WHASC – Animal Final Report

Date: 13 March 2018
Updated 25 April 2018

1. Protocol Number: FWH20150042A

2. Type of Research: Animal Research

3. Title: Protection from neuronal cell death caused by global cerebral ischemia induced by cardiac arrest followed by cardiopulmonary resuscitation in swine (Sus Scrofa)

4. Principal Investigator (PI):

Name	Rank	Date of IACUC Training	Branch of Service / Corps	Staff Resident Fellow Civilian	Department / Office Symbol	Email (if other than WHASC Outlook)	Phone	Pager
Joseph Maddry	O-4	July 2015	USAF	Staff	59EMDS/S GOED	joseph.maddry @gmail.com	210-916-3693	

5. Purpose: The purpose of this study was to evaluate the effects of compound tatCN19o in post cardiac arrest GCI in swine measured via 24 – observations 72 hour post injury global and microscopic neurohistopathology. Quality of life post cardiac arrest was measured using the neurological severity score (NSS) over a 72 hour period of observation. Mean arterial blood pressure at 60 minutes, lactate, and base excess, were also measured as secondary outcomes as well as potential biological markers for GCI (Neuron specific enolase, S100B and glial fibrillary acidic protein levels).

6. Results: Behavioral data suggest a difference in group by treatment. Animals treated with TAT appeared completely normal 4 hours after emergence from anesthesia (NSS 24) whereas control animals demonstrated observable behavioral changes for up to 17 hours (NSS 57). Serum biomarkers and histomorphologic data have not yet been analyzed.

7. How may your findings benefit the Air Force? Cardiac arrest and traumatic cardiac arrest are treated at FOBs, CACHEs, military and civilian hospitals. Cardiopulmonary resuscitation and emergency cardiovascular care is a relatively new field of investigation, however, the evidence that exists suggests that high quality chest compressions improve outcomes. Virtually all patients, military or civilian, young or old, that experience cardiac arrest will exhibit GCI. Mitigating the secondary effects of cardiac arrest would benefit all.

8. Number of Animals

Projected Enrollment of Animals at the Beginning of Study: 11

Actual Number of Animals Enrolled: 35
Reference WHASC progress report version *"Updated 31 October 2017"*** for a complete list of amendments with details. Progress report approval NOA dated 12 December 2017. **

9. Status of Animals Entered Into the Protocol:
The animals that have entered the study have been in general good health.

10. **Number of Animals Entered into the Study:**

	Number enrolled since last report	Total enrollment to date
Number of animals entered into the Study	9	35

11. Status of Funds: The original budget was approved for $21,000. All supplies were ordered and money was allocated to animal expenses.

12. Reason for Closure: The objectives of the live portion of the study were met but still pending analysis of the biomarkers and histological data collected.

13. Specific Problems: The biggest obstacle in this study was narrowing down the cardiac arrest time in order to produce a survivable model with significant global brain ischemia.

14. Publications and Presentations:

Presentations:

1. Poster was displayed at Science & Technology Leadership Conference. Langley AFB, Hampton VA. Dec 7, 2017

   This Presentation was not cleared by 59 CRD and Public Affairs

2. Abstract submitted to SURF 2018, San Antonio Tx for June 28-29, 2018 conference.

   This abstract was cleared by 59 CRD and Public Affairs

Publications: None

15. Exceptional Achievements: None

16. Signature of Principal Investigator:

MADDRY.JOSEPH.K.1179113950 Digitally signed by MADDRY.JOSEPH.K.1179113950 Date: 2018.04.26 08:14:33 -05'00'

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