Reviewer's report

Title: Association of Kidney Disease Quality of Life (KDQOL-36) with Mortality and Hospitalization in Older Adults receiving Hemodialysis

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Reviewer: Rob Walker

Reviewer's report:
This study has investigated the association between scores on the KDQoL 36 in a cohort of individuals aged >75 years old who have been on dialysis therapy. 3500 individuals as part of a private dialysis service provider who had completed a KDQoL -36 as part of the requirements for payment (in a fee for service environment) were analysed to see how patient related symptoms contribute to death and hospitalisation rates over the next 1 to 2 years. The aims and outcomes of the study have been well defined along with how they measured the KDQoL subscales. The statistical analyses used seem appropriate with discussion on the limitations as well. The study provides further information about patient related factors that influence outcomes in the older population.

In the context of risk of hospitalisation RR=2 usually means risk of hospitalisation is twice larger. However the RR estimated in the 3 models used in this study need to be interpreted slightly differently. They used cox models and competitive risk models. RR=2 in those models have to be interpreted as outcome reaches twice quickly. That mean, hospitalisation occurs more quickly (rather than hospitalisation is more likely). This should be addressed in the discussion with some discussion around the reasons why - perhaps related to comorbidities as discussed next?

Of interest in this cohort, the majority had been on dialysis for almost 6 years. No information was provided with respect to the extent of co-morbidities present in these individuals at the time of assessment. It would have been useful to know the extent of associated co-morbidities present at the time of assessment, as they will play a significant role in how the physical and mental
scores impact upon the individual. For example, those with congestive heart failure or severe ischemic heart disease will clearly report greater physical symptoms and a more marked impact on their health. How did the presence of multiple comorbidities contribute to the outcome? The mean age of these participants was 80 and they had been on dialysis for almost 6 years, so a very high risk group for dying. Likewise a very high risk group for other health issues. How much was the impact of the subscores affected by these comorbidities rather that the ESKD or dialysis? Is it possible to separate out dialysis from the other health issues? This could be analysed in terms of associated comorbidities 0-2 or greater. Were the hospitalisations related to dialysis complications or not?

There is no mention of how the KDQoL-36 questionnaires were administered? Was this whilst they were in the dialysis facility or not? Who administered the survey? Likewise there is no description as to how many were in residential care, hospital level care versus independent self care at home. These factors will influence the responses to the KDQoL 36 substantially. I would like to see some discussion related to these factors.

Likewise there is no actual discussion of the reasons for hospitalisation or the cause of death? How many of those who died are also included in the hospitalisation rates - did they die in hospital on that admission? From the results it appears that there was a death one day after the survey was completed! I am not sure just how valid this would actually be - was it a sudden cardiac death or was the patient already dying such that the information is not really helpful in this type of study?

A single time point for the assessment of KDQoL on outcomes whilst it may help with prognostication, serial changes in the KDQoL may be more important. In the elderly approaching the need for dialysis, need to have some idea of the impact of dialysis on QoL and how this may change with time on dialysis. 6 years into dialysis is quite a different population so this study provides insight into survival at a different time point.

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.
Unable to assess

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

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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

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