Reviewer’s report

Title: Rapid short-duration hypothermia with cold saline and endovascular cooling before reperfusion reduces microvascular obstruction and myocardial infarct size

Version: 1 Date: 30 October 2007

Reviewer: Daniel Sessler

Reviewer’s report:

General

Overall, this is an excellent study that uses sophisticated methodology to answer an important question. The methodology appears to be technically appropriate (although I am no expert in cardiology).

It would be helpful if the authors estimated the relative contributions of the cold intravenous fluid and the intravascular cooling catheter. In minor detail, but it would be helpful if the authors wrote the text into more paragraphs. Currently, some paragraphs go on for pages!

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

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

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Discretionary Revisions (which the author can choose to ignore)

Page 2, paragraph 2: It would be helpful if the authors specified exactly when hypothermia was induced in each of the hypothermia groups.

Page 2, paragraph 3: The first sentence of the results is unclear. It would be easier for readers if you simply listed the ischemic area divided by the area at risk for each of the three groups.

Page 5, paragraph 1: The authors might consider referencing a study by Rajek et al. that quantifies the affect of cold fluid administration on core temperature: Anesthesiology: 93: 629, 2000.

Page 6: Please replace “dinitrous” with “nitrous.”

Page 7, paragraph 3: Please specify how the randomization was conducted.

Page 8, paragraph 1: Please specify where core temperature was measured,
and how.

Page 11, paragraph 4: Throughout the manuscript, please replace “central temperature” with “core temperature.” The reason is that central implies central nervous system.

Page 12: This is the results section rather than the measurement section. It would thus be best if you deleted “measurement of” on the first header and “assessment of” from the second header. Throughout the manuscript, please replace “between the groups” with “among the groups.”

Page 13: The fourth sentence on this page, beginning “pre-reperfusion hypothermia…” is unclear. There are too many percentages floating around. I suggest simply listing the ischemic area divided by the area at risk for each of the three groups.

Figure 3: I suggest deleting this figure. It basically only contains three numbers and is not a result.

What next?: Accept after discretionary revisions

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 had stock options in a company related to this work (although not directly involved). However, the company no longer exists. I currently do not have any financial interest in this topic.