Reviewer's report

Title: Risk Factors and Outcomes Associated with Acute Kidney Injury following Ruptured Abdominal Aortic Aneurysm

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Reviewer: Michael Darmon

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The manuscript submitted by Dr. Kopolovic and Bagshaw is a retrospective multicenter cohort study evaluating prevalence of AKI and its influence on long term outcome.

The subject is of interest, data regarding AKI in this specific population being scarce. The manuscript is clear and well written. The use of a regional database to identify patients with Ruptured Abdominal Aortic Aneurysm (rAAA) ensures the external validity of this study.

I have only few comments:

- Methods: Missing baseline creatinine. Although methods are well described, it may be interesting to mention if any of the included patients had missing baseline creatinine as expected. If so, how these missing variables were handled.

- Results, Crude mortality. Crude ICU and hospital mortality in patients without AKI being null, reporting OR for these events in patients with AKI seem unreliable.

- Results, recovery. The chosen definition is likely to have underestimated rate of partial or absence of renal recovery. Indeed, definition of renal recovery is based on return to baseline serum creatinine. As consequences of the hospital length of stay, weight and muscles loss, “normal” discharge creatinine in patients without persistent renal dysfunction should be lower than baseline creatinine. Hence, discharge serum creatinine in patients with AKI was 6µmol/L lower than baseline creatinine. This limit probably deserves to be mentioned more clearly in discussion section.

- Was any information regarding the type of surgery (open vs. endovascular repair), delay between diagnosis and surgery or existence of shock at time of the surgery available? In addition, location of the AAA (infra renal vs. supra or para renal AAA) is likely to have influenced post-operative renal function.

Level of interest: An article of importance in its field

Quality of written English: Acceptable
Statistical review: No, the manuscript does not need to be seen by a statistician.

Declaration of competing interests:
No competing interest to declare