Reviewer's report

Title: Dexmedetomidine Prevents Acute Kidney Injury After Cardiac Surgery: A Meta-analysis of Randomized Controlled Trials

Version: 0 Date: 29 Sep 2017

Reviewer: Francis Dane

Reviewer's report:

The purpose of the project was to complete a meta-analysis of randomized control trials regarding the relationship between dexmedetomidine and acute kidney injury, particularly in comparison to placebo or other anesthetic agents. To this end, 10 trials were analyzed. This reviewer lacks clinical expertise, so only methodological and statistical aspects of the manuscript are herein addressed.

Mean and standard deviation when not calculated were estimated according to accepted, published methods. Although such estimation contains error when samples are not normally distributed (Bland, 2015; Kwon & Reis, 2015), which is usually when median and range or interquartile range are reported, Bland has convincingly argued that the overestimation is mostly in the standard deviation. That will increase the error term, which will make it more difficult to reject the null hypothesis in a meta-analysis. Given that all of the meta-analytic results favor dexmedetomidine, the overestimation should not affect the conclusions. The authors may want to add a footnote, or include in the limitations section, an indication that the Hozo et al. (2005) estimation method may have limited their statistical ability to detect differences. The authors should add a reference for Hozo et al. (2005).

Otherwise, I find no methodological or statistical concerns in the manuscript.

Review References


Are the methods appropriate and well described?
If not, please specify what is required in your comments to the authors.

Yes

Does the work include the necessary controls?
If not, please specify which controls are required in your comments to the authors.

Yes

Are the conclusions drawn adequately supported by the data shown?
If not, please explain in your comments to the authors.

Yes

Are you able to assess any statistics in the manuscript or would you recommend an additional statistical review?
If an additional statistical review is recommended, please specify what aspects require further assessment in your comments to the editors.

I am able to assess the statistics

Quality of written English
Please indicate the quality of language in the manuscript:

Acceptable

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