Reviewer’s report

Title: Noninvasive Indices for Predicting Nonalcoholic Fatty Liver Disease in Patients with Chronic Kidney Disease

Version: 0 Date: 13 Dec 2019

Reviewer: Francesca Moroni

Reviewer's report:

Comments to authors

1. I would recommend to review the overall grammar, syntaxes and word choice as the English adopted in the paper is inadequate for a scientific manuscript. I would suggest to change the term "training group" to "derivation group" as this is the appropriate and widely adopted terminology.
2. Abstract page 3 line 18: the score system proposed in this study does not assess severity of NAFLD. Severity if measure by fibrosis which is not taken into account. I would advise to remove this.
3. Introduction section line 55: the aim of this study are unclear. Aim 1: Authors claim to investigate risk factors for NAFLD in subjects with CKD however because this is a cross sectional analysis it is very difficult to ascertain the outcome (in this case NAFLD) was caused by the exposure (the risk factor) as they are analysed at the same time. In the results section they rightly refer to predictive factors for the presence of. The clinical characteristic analysed in this study are the well-known association with NAFLD and metabolic syndrome. Also is states these will be achieved using non-invasive serum markers: BMI is not a serum marker. Aim 2: I believe the author is referring to a predictive model for NAFLD in CKD population. I think aim 2 should be the solo aim of this study.
4. Methods - patients: it has to be clarified in the exclusion criteria if cirrhotic patients were excluded from this study.
6. Methods-patients: page 5 line 8: "1038 consecutive patients". Does this include people that have returned to clinic or first appointments only? Can therefore the same subject been recruited both in the derivation group and in the validation group?
7. Methods - data collection: page 6 line 11: could the author specify if they included both T1DM and T2DM? do the authors have data on diabetic interventions: diet v oral hypoglycaemic v insulin? [ I am specifically referring to Metformin as it has been suggested delaying disease progression in NAFLD ( ref: Sci Rep. 2019 Apr 30;9(1):6668. doi: 10.1038/s41598-019-43228-0.) ] This is particularly relevant in this study while the diabetic subgroup constitutes >40% of this cohort.
8. Methods - data collection: page 6 line 33-34: can the author specify the indications for abdominal USS in this cohort of patients? It is fundamental we know if these subjects had USS for deranged LFTs or for assessment of kidney and incidentally the liver parenchyma was assessed. The author should also specify if all patients attending renal clinic undergo an USS abdomen - if not this should be part of the exclusion criteria. If USS was performed because of LFTs this would constitute a selection bias for subjects at higher risk of liver disease with the concomitant risk of having missed subjects with NAFLD but normal liver enzymes.
9. Discussion: page 10 line 35: I think this is an overstatement and although some screening tools for NAFLD exist these are not widely used in clinical practice and not currently recommended in guidelines.
10. Discussion: page 10 line 47: The authors should reflect on this statement as they used CKD-EPI formula which is based strongly base on creatinine (a muscle derivate) and adjusted by body surface. In
the NAFLD population in this study there was a higher obesity prevalence compared to control potentially bias the eGRF results with underestimation of CKD.

11. Discussion: page 11 line 48: although the Hb finding is probably the most interesting point made in this article, it is important that the authors reflect on the actual haemoglobin values. In the paper cited Hb≥148g/L in males was associated with higher risk to develop NAFLD. In this study's population Hb just reaches that level while the control group had an overall degree of anaemia.

12. Conclusion: page 13 - line 48: I would again suggest to revisit the term "risk factors" here and consider using "predictors of presence of NAFLD in CKD population". In line 52 I would argue the validation cohort is indeed not external to the derivation cohort.

Please confirm that you have included your review in the ‘Comments to Author’ box?
As a minimum standard, please include a few sentences that outline what you think are the authors’ hypothesis/objectives, their main results, and the conclusions drawn. Your report should constructively instruct authors on how they can strengthen their paper to the point where it may be acceptable for publication, or provide detailed reasons as to why the manuscript does not fulfill our criteria for consideration. Please supply appropriate evidence using examples from the manuscript to substantiate your comments. Please break your comments into two bulleted or numbered sections: major and minor comments.

Please note that we may not be able to use your review if no comments are provided.

Please only upload as attachments annotated versions of manuscripts, graphs, supporting materials or other aspects of your report which cannot be included as text in the ‘Comments to Author’ box.

Yes

Are the methods appropriate and well described to allow independent reproduction of experiments?
Please state in the ‘Comments to Authors’ box below what you think are the strengths and weaknesses of the methods (study design, data collection, and data analysis), and what is required, if anything, to improve the quality of reporting

Yes

Does the work include the necessary controls?
If not, please explain in the ‘Comments to Author’ box below.

Yes

Are you able to assess the statistics?
- Are the statistical test(s) used in this study appropriate and well described?
- Is the exact sample size (n) reported for each experimental group/condition (as a number, not a range)?
- Are the description of any error bars and probability values appropriate?
- Are all error bars defined in the corresponding figure legends?
- Has a sample size calculation been included, or a description and rationale about how sample sizes were chosen?

Please can you confirm which of the following statements apply to your statistical assessment of the
manuscript (Please include details of what the authors need to address in the ‘Comments to Author’ box):

I have been able to assess all of the statistics in this manuscript (please refer to checklist above)

**Are the conclusions drawn adequately supported by the data shown?**
If not, please explain in the ‘Comments to Author’ box below.

Yes

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

Needs some language corrections before being published

**Should the manuscript be highlighted for promotional activity?**
Articles that are deemed of interest to a broad audience can be promoted in a variety of ways. This could be through email updates, postings on the BioMed Central homepage, social media, blogs and/or press releases. Please indicate in the text box below whether you think this manuscript should be considered for promotional activity, indicating your reasons why (e.g. what is the most newsworthy aspect of the research).

No

**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 have no conflict of interest to declare.
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