Your paper describes an observational cross-sectional study examining, as its primary aim, the association of lowest inpatient serum sodium with mortality as judged by discharge diagnosis in patients admitted to a large metropolitan tertiary hospital in China. Medical record review of cases with lowest serum sodium <120 was undertaken. Comorbidities were obtained using ICD-9 codes.

I would like more clarity on the hypothesis for the study. Is the hypothesis that serum sodium, potentially modified by comorbidity, treatment effects in hospital, as well illness effects, is associated with mortality? My major concern is the use of "lowest serum sodium" in the hospital admission as the exposure of interest. By selecting this, the association of serum sodium with mortality is likely to be modified by treatment effects whilst in hospital. There is no specific justification to use this measure, rather than serum sodium at admission (as used in other papers, referenced in this study). Characterisation of the timing of this measure in relation to the duration of hospitalisation, and for those who died, time period prior to death, would assist in working out if this measure is likely confounded by effects of the hospitalisation itself or not.

Additionally, the authors have chosen to use the admission with the lowest serum sodium measure in patients with multiple hospitalisations. This would potentially bias the association of serum Na and mortality towards those with multiple hospitalisations, and therefore increased mortality. How many patients were in this category?

The use of discharge status to determine mortality also doesn't take into account death after hospitalisation i.e. only those who are sickest will die in hospital.

Although this is a large patient series, the study results itself are not new and have been observed in other large cohort studies. Some discussion of why the results of an analysis of a large Asian cohort may be different to other cohort studies should be given.
Minor: some typographical errors

- page 23, line 444

- title of supplementary table 2

**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.

No

**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 recommend additional statistical review

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