Reviewer’s report

**Title:** Citrate- vs. acetate-based dialysate in bicarbonate haemodialysis: consequences on haemodynamics, coagulation, acid-base status and electrolytes

**Version:** 2 **Date:** 14 August 2008

**Reviewer:** Thomas Golper

**Reviewer’s report:**

**Major Compulsory Revisions**

1. The most important omission in this paper is any comment about what acidosis does to urea generation rate. This is crucial since the retained citrate, being ultimately converted to bicarbonate corrects the metabolic acidosis of ESRD perhaps better than acetate dialysate. If this leads to a less catabolic state and less urea generation, then it explains (most likely explanation) the lower predialysis BUN under the citrate experiments.

2. You must in the methods describe the dialysate, their manufacturer, origin and their differences.

3. You must be careful in the use of the term clearance, when you may mean removal. The blood concentration drops more so in some experiments than in others, but this does not mean clearance changes. Removal and clearance can differ. For example, Kt/V is not different. That is a standardized clearance (standardized for duration and volume of distribution) but that does not mean that absolute removal is the same. You do this for urea, K+, and phosphorus. For K+, bicarbonate drive K+ into cells, so I might expect more to be inside cells during dialysis with previous citrate, and by being inside cells, less is removed dialytically. This is certainly true when higher bath glucose is used, stimulating insulin release, driving K into cells.

**Minor Essential Revisions:**

1. Make a clear statement that heparin is continued in both arms (acetate and citrate) at the same dosage.

2. The issue of slow metabolizers having a higher frequency of larger net UF and more likely being diabetic is not pursued in any way. You are allowed some speculation and/or discussion of this, which includes leaving it as is. Please consider some comments about its importance, if any. For example, perhaps slower metabolizers have less skeletal muscle mass (diabetics) or are less compliant with fluid restriction, which leads to greater UF and greater bicarbonate loss in the UF. There are lots of interesting possibilities here for future research.

3. Examples of typographical errors: enrollment (line 1 of Results), spontaneously (4 lines up from bottom of acid-base status section), require (3 lines up from bottom, same section)
Level of interest: An article of importance in its field

Quality of written English: Needs some language corrections before being published

Statistical review: No, the manuscript does not need to be seen by a statistician.

Declaration of competing interests:
I have no competing interests to declare. I am close friends with another investigator in this field, Suhail Ahmad, MD in Seattle, WA, USA, but I review his work for journals and have participated with him in unrelated subjects.