

Format for ANSWERING REVIEWERS

October 31, 2014



Dear Dr. Tian and the Editorial Board:

Please find enclosed the revised manuscript in Word format (file name: EPS Manuscript no 13153 minireview revision 1).

Title: Modeling cardiac arrest and resuscitation in the domestic pig

Authors: Brandon H. Cherry, Anh Q. Nguyen, Roger A. Hollrah, Albert H. Olivenia-Yurvati, Robert T. Mallet

Name of Journal: *World Journal of Critical Care Medicine*

ESPS Manuscript NO: 13153

We thank you and the editorial board for affording us an opportunity to respond to the reviewers' incisive comments, which have helped us improve the manuscript. Revisions are indicated by the use of red font in the manuscript text file.

Reviewer 1

This is an interesting and a comprehensive review. The main objective of this article as pointed out by the authors is to review studies on porcine cardiac arrest-CPR models reported in the literature, to describe clinically relevant phenomena observed during cardiac arrest and resuscitation in pigs, as well as to discuss numerous methodological considerations in modeling cardiac arrest/CPR. This review covered almost all the literature in this field, and considered the most recent findings in porcine cardiac arrest-CPR models. Overall the manuscript is well written and suggested to be adopted after correction. 1. On page 9 bottom, authors claim that CPR was administered by a pneumatic, piston-driven device, ensuring consistency of CPR administered across experiments. Authors should provide a reference to support this observation. 2. For easy understand the article by authors, it is better to include more related figures or tables in the revised manuscript.

Response:

We are grateful for the reviewer's kind comments regarding the quality and scope of the manuscript.

1. According to Tang *et al.* (reference 25), the pneumatic chest compression device (Thumper model 1000) "...was used to ensure consistency between study groups." Accordingly, we have modified the text [page 10, line 248] to specify that these mechanical devices "ensure consistent frequency and depth of chest compression."
2. We have added a detailed diagram of our porcine preparation (new Figure 1). The figure shows the details of this preparation, including instrumentation of the pig for monitoring hemodynamic variables and electrocardiogram, inducing cardiac arrest and infusing medications and experimental treatments. We hope this diagram will help the reader recognize the important features of this complex experimental preparation.

Reviewer 2

It was a pleasure to read this well-written manuscript regarding porcine models of cardiac arrest and resuscitation. The manuscript is well-organized, timely, and important. Some specific comments: p.7, full paragraph starting line 175: Would the authors care to describe when the coronary artery occlusion is reversed in the timeframe of experimental conditions, either in this paragraph or in the Table? p.14, line 349: "hypothermia" should be hyperthermia, I believe Figures and Tables: As there are only one each of Figure and Table, they need not be numbered and can simply be referred to as Figure or Table.

Response:

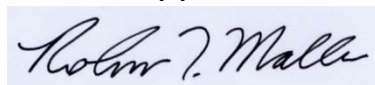
The reviewer's favorable comments regarding the manuscript are sincerely appreciated.

1. The paragraph has been expanded to specifically describe the duration of coronary occlusion in these models (page 8 lines 197-202). The new text indicates that in some studies, the occlusion is released upon defibrillation; in others, the occlusion is made permanent, producing a myocardial infarction.
2. Hyperthermia, not hypothermia: Thank you for catching this typographical error, which we have corrected (page 14, line 362).
3. In response to Reviewer 1's recommendation, we have added a second figure (Figure 1 of revised manuscript), depicting our porcine cardiac arrest preparation. Accordingly, the figures are numbered. However, there is only one table, so in accordance with the reviewer's recommendation, we have removed the table's numerical designation.

Among the revisions is the addition of a new figure (Figure 1) in response to Reviewer 1's recommendation #2. This figure was expertly prepared and contributed by Roger A. Hollrah, MS, a graduate trainee in our laboratory who helped us develop our cardiac arrest model, has searched the pertinent literature and is an active participant and contributor to our ongoing cardiac arrest research. Although in the original submission Mr. Hollrah's contributions were indicated in the acknowledgements, we feel Mr. Hollrah's additional substantial contributions exceed the threshold for authorship, and therefore we respectfully request Mr. Hollrah be included as an author of this manuscript.

We hope our manuscript is now acceptable for publication in *World Journal of Critical Care Medicine*.

Most sincerely yours,



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