Reviewer's report

Title: Neutrophil Gelatinase-Associated Lipocalin (NGAL) predicts Renal Injury in Acute Decompensated Cardiac Failure: A prospective observational cohort study

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Reviewer: David R McIlroy

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Major compulsory revisions:
1. Background section. How common is AKI in patients admitted with ADCF? More detail is required on presumed etiology of AKI in ADCF and why early diagnosis may be important. Would such knowledge potentially change initial management from diuretic-based to inotropic-based? The authors should make a stronger case for why we need recognition of evolving AKI at admission.

2. Methods: Please make explicit that NGAL was measured in blood only and not measured in urine.

Were NGAL results corrected for urinary creatinine? If not, please justify. These patients may have had significant variation in urine flow at time of presentation to the E.D.

In terms of the sample size determination, what was an "elevated NGAL" and how was this determined.

Results: Why didn't 12 patients have subsequent data? This should be explained. Did they die shortly after admission? Did they get lost?

On follow up, how may patients were confirmed to have the correct diagnosis if ADCF? More information is required for the methodology of the multivariable analysis. A general rule-of-thumb is that there should be at least 8-10 outcomes for each explanatory variable in the model? With 22 events (AKI) in this study there is limited scope for a multivariable regression analysis. This needs to be addressed.

Discussion: Please discuss why AKI might be associated with increased mortality in this study but not increase length of stay. How did your results vary if the analysis was repeated in a subset with physician-confirmed ADCF? What was the incremental benefit of admission NGAL (expensive) over and above admission eGFR (very cheap) for identifying risk of AKI. Is there any evidence that NGAL discriminated patients with so-called pre-renal azotemia from patients with true acute tubular injury.

The conclusion does not seem to fit with the data. I would suggest that the data indicate that NGAL is a useful and expensive measure of admission GFR, but that no incremental benefit over and above this simple measure has been demonstrated. Please address this.
Level of interest: An article of limited interest

Quality of written English: Needs some language corrections before being published

Statistical review: No, the manuscript does not need to be seen by a statistician.

Declaration of competing interests:

I am an active researcher in the area of perioperative AKI and have extensive interest and experience with urinary NGAL.