Reviewer's report

Title: Hemodialysis and hemodiafiltration differentially modulate left ventricular diastolic function

Version: 3 Date: 16 December 2012

Reviewer: Tomasz P Stompor

Reviewer's report:

1. Major compulsory review:
Description of study group and procedures is far from perfection. Authors should stress in a Discussion section that the results apply only to this highly selected group of patients without rhythm abnormalities, only 10% with coronary artery disease and - which is very uncommon for an average population on dialysis - without diabetics. The mean time on renal replacement therapy was 93 months (almost 8 years!!!) which also suggests that this was a group with long-term survival advantage, for some reason - not transplanted.

I can't conclude from the methods section what was the true difference between HD and HDF: both techniques were using same dialysis solution, same dialysis membranes and dialysers, lasted for 4 hours. The substantial difference between HD and HDF should be an excess UF volume on HDF which is then replaced with the replacement solution. What was this solution, was it ready-to-use commercial pre-mixed bag or manufactured on-line from ultrapure water? What was the blood flow during respective procedures?

Authors mentioned that study was performed first on HDF and thereafter on HD (after at least three months). How long were patients using HDF before the study was performed?

The abstract, introduction and methods section is written in an artificial English which is very difficult to follow. What does mean 'adverse cardiac failure', 'any underlying impulse generation', or 'polysulphone dialysis capillaries'? Interestingly, results and discussion are much better in terms of language - it seems these sections were written by someone else.

The group of patients is very small, but the topic is quite interesting and the approach - quite original, so I would accept it.

2. Minor Essential Revisions
None

3. Discretionary Revisions
None

Level of interest: An article whose findings are important to those with closely related research interests
Quality of written English: Not suitable for publication unless extensively edited

Statistical review: Yes, and I have assessed the statistics in my report.

Declaration of competing interests:

I declare that I have no competing interests