Author’s response to reviews

Title: Dismal long term outcome of patients undergoing interventional lung assist membrane ventilator treatment and concomitant need for extended dialysis

Authors:

Jan T Kielstein (kielstein@yahoo.com)
Soeren Tolk (Soeren.Tolk@gmx.de)
Carsten Hafer (c.hafer@comlink.org)
Anna Heiden (anna.m.heiden@stud.mh-hannover.de)
Olaf Wiesner (Wiesner.Olaf@mh-hannover.de)
Christian Kühn (kuehn.christian@mh-hannover.de)
Johannes Hadem (johadem@yahoo.com)
Marius M Hoeper (hoeper.marius@mh-hannover.de)
Stefan Fischer (s.fischer@klinikum-ibbenbueren.de)

Version: 2 Date: 11 February 2011

Author’s response to reviews: see over
**Editorial requests**

-Copy-editing

We recommend that you ask a native English speaking colleague to help you copyedit the paper. If this is not possible, you may need to use a professional copyediting service. Examples are those provided by the Manuscript Presentation Service (www.biomedes.co.uk), International Science Editing (http://www.internationalscienceediting.com/) and English Manager Science Editing (http://www.sciencemanager.com/). BioMed Central has no first-hand experience of these companies and can take no responsibility for the quality of their service.

**As requested, the manuscript was copyedited by a native speaker.**

-Ethics

Please include the name of the body which gave ethical approval, with a reference number where appropriate, in the methods section of your manuscript.

**The manuscript does now contain a statement about the ethical approval for the study.**

-Authors’ contributions Please include an Authors’ contributions section before the Acknowledgements and Reference list.

**As requested we have now included an Authors’ contribution section.**
Response to Reviewer 1:

- The fact that outcome is worse in a given acutely ill patient population if AKI necessitating RRT develops is of course not exceptional and has been depicted in many populations. Perhaps the authors should point this out in their discussion.

We now include a general statement about the increased mortality in patients undergoing RRT.

- I am a bit surprised that only one index of severity of disease is mentioned (SOFA) and e.g. not APACHE II or III.

We now include the APACHE II score in the manuscript and the table.

- The worse outcome in patients on ED and iLA is probably related to their worse general condition. Also this should be mentioned.

This point is now included in the discussion.

- Why is the Horowitz index not mentioned in table 1?

In the Table 1 we provided the paO2/FiO2 but expanded that to the Horowitz index which we refer to in the text.

- The wording is sometimes awkward. Revision by a genuine English speaker might be useful:

The manuscript had been proof read by a native speaker.

- Background, line 4: “among other organs” does not fit with what follows where not organs but effects are discussed.
This part has been re-written.

o Line 6: “Also patients with non-severe pneumonia” – is there no “in” missing?

The reviewer is correct. We now inserted “in”.

o Line 14: “the 28 day survival of these patients” – do you mean patients with ARDS or patients with ARDS on lung assist? Please specify.

We meant patients with iLA. This is now specified.
Response to Reviewer 2:

Was iLa per se responsible of the renal injury? How could you exclude this hypothesis? A detailed discussion should be provided.

As one third of the patients had already been dialysis dependent before iLA insertion we don’t think that iLA insertion is very likely to have caused renal injury. Moreover, iLA is not pump driven and insertion does not require the (temporary) occlusion of arterial or venous vessels. Last but not least, unlike ECMO therapy is not associated with significant hemolysis as the flow is rather low (1-1.5 litres) unlike ECMO where the pump derives flow is 3-4 litres. Hence although we can not exclude that iLA insertion has any negative effect on renal function we consider this not to be very likely.

Did the patients presenting ARF did have additional risk factors (shock, toxic drugs etc)?

The severity of illness was indeed more pronounced in the patients that were treated with both, iLA and ED, which was however mainly driven by the loss of renal function which alone can increase the SOFA score by up to 4 points. We now list the percentage of patients on vancomycin and / or aminoglycosides in the revised Table 1. As there was no difference in the use of these drugs we would be hesitant to assume that this significantly contributed to the occurrence of AKI. This is now stated in the extended discussion of the paper.

The statement that respiratory acidosis did not influence renal function appear to be too simplistic: no data are provided in term of pH modification, hemodynamic variations, drug infused.

We now provide additional data showing that indeed iLA therapy lead to an improvement of pH mainly due to a decrease in pCO2 without a concomitant change in serum creatinine in those patients that did not become RRT dependent.