Reviewer's report

Title: Evaluation of Coronary Blood Flow during Cardiac Arrest with Circulation Maintained through Mechanical Chest Compressions in a Porcine Model

Version: 5 Date: 30 September 2011

Reviewer: John Bro Bro-Jeppesen

Reviewer's report:

The manuscript has improved significantly in this revised form, but there are still some phrases that I would like to be discussed and commented by the authors.

I was very pleased to find out that you have assessed the TIMI flow during mechanical chest compressions. I think that the correlation between TIMI flow and APV in clinical practice could be more interesting, than CPP as a theoretical marker of coronary flow. So it was disappointingly to find out that measuring the TIMI flow interfered with APV.

- Major Compulsory Revisions

Abstract:

The abstract conclusion should be revised accordingly to the conclusion in the manuscript and the aims for conducting the study; the correlation of Doppler flow and CPP during mechanical chest compression. The phrase “coronary blood flow can be normalized” is still speculative and should be revised.

Results:

In the revised phrase it seems that APV data from the ROSC period is now available as mentioned in the manuscript:

“Figure 1 shows the original Doppler curves from which APV was calculated during baseline, during the VF period without CC’s, during the VF with mechanical CC’s and during the ROSC period indicating not only an instant increase in peak velocity but Doppler flow through the whole cyclic period of CC’s.”

In the cover letter the results are described: “Following successful ROSC, CPP once again approaches baseline values while APV, after an initial increase, gradually decreases to return to the baseline values.”

I acknowledge your difficulties in measuring APV due to technical disturbances in the ROSC period, but figure 1 indicate that data, at least partly is present as well as your cover letter.

Why are these data not mentioned in the results? It seems that you have interpreted the data, but it is not commented in the discussion or limitations.
- Minor Essential Revisions

Results:
First paragraph, last sentence: Quite difficult to understand this sentence, besides that some minor spelling mistakes.

Figure 4:
The correlation of CPP and APV is calculated for the 10 minutes of mechanical chest compressions. In the figure it seems that there measure points extending the 10 minutes period. The overlaying figures are quite confusing, but might be due technical problems in creating the review file.

Level of interest: An article whose findings are important to those with closely related research interests

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