Reviewer’s report

Title: Identification of young adults at risk of an accelerated loss of kidney function in an area affected by Mesoamerican nephropathy

Version: 0 Date: 16 Nov 2018

Reviewer: Udayan Bhatt

Reviewer's report:

The manuscript entitled "Identification of young adults at risk of accelerated kidney function loss in an area affected by Mesoamerican nephropathy" is a study exploring the relatively recently recognized disorder of Mesoamerican nephropathy (MeN) or CKD of unknown etiology (CKDu). The purpose of this analysis is to investigate the "agreement between locally versus centrally measured creatinine-based CKD-EPI eGFR". In addition, they wish to "determine if repeated local creatinine tests combined with baseline information (age, season, occupation), and urinary measurements of uNGAL and urinary albumin-creatinine ratio (UACR) can identify the subgroup of those at risk of future rapid decline of kidney function".

In order to perform this study, the authors utilized data and biological samples from an existing study of outcomes of declining kidney function in subjects in communities in Nicaragua. The authors compared creatinine measurements performed locally with those performed at Oxford. In addition, the authors utilized survey data and locally performed laboratory studies to determine if identification of those at risk for declining kidney function could be performed. The authors found that "variability in the local Scr measurements increased the imprecision between the eGFRScr-Nicaragua and the gold standard (eGFRScr-Oxford) of 3.7% at baseline and 7.2% at the third study visit". This does seem to indicate some variability in obtained creatinine values from locally measured values to gold standard measurements. The authors also determined that, in addition to age, season, work carried out, UACR, and uNGAL, the addition of eGFR determinations at baseline, 6 months, and 12 months was most effective at identifying individuals who started with relatively normal renal function but were at high risk of experiencing a significant decline in kidney function.

Overall, this study was well done. The study seeks to further clarify factors that may be impacting recognition of CKDu and to explore predictors of this relatively recently recognized disease entity of MeN. The study does have a few points of weakness. Mainly, the use of logistic analysis for the identification of risk factors has limited power. Specifically, the number of cases experiencing a decline in kidney function limits the number of variables that can be utilized in the final predictive model. That being said, the overall public health importance of this disease entity to a significant portion of the world cannot be overstated.
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