary. The authors should acknowledge that they are likely to suffer from selection bias and/or may not be generalizable to the general population, even within Morocco (i.e., their selected study sample may not be representative of all Moroccan patients with RA).

Level of interest: An article of limited interest

Quality of written English: Acceptable

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.