Reviewer’s report

Title: Quality of life after the initiation of dialysis or maximal conservative management in elderly patients: A longitudinal analysis of the Geriatric assessment in OLder patients starting Dialysis (GOLD) Study

Version: 1 Date: 02 Oct 2018

Reviewer: Nwamaka Eneanya

Reviewer’s report:

Van Loon et al performed a longitudinal prospective cohort study to assess the trajectory of quality of life among elderly patients starting dialysis versus those on maximum conservative therapy. The authors also collected data re: hospitalizations, mortality and functional impairment at 6 months. They found a non-significant improvement in quality of life for dialysis patients and a decrease in quality of life for the group that was managed conservatively. A greater proportion of dialysis patients were hospitalized compared to patients managed conservatively at 6 months and they found no difference in survival between the two groups for patients who were aged 80 years or greater. There are some points to consider:

Methods:

1. It's unclear why patients were excluded if they suffered from a terminal non-renal condition. Did you mean that patients that had limited life expectancy were excluded? Please clarify why this was done.

2. The definition that was used to assess frailty is not clear. In the study cited (reference 12), if patients had more than two impairments, they were to be considered for a comprehensive geriatric assessment. Please confirm whether this is an established method to assess frailty.

3. The EQ-D5 VAS is not clearly described under the data collection section. Was this assessed separately from the EQ-D5 Index and at what time points?

4. Why was a subgroup analysis performed for patients aged greater and younger than 80 years old?

5. Why were baseline EQ-D5 scored corrected for age and eGFR category?

6. The objective of the study is to assess quality of life over time however the outcome is listed as a composite (decline of QOL/death). Please clearly state the primary and secondary outcomes of this study.
Results:

1. Since the study compares dialysis patients with conservative management patients, it would be helpful to describe all of the statistically different EQ-D5 domains between the two groups. Pain/discomfort is the only domain listed although there were significant differences in the mobility domain as well. Why is the anxiety/depression domain difference described when it is not significantly different between the two groups?

2. Where are the details of the multivariate results for baseline quality of life after adjusting for age and eGFR?

3. The EQ-D5 summary index is listed as lower for conservative management patients compared to dialysis patients when in fact there is no difference (p = 0.05). Please clarify.

4. The EQ-5D VAS results are listed without being described in the Methods. Please describe as noted above.

5. For mortality follow-up results, it is not clear why 4 dialysis patients were excluded from the analyses. This should be clearly pre-specified in the Methods.

6. Please specify why age, comorbidity level, and GFR category were the variables that were included in the multivariate model to predict 12-month mortality. Were these significant in univariate analyses? Please clarify.

7. It would be helpful to discuss significant differences in quality of life follow-up data between the two groups as this was the main objective of the paper (again the results described are arbitrarily on the pain/discomfort and anxiety/depression subscales)

8. Why were patients who received a transplant (2%) included in the dialysis group when assessing quality of life? Would this not likely bias the results towards improved quality of life for this group?

9. How many total hospitalizations occurred for each group at 6 months? Is the proportion of patients that are described for each group for patients who had at least one hospitalization within 6 months? This is not clear.

Discussion:

1. The statement that dialysis patients had more anxiety/depression symptoms compared to conservative management patients is not supported by the results. Table 2 shows no difference (p=0.22).

2. Why is the mean score for self-rated quality of life compared to community dwelling elderly patients? A seriously ill patient comparator group seems more appropriate for this study.
3. The statement that hospitalizations occurred significantly more often among dialysis patients is not supported by the results. Proportions of patients from each group are described whereas you would need frequency of hospitalizations in each group to make this statement. The discussion later states that "hospitalizations was twice as high in dialysis patients compared to conservative patients" which is also not supported by the data.

**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.

Yes

**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 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 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