Reviewer's report

Title: On-line hemodiafiltration did not induce an overproduction of oxidative stress and inflammatory cytokines in intensive care unit-acute kidney injury

Version: 0 Date: 09 Apr 2017

Reviewer: Edward Clark

Reviewer's report:

Kouche and colleagues have conducted a study assessing the impact of online HDF in critically ill RRT-requiring ICU patients with respect to markers of inflammation/oxidative stress.

Abstract:

Minor comments:

Line 2: I think that there is still some debate as to whether OL-IHDF is the 'gold standard' for chronic HD patients (see letter from Marano M et al. On-Line Hemodiafiltration: All That Glitters Is Not Gold. Blood Purification 2016) rather than simply an accepted modality with potential benefits.

Background:

Minor comments:

Line 47: References 8-10 do not really address the effectiveness of OL-IDHF.

Line 49: Is there any reference to support the statement that begins: "The intensivists aversion..."?

Line 52: The statement beginning with "A regular bacteriological...." needs to be referenced.

Line 57: The wording of the statement "However, a non-inflammatory acute harm..." should be reworded for greater clarity.
Methods:

Major comments:

Line 66: Need to clarify if other patients were admitted during this time who underwent IHD without OL-IHDF so as to ensure that there wasn't selection bias (i.e. only certain patients got OL-IHDF).

Line 97: Did intradialytic hypotension encompass initiation of vasopressors also (I assume so but need to be clear about this).

Line 119: Note for editors: I don't have any specific concerns but I also do not have any expertise with respect to methods for measuring superoxide anions or cytokines so I am unable to evaluate their validity.

Minor comments:

Line 70: Regarding the statement " Decisions regarding the initiation........according to the KDIGO recommendations": I suspect this may or may not be true in all cases. Either this is an assumption that all physicians practiced in according to the KDIGO recommendations, or physicians' initiation practices' were specified by the study itself, or they were measured in some way and can be reported in the results.

Results:

Major comments:

Line 183: Why were only 76 of 203 sessions evaluated? How were these sessions selected vs those that were not? This is potentially a major limitation of this study if this can't be clearly addressed as it introduces the potential for significantly biased results relative to the what might have been found if all OL-IHDF sessions were included for analysis.

Minor comments:

Line 177: The term 'per-dialytic hypotension' is being used in the results. The methods describe 'intradialytic hypotension'. I suggest using intradialytic hypotension throughout.
Discussion/Conclusions:

Major comments:

- In general, the authors should temper their conclusion that their findings have implications with respect to the overall safety of OL-IHDF in critically-ill patients. There were no 'hard outcomes' measured. Conclusions can be made with respect to the impact of OL-IHDF on inflammatory markers but not much beyond that especially since any complex therapy (such as OL-IHDF) may have unintended consequences. Overall safety/benefit is difficult to evaluate outside of adequately powered trials which use all-cause mortality as the primary outcome.

- Is anything known about the impact of HD with biocompatible membranes (i.e. not OL-IHDF) on the same inflammatory markers that were measured in this study? I don't think this is very likely but without a non-OL-IHDF comparison group in this study, the possibility exists that inflammatory markers usually decrease after IHD so that OL-IHDF is actually causing more inflammation since levels did not decrease.

Minor comments:

Lines 218-221: This section should be reworded for clarity.

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
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Please indicate the quality of language in the manuscript:

Needs some language corrections before being published

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