**Reviewer’s report**

**Title:** Association of plasma potassium with mortality and end-stage kidney disease in patients with chronic kidney disease under optimized nephrologist care - The Nephrotest study

**Version:** 0  **Date:** 30 May 2017

**Reviewer:** Junichi Ishigami

**Reviewer's report:**

Thank you for the opportunity to review this manuscript by Dr. Wagner and colleagues. Using data from the Nephrotest study, a hospital-based cohort of CKD population, the authors assessed the association between the level of serum potassium and subsequent risk of mortality, and found that the baseline potassium level was not necessarily associated with mortality risk while the prevalence of the use of ACE-I or ARB remained high. The study supports the concept perceived in clinical practice that transient abnormality in potassium levels can be controlled by appropriate interventions, and thus may not necessarily indicate the worse outcome or imply the need for discontinuation of ACE-I or ARB. Manuscript is well written. Following are some comments:

**Major points**

1. Could you briefly describe the report system for abnormal potassium level? Does this system report when the potassium level is deviated from a certain range, such as lower than 4 or higher than 5 mmol/L?

2. In outcomes in methods, "after exclusion of 137 lost to follow-up" is not consistent with "After excluding 137 patients with baseline GFR<10 ml/min/1.73m² or lost to follow-up" in abstract. Were there no persons with GFR <10 ml/min/1.73m² excluded from the study?

3. The study excluded persons with mGFR <10 ml/min/1.73m², but in statistical analyses, the lowest category for mGFR was 15-20 ml/min/1.73m².

4. Please consider to report the HRs in the univariate model. Was the association significant in the crude model but attenuated to non-significant after the adjustment?

5. In Figure 1, at which point the value of potassium was set as the reference? Usually the 95%CI converges to the point estimate at the reference point.

6. Could you briefly describe the median or mean duration between the first and second visit? Could patients have additional visits between visit 1 and 2, where serum potassium was
measured for the assessment (including the feedback from the system) but was not captured in the current study?

Minor points

1. In abstract, please spell out "Pk" for the first use.
2. In methods in abstract, "ESKD" in the last sentence is redundant.
3. In figure 1, please make sure the consistent term use of "Plasma potassium" for panel C
4. In eFigure 2, please correct "et" to either "-" or "to".
5. Please make sure the consistency for the decimal places. Some numbers only have the first decimal place.

Are the methods appropriate and well described?
If not, please specify what is required in your comments to the authors.

Yes

Does the work include the necessary controls?
If not, please specify which controls are required in your comments to the authors.

Yes

Are the conclusions drawn adequately supported by the data shown?
If not, please explain in your comments to the authors.

Yes

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 am able to assess the statistics

Quality of written English
Please indicate the quality of language in the manuscript:

Acceptable
Declaration of competing interests
Please complete a declaration of competing interests, considering the following questions:

1. Have you in the past five years received reimbursements, fees, funding, or salary from an organisation that may in any way gain or lose financially from the publication of this manuscript, either now or in the future?

2. Do you hold any stocks or shares in an organisation that may in any way gain or lose financially from the publication of this manuscript, either now or in the future?

3. Do you hold or are you currently applying for any patents relating to the content of the manuscript?

4. Have you received reimbursements, fees, funding, or salary from an organization that holds or has applied for patents relating to the content of the manuscript?

5. Do you have any other financial competing interests?

6. Do you have any non-financial competing interests in relation to this paper?

If you can answer no to all of the above, write 'I declare that I have no competing interests' below. If your reply is yes to any, please give details below.

I declare that I have no competing interests

I agree to the open peer review policy of the journal. I understand that my name will be included on my report to the authors and, if the manuscript is accepted for publication, my named report including any attachments I upload will be posted on the website along with the authors' responses. I agree for my report to be made available under an Open Access Creative Commons CC-BY license (http://creativecommons.org/licenses/by/4.0/). I understand that any comments which I do not wish to be included in my named report can be included as confidential comments to the editors, which will not be published.

I agree to the open peer review policy of the journal