Reviewer's report

Title: The association between serum uric acid levels, metabolic syndrome and cardiovascular disease in middle aged and elderly Chinese: results from the DYSlipidemia International Study

Version: 2 Date: 26 March 2015

Reviewer: Tony Merriman

Reviewer's report:

This cross-sectional observational study adds to the already extensive literature describing association of hyperuricaemia with aspects of the metabolic syndrome, although there was an inverse relationship with DM and fasting glucose (consistent with previous reports).

Major essential revisions

1. The discussion on page 11 is based on the assumption that urate is causal of InsR, MetS and CVD. It is simply not possible to make this assumption on the basis of observational data. These two paragraphs should be deleted and the authors should, rather, discuss the limitations of the study in making causal inferences. They definitely need to discuss and cite Mendelian randomization studies showing no evidence for a causal link between urate and prevalent heart disease (Palmer et al BMJ 2012 and Kleber et al JASN 2015). Regarding beneficial effects of urate lowering by allopurinol, these could be mediated by the inhibition of xanthine oxidase. Finally, there may be important confounders (for eg dietary fructose), that are unmeasured and therefore unaccounted for, that could explain the observational relationship between urate and MetS and CVD.

Minor essential revisions

1. Please change the final sentence of the abstract to read: "Elevated SU levels were positively related independently of measured confounders to CHD and HF."
2. In plasma/serum urate is present in the ionic form. It is only in the acidic environment of the urine that it is present as uric acid. The authors should therefore refer to urate (rather than uric acid) throughout.

Level of interest: An article of limited interest

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 declare that I have no competing interests