Reviewer's report

Title: Maximization of oscillatory frequencies during arteriovenous extracorporeal lung assist: a large-animal model of respiratory distress

Version: 1 Date: 20 July 2008

Reviewer: Klaus Markstaller

Reviewer's report:

General:

The manuscript „Maximization of oscillatory frequencies during arteriovenous extracorporeal lung assist: A large-animal model of respiratory distress” from Muellenbach et al. combines different oscillatory frequencies at high frequency ventilatory oscillation (HFOV) with extracorporeal CO2 removal (av-ECLA).

This study is of high interest for the scientific community in the field of Acute Lung Injury, and therefore of high interest for the readers of BMC Anesthesiology.

The manuscript is very clear, and the hypotheses are answered adequately with the obtained results. The language style is adequate.

From my point of view, just minor revisions have to be made prior to publication and I would like to congratulate the authors to this work.

---------------------------------------------------------------------------------

Major Compulsory Revisions (that the author must respond to before a decision on publication can be reached)

None.

---------------------------------------------------------------------------------

Minor Essential Revisions (such as missing labels on figures, or the wrong use of a term, which the author can be trusted to correct)

General:

Measurements are named “baseline”, “ARDS”, “PRM” etc. I would suggest to replace “ARDS” by “baseline II” as it is confusing in the text to have one measurement named to a condition of the animals, which is present for all following measurements.

Title / Abstract:

Title: ok.

Abstract: ok.
Background:
The hypothesis of this study is clearly expressed. However, please point out more clearly in background and discussion, that this study won’t give any evidence that higher oscillatory frequencies are more protective to the lung (as you have correctly mentioned in the conclusion section).

Methods:
Animal preparation, line 15:
Please add to the sentence “The inspiratory oxygen fraction …” “… throughout the entire experiment”.

Statistical analysis:
I do not see the rational why the frequencies have been modified in an incremental / decremental slope instead of a random order – please comment.

Was the av-ECLA circuit opened and closed in random order at each oscillatory frequency? Please describe this part more in detail in the manuscript.

Results:
Please reduce the text to relevant results and present the data in a puristic and descriptive manner. E.g.: “Pulmonary shunt fraction was significantly ameliorated between 6 Hz and 12 Hz during HFOV compared with HFOV / av-ECLA …” – In this sentence “ameliorated” should be replaced by “higher”, as a valuation of this effect does not make any sense – this is part of the concept of the av – ECLA.

Discussion:
Very well written. See comment above (background section).

Discretionary Revisions (which the author can choose to ignore)
None.

**Level of interest:** An article of outstanding merit and interest in its field

**Quality of written English:** Acceptable

**Statistical review:** No, the manuscript does not need to be seen by a statistician.
Declaration of competing interests:

I declare that I have no competing interests.