Reviewer’s report

Title: Effects of dexmedetomidine on porcine pulmonary artery vascular smooth muscle

Version: 1 Date: 09 Jun 2019

Reviewer: Jean-Pierre Estèbe

Reviewer's report:

The authors attempted to evaluate the effect of Dexmedetomidine (Dex) on smooth muscle (ex vivo endothelium-denuded porcine pulmonary arteries model). Unfortunately, a controlled evaluation at the end of each experiment (i.e. as at the beginning) does not allow to estimate the effect of exhaustion and/or of depletion effect which could modify the interpretation of the results (or discuss). To make it clear, specifies that each new experiment was carried out with new fresh preparations. For each step, give the number of manipulations performed. It must be discussed (see proofs) that the method of euthanasia does not introduce bias in the results (i.e. a major stress of the animal can produce the depletion of Ca 2+; discuss). A control with some pigs with an experimentally euthanized experiment would be useful for the discussion.

Throughout the manuscript, the authors refer to the possible use of Dex as a possible adjunct to regional anesthesia. Their intentions may be laudable, but it is a systemic effect that has been evaluated especially at blood level concentrations that cannot be observed during a local administration. It would be better to speak only about the systemic effect of Dex (maybe in case of accidental IV administration; the pharmacokinetics of resorption do not allow to observe these blood levels).

The rationale of the experimental plan must be clarified in the introduction of the Material and Methods chapter (i.e. alpha-2 + Vs. alpha-2 - etc. not at the end of this chapter or during the discussion). The reader will be more comfortable to follow the strategy of the experimental plan.

The quality of graphics with bar graphs needs to be improved.

In conclusion, it is after a clarification of these different elements (as baseline) that the results can be interpreted.

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.

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

Yes

**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.

I recommend additional statistical review

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

Needs some language corrections before being published

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