Reviewer's report

Title: Early postoperative serum cystatin C predicts severe acute kidney injury following cardiac surgery

Version: 1 Date: 27 October 2013

Reviewer: Ehsan Natour

Reviewer's report:

Confidential comments to editors
None

Reviewer's report

The article describes a post-hoc analysis of a study designed to compare different CPB coatings. It evaluates Cystatine C as an early marker for acute kidney injury at six perioperative moments in 70 patients undergoing different types of on-pump cardiac surgery.

Major Revisions

The early predictive value of CysC on AKI is only upheld if AKI is defined as renal replacement therapy, making this the hard endpoint of this ad-hoc analysis. However, as indicated under ‘Clinical Outcome’ in the results section, the indications for and timing of this renal replacement therapy were individual medical decisions and not standardized in the study. No clinical and biochemical data about the circumstances under which replacement therapy was started are provided. This data should be included.

Minor Essential Revisions

In Materials and Methods that undergoing cardiac surgery with CPB is one of the inclusion criteria, while ‘off-pump method’ is listed as exclusion criteria. This overlaps as it speaks for itself.

Figure 1 seems to be in German.

In the introduction section it is stated that various external factors, including age and sex are known to influence CysC levels. In the discussion however, the superiority of CysC to creatinin is mentioned as being partly caused by a non-dependence on age and sex. Please adjust, as the information in the introduction is correct.

In- and exclusion criteria are confusing when the original article is read, since there ‘Inclusion criteria were a patient age of >75 years and/or a reduced left ventricular function of <40%...' Is mentioned. Here for example age <70 and EF >45% are mentioned as exclusion criteria. It is at least confusing that this leads to the same patients. Inclusion/exclusion used in the original article should be
In the discussion it is mentioned that no complex procedures were included in the evaluation, however it is reported in 29% and 19% of the two groups that make up this study-population together in the original publication. This contradicts.

What's next?
Acceptance after major revisions.

Level of interest
An article of importance in its field.

Quality of written English
Acceptable

Statistical review
Yes, but I do not feel adequately qualified to assess the statistics.

Declaration of competing interests
I declare that I have no competing interests.

**Level of interest:** An article of importance in its field

**Quality of written English:** Acceptable

**Statistical review:** Yes, but I do not feel adequately qualified to assess the statistics.

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