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

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Reviewer: Susan Wong

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This is a multi-center prospective cohort study comparing changes in geriatric measures, quality of life, hospitalization and mortality between 196 patients with advanced CKD who had started dialysis and 89 patients who opted for conservative non-dialytic management of their advanced CKD. Assessments were conducted around the time dialysis was initiated or when the decision to forgo dialysis was made and at 6-months follow-up. At baseline, patients who opted for conservative management had a higher eGFR, were older, were more often single (vs. married) and frail, and more often reported experiencing pain and a lower quality of life as compared with patients treated with dialysis. At 6-months follow-up, mortality rates and change in quality of life were no different between treatment groups, though difficulties with mobility and self-care were more prevalent, self-rated health improved and hospitalization rates were lower among conservatively managed patients as compared with those who received dialysis. At 12-month follow-up, mortality was higher among patients who were conservatively managed as compared with those who received dialysis.

There is little information available on differences in quality of life of patients who received dialysis vs. were conservatively managed to support shared decision-making. This study confirms the findings of few prior studies (Da Silva-Gane 2012; Yong 2009; Brown 2009) that trajectories in quality of life may not be different between those opting for conservative management and those treated with dialysis.

My primary concern with this study is with its design. As with prior studies comparing outcomes of patients opting for dialysis vs. conservative management, it is unclear what should be the "time zero" from which longitudinal data should be measured that makes sense for both groups. Some studies use the date of dialysis initiation as time zero, however the actual decision to receive dialysis often occurs well before the day that dialysis is started. Some studies use the date when the decision to receive or forgo dialysis was made, however qualitative studies indicate that treatment preferences evolve or vacillate over time such that it can be difficult to assign a single date on which a decision occurred. Moreover, although decisions to forgo dialysis might occur early in the disease trajectory, the decision might not be acknowledged or considered final until an actual clinical indication for dialysis arises. In the current study, the investigators use a hybrid definition of cohort entry that combines elements of what I have described above: for patients who were treated with dialysis, their date of cohort entry was the date dialysis was initiated; for conservatively managed patients, it was the date they decided to forgo dialysis. For the latter group, it is unclear how this decision date was established - by consent form? Date of
enrollment into a conservative care program? By using two different definitions of cohort entry, it can result in trying to compare two groups that are at very different points in their illness trajectory. In this study, the conservative care group at cohort entry had a significantly higher eGFR as compared with patients who started dialysis, which might contribute to the lack of differences observed in changes in quality of life and mortality between the treatment groups observed. It should be noted that authors do attempt to address the lead-time bias favoring the conservatively managed group by performing sensitivity analyses that repeated the primary analyses stratifying by eGFR level (< vs >10). However, the authors do not explain whether the study is adequately powered to detect these differences.

My second concern is the very short follow-up period (6 months). If this study was focused on comparing patients who had started dialysis but were thought to have questionable prognosis on dialysis and those opting for conservative care, then a 6-month follow-up window might adequately capture prognostic information relevant to decision-making for advanced kidney disease. Because the current study included all-comers to dialysis and patients who opted for conservative care relatively early in the disease trajectory, the follow-up period seems too short to ascertain prognostic information that might be helpful to patients wrestling with these treatment decisions. Deeper discussion is needed about how we might use this information with patients.

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?
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Yes

Are the conclusions drawn adequately supported by the data shown?
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Yes

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