Reviewer's report

Title: A cross-sectional analysis of the relationship between uric acid and coronary atherosclerosis in patients with suspected coronary artery disease in China

Version: 2 Date: 31 March 2014

Reviewer: Angelo Gaffo

Reviewer's report:

This is an interesting article, with a sound hypothesis and research question. Their database and study population is interesting. Their methods are good. I have comments, which I hope can improve the manuscript.

Major compulsory

- The title describes the study as cross sectional, and I agree with that from reviewing the methods. However, the methods start by calling the study “prospective”. Probably the prospective element was in how the patients were recruited but I would correct the methods section.
- What was the rationale for excluding patients with known CAD from this analysis?
- It is unclear at different moments which analyses are done using quartiles for the whole population or sex-specific quartiles. I would review the verbage throughout the manuscript to make this as clear as possible.
- The discussion does not flow well, in my opinion. Starts with a summary of the results, which is good but then the authors dwell in why they used CCTA and not CAG which I find unnecessary. Later, I find very little in the actual meaning and implications of their results. I appreciate their contrast with prior published data and would add data published also using IMT measurement by US and its association with uric acid levels.
- Please review the paper, mainly the discussion, for English grammar and syntax. Many table titles also need to be reviewed. Some sections in tables lack capitalization and others are misspelled (“Multivariate”)

Minor essential

- The verbage where the patient exclusions are described is confusing. Please consider writing this paragraph (in “Study population”) more clearly. A CONSORT type diagram might be helpful. Also, how where the excluded patients different from the included population?
- Is always useful in these uric acid epidemiology studies to have a brief description of the uric acid measurement method. Was it uniform throughout the study enrollment period?
- The statistical modeling section is brief: was goodness of fit for the data
measures? where the final variable tested for collinearity or interaction? How missing data (if any) was treated?

- The fact that uric acid quartile progression was correlated with the proportion of CACS of 0 but also >10 in some analyses seems contradictory. Do I understand the results well? How would this apparent contradiction be explained?

- I find quite interesting that, mainly in women, the urate quartiles fell almost entirely below the accepted hyperuricemia thresholds (<404) lending support to the hypothesis that this might be an unimportant concept for associations other than gout.

Discretionary

- The authors might consider adding a line to their tables and graphs in how to convert international to metric units (divide by 59.48) to help readers that (like me) live and think in metric units.

- Where the two experienced radiologists and cardiologist reviewing the images paper authors (can identify by initials).

- Although I appreciate the attempt to be throughout with results reporting, the number of tables+figures might be excessive for this type of paper. The authors might consider consolidating some tables (mainly those with negative results = men) or leaving some only as supplementary material.

Level of interest: An article whose findings are important to those with closely related research interests

Quality of written English: Needs some language corrections before being published

Statistical review: No, the manuscript does not need to be seen by a statistician.

Declaration of competing interests:

I have received compensations from Cymabay, which develops a drug to reduce uric acid with the goal of treating gout.