Reviewer’s report

Title: Simple Citrate anticoagulation protocol for Low Flux haemodialysis

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Reviewer: Jadranka Buturovic-Ponikvar

Reviewer's report:

The manuscript »Simple citrate anticoagulation protocol for low flux hemodialysis" is a prospective cross-over study in 24 patients requiring hemodialysis for end-stage renal disease or acute kidney injury, comparing heparin-free (saline flushes) and regional citrate anticoagulation.

The major study finding was that regional citrate anticoagulation was superior to heparin flushes in maintaining dialysis circuit patency. The authors have developed simple protocol for low flux hemodialysis that could be easily followed.

The study group is small, patients with both end-stage kidney disease and acute kidney injury are included, having both standard and SLED prescription of dialysis. There are important issues to be clarified.

Specific comments

Patients selection: how many end-stage renal disease patients and acute kidney injury patients were included?

Please clarify how many patients were included and how many hemodialysis procedures were performed.

Abstract: "Assessment of anticoagulation was performed using …… and pre-filter ionized calcium level" - please clarify that. From the Figure, blood sample for prefilter iCa level was taken upstream from the citrate infusion. In that case it reflects systemic iCa level and not circuit iCa level. Post-filter iCa level reflected the level of anticoagulation. Please clarify.

How the dialysis circuit was pretreated before HD: saline or saline with heparin?

Please provide data on hemoglobin level.
Please provide data on vascular access.

Targeted pre-filter iCa was 0.65-1.2 mmol/l. 0.65 mmol/l seems to low, please comment.

5 patients (20%) were dialyzed in slow low efficiency dialysis mode - SLED (blood flow 150 ml/min, dialysate flow 300 ml/min) - please provide details on such dialysis prescription, and how heparin-free dialysis (saline flushes) was performed at such low blood flow. Was SLED performed for 4 hours?

SLED dialysis prescription may influence clotting and also citrate clearance - were patients with increased TCa/iCa levels from this group? Please comment.

Table 2. and Figure - citrate 15% - It should be 13%

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

No

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

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