Reviewer’s report

Title: Assessment of cerebral circulation in a porcine model of intravenously given E. coli induced fulminant sepsis

Version: 0 Date: 16 Nov 2016

Reviewer: Amit Sharma

Reviewer’s report:

In the study ‘‘Assessment of cerebral circulation in a porcine model of intravenously given E. coli induced fulminant sepsis’’ author has attempted to address cerebral hemodynamic changes occurring during the septic process. Using E.coli- sepsis model in combination with regular monitoring procedure (PiCCo monitoring, Doppler sonography) author has observed drastic changes in septic porcine animals as compared to controls. In addition, author claimed about possibility of vasoconstriction at cerebral arterioles.

Overall manuscript is interesting and use E.coli model of acute sepsis, which has been published already in several different model systems, was worth a try. But still the study design was not optimal and suffers some drawbacks.

Major comments-

1. The control group should have received culture medium without bacteria, saline is not optimal for such experiment.

2. Each time before administrating E.coli, blood should have been drawn for analysing few inflammatory markers also. This was the part where author missed opportunity to detect any possible interactions between induced infection and host immune system.

3. Author should have mentioned that if he evaluates any sign for bacterial/medium accumulation which could easily cause death in septic animals.

4. Author reported that out of 10 septic animals, only 7 died, but did not provide possible explanations for the ones which survive the similar treatment.

5. Table 2 provide summary of the whole septic group. In my opinion, the ones which survive septic shocks harbour the great interest and should have been checked at least for Haematological/Liver dysfunction marker.

Minor comments-
1. I would suggest writing time points of measurements as T0, T60, T120, T180… instead of T1, T2, T3…otherwise it's misleading as sample numbers.

2. Although not necessary but could attract more interest, if author would check if there was any viable E.Coli at early and late administrating phase.

3. For the reader outside of clinical sciences, normal ranges for the observed parameters should be mentioned in tables.

4. English language need to be improved

Overall, the claim of author about early vasoconstriction in porcine model lacks major evidences. Therefore, I cannot recommend this manuscript for publication in BMC Anaesthesiology.

Are the methods appropriate and well described?
If not, please specify what is required in your comments to the authors.

No

Does the work include the necessary controls?
If not, please specify which controls are required in your comments to the authors.

No

Are the conclusions drawn adequately supported by the data shown?
If not, please explain in your comments to the authors.

No

Are you able to assess any statistics in the manuscript or would you recommend an additional statistical review?
If an additional statistical review is recommended, please specify what aspects require further assessment in your comments to the editors.

Not relevant to this manuscript

Quality of written English
Please indicate the quality of language in the manuscript:

Needs some language corrections before being published

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