Reviewer's report

Title: Frailty And Falls Among Adult Patients Undergoing Chronic Hemodialysis: A Prospective Cohort Study

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Reviewer: vanita Jassal

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McAdams-DdeMarco et al have conducted a small, prospective cohort study in a prevalent hemodialysis population to show that frailty and falls are associated. Their hypothesis as stated is a little unclear (“insights into falls … might inform prediction), but I believe they were trying to suggest that as frailty and falls are associated in the non-renal population they may be associated in the HD population.

The use of the Fried criteria to establish frailty is fair, though I personally question if it is valid in the dialysis population where all patients almost invariably report yes on self-reported exhaustion and have low activity. This is particularly true in this study as more than 70% of their population were either frail or intermediate frailty phenotype. I wonder if perhaps the nephrology community will shift to the use of a more robust frailty score such as that validated by Rockwood or perhaps one of the others.

I have a few concerns:

1. Is it statistically valid to build Poisson regression models with 8 explanatory variables and one interaction term when only 26 people fell? I appreciate the Poisson model uses a rate. What is the model fit? Is a negative binomial or zero inflated neg binomial model a better fit?
2. The authors do not actually tell us the total number of falls recorded
3. The methods section has a phrase “the follow up visit” – does this mean only one follow up visit was done? How were data on falls collected then? How can we ensure all falls were identified?
4. The authors may want to include a comment in their discussion that their population may differ from many populations across N America or even Europe. The observation that their population were predominantly African Americans may suggest a socioeconomically deprived population and a population in whom corrective glasses, suitable footwear, restorative physio or gait aids may not be accessible
5. There is no info re the deaths on the people excluded. The observation that patients with falls have been on dialysis for a shorter time suggests a survival bias and therefore to some extent invalidates the comparison with patients who did not fall….. this needs to be addressed in the results section and added to the discussion.
6. Please add information re use of gait aids, cognitive function, simple measures of vision. These may be more predictive of falls rather than a history of COPD, angina, myocardial infarction etc and are notable by their absence.

7. Please include information about whether patients had previously had a fall or not

8. The text on page 8 “number of years on chronic HD (6.0 vs 4.0) “ etc… needs to be improved. When reading only the text it is unclear if those with falls were longer on HD or not. This is true for all three comparisons. While the data are shown in the table, I needed to look to understand it.

9. The main finding – of higher risk of falls in those found to be frail 6 months previously – is intuitive and I think fair and not surprising. However I found myself wondering what I needed to do with the information. It almost seems backwards to me. Would it not have been easier to ask the patient if they had had a fall and perhaps then recognize they were more likely to meet frailty criteria? It’s a one minute question while the frailty assessment is likely 30 minutes …? Please address and consider a comment in the discussion highlighting that asking about falls may be a simpler assessment tool….

10. In a similar vein, but perhaps more philosophical: assuming I really had the staff to do a frailty assessment on everyone routinely: how would I use these data? Only 26 patients fell. Although we are not told if all 26 patients were frail or intermediately frail, that means that only one third of those who were frail or intermediate were going to fall. 2/3 were not. I think this really means we can only say that if a patient is not frail they are unlikely to fall…. Rather than the other way around.

Level of interest: An article whose findings are important to those with closely related research interests

Quality of written English: Acceptable

Statistical review: Yes, and I have assessed the statistics in my report.

Declaration of competing interests:

I declare that I have no competing interests