Reviewer's report

Title: Emulsified isoflurane preconditioning protects kidneys against ischemia/reperfusion injury in rats: a prospective randomized study

Version: 1  Date: 7 March 2014  
Reviewer: Anja Slikkerveer

Reviewer's report:

Major Compulsory Revisions
The use of the words “a prospective randomized study” in the title suggest that this is a clinical study. Please change the title. I suggest: Intravenous pretreatment with emulsified isoflurane preconditioning protects kidneys against ischemia/reperfusion injury in rats.

Page 11, line 7-13: the description of the histopathology needs to be improved. It does not indicate clearly in which part of the tubules the effect has been observed (if possible the S segment can be added), which cells were seen to be necrotic and in which way the findings form an understandable pathophysiology: did the bleeding or inflammation occur in conjunction with the necrosis? There is usually a logical sequence of events? Since this is a known pathology, it is highly advisable to describe the observations in the temporal order of occurrence.

Page 13, line 2: the term “acute renal failure” covers a wide variety of clinical entities. Please replace by more exact term.

Minor Essential Revisions
The authors seem to have focussed their assessment on the proximal tubule. Have the other parts of the kidneys (glomeruli, podocytes, distal tubule and collecting duct) also been included in the histopathology review? It would be beneficial for the article if such information could also be described. Quantification as for the proximal tubule is not considered necessary.

Page 5: line 10: “regimens”. Suggest to replace by “doses”. Only one regimen has been tested.

Page 8: can the authors indicate the rationale for the selecting of renal markers? Has there been a consideration to include novel markers like Kim-1, GST-alpha or delta?

Suggestion to use more standardized names for the paragraphs: e.g on Page 9: line 21: Renal Function parameters, page 10, line 9 markers of inflammation and line 18: markers of oxidative stress; page 11 line 6: Renal histopathology.

Page 11, line 7: delete “however” since the contrast here is expected.
Page 11, lines 14-16: please add the value of the histopathological score to the text.

Page 12: please add to the discussion in which respect this study is new. If my understanding is correct, then this is the first study on kidney I/R in the rat. But also the intravenous administration has not been done often. It is good to describe what is special about your study.

Page 15. Line 13 this sentence is incomplete: I suggest “ .....with 2 or 4 ml, partly protected against .....“.

Page 15, line 17: please replace “The” by “A”.

Page 15, line 19: please delete “our”.

Page 16, line 2: please delete , “ but Elso reduced.... current study”. Seems unnecessary repetition in this place.

Page 16, line 13-16: please rephrase into a clear statement. I suggest “Eiso can be administrated intravenously, which makes its clinical application more practical than inhalation of isoflurane. For this reason intravenous Eiso may gain more wider acceptance as a treatment option for ...”

Page 16, line 21: please replace “renal damage” by the more accurate proximal tubular damage”

Discretionary Revisions
Page 4: Line 13: add some relevant review references
Page 6 Line 20: “ bestowed” : suggest replacement by donated
Page 13, line 12 “ please check if “1 alveolar concentration” is the correct term .
Page 14, line 16: please delete “ in a previous study” . it does not add to the discussion.
Page 15, line 14-16: is there an understanding why the lowest dose is ineffective? If so please add some considerations.
Page 26-28: I suggest to combine table 2,3 and 4. The message from these table is the same, so they can be easily combined. I also suggest to avoid that the wording below the tables is a copy of the main body text. Please shorten.

Level of interest: An article of importance 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 I have no competing interests.