Reviewer's report

Title: Haemodynamic consequences of changing potassium concentrations in haemodialysis fluids

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Reviewer: Alaattin Yildiz

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In this prospective, cross-over study, Gabutti et al examined the influence of low dialysate K on BP during dialysis and low dialysate K was found to be associated with hypotension. Topic is not currently updated. As cited in the paper, similar question was asked previously by Dolson et al, and they reported rebound hypertension in low dialysate K. However, in the present study, authors reported low BP with low dialysate K and there is no clear explanation for difference between the studies. There is some additional comments on the paper written below:

1. Introduction is too long and most of them is irrelevant to the study. It could be shortened.

2. Design of the study is complicated and confusing. I do not think the design of the present study is superior to previous study by Dolson et al.

3. Study population is quite old, so the patients may not represent the general population. Also, a number of patients were hypertensive requiring 3 or more antihypertensive agents. This suggest that some patients are hypervolemic. Authors should described briefly how detect the dry weight of the patients.

4. Exact dialysate K concentration could be given such as 1,2 and, 3 mEq/l for easy understanding.

5. What was the dialysate Ca concentration which may influence hemodynamics? Dialysate Mg were given as 0.5 mmol/l. It was previously reported that low K and Low Mg was associated with more hypotension (Kyriazis J, Kidney Int. 2004 Sep;66(3):1221-31.). This may explain why the authors reported high rate of hypotension in low K dialysate period. This could be discussed in the paper.

7. dialysate flow rate should be kept in fixed.

8. It would be better if authors give diastolic BP

9. All dialysis sessions should be investigated the same interdialysis interval (44 hour).

Level of interest: An article of limited interest

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