Reviewer’s report

Title: A novel citrate-based protocol versus heparin anticoagulation for sustained low-efficiency dialysis in the ICU: safety, efficacy, and cost

Version: 0 Date: 21 Apr 2017

Reviewer: Randy Luciano

Reviewer’s report:

The authors present a very thorough assessment of a retrospective analysis of anticoagulation in critically ill patients on SLED. The comparison between regional citrate therapy and systemic anticoagulation is relevant in treating a group of patients who are prone to clotting and may be at high risk of bleeding. The authors perform an excellent assessment comparing the use of heparin and citrate based protocols. I agree that due to selection bias, a randomized trial in clinical patients would be very difficult. The authors are forthcoming in addressing this concern.

I feel that the following points should be addressed before publication:

1. There is no mention of whether the PTT goals were achieved in the patients who were using heparin as a therapeutic agent. This will have a significant impact on whether clotting occurred (if the patient was below the therapeutic range) or whether bleeding occurred (if the patient was above therapeutic range).

2. In Table 3: the number of patients with circuit clotting in the citrate group is 38. However in the breakdown there are 3 patients with access and 36 patients with dialysis catheter related clotting - this totals 39 patients, not 38 - please correct or explain the difference

3. In table 3 please describe/breakdown the metabolic complications - may be important when considering citrate based therapy

4. Please describe in detail how the both group received anticoagulation - were PPT goals similar? Was duration continuous for both therapies? What was the breakdown of heparin use vs citrate use and if treatment was changed from heparin to citrate (or vice versa) what prompted the switch? This needs to be addressed as these patients have more dialysis sessions and longer hospital stays.

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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