Reviewer’s report

Title: Cardiorespiratory effects of recruitment maneuvers and positive end expiratory pressure in an experimental context of acute lung injury and pulmonary hypertension

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Reviewer: Fabiano di Marco

Reviewer’s report:

Camille Doras et al. carried out a study aimed at evaluating how ALI and pulmonary hypertension influence the cardiorespiratory effect of recruitment manoeuvre and PEEP in animal model. The topic of the study is very interesting, since the “open the lung strategy” is still discussed. Some point need to be addressed.

Major Compulsory Revisions

In general the “open the lung and keep it open” strategy is accepted. However, so far there is not clear evidence that a different PEEP level (or RM) can modify mortality in ARDS: please discuss.

Introduction: “This hypothesis is based on the postulate that opening the lung in the presence of ALI will blunt the adverse pulmonary hemodynamic consequences of RM since the transmural pressure is expected to be lower”. This sentence should be clarified; since RM can compromise right heart function, why PH is expected to be protective? I think that the main concern is to better discuss PH (do you mean “post-capillary PH”, as indicate in your animal model?). If you mean “post-capillary PH”, please clarify this concept both in introduction and in discussion (otherwise the readers can be confused between pre- and post-capillary PH).

Results: “Over the initial pool of 19 rabbits, animals were excluded for some parameters, for technical or medical reasons. Seven rabbits were excluded for the right ventricle PV measurement due to defects of the catheter, and three animals were excluded from all data because of systemic failures during anesthesia.”: the final number of animals you evaluated should be clearly stated in this section.

Since the number of animals is limited, I will show single changes of the parameter you reported in figures.

Discussion:

In ARDS patients, the effect of PEEP on gas exchange, evaluated by lung diffusion for carbon monoxide (DLCO), that allows to measure capillary lung volume (Vc), has been previously evaluated (I will include this in discussion).

A section about “study limitation” is missing; do you think the number of experiments you performed is enough to support your conclusion?
“These findings imply that adaptation of open lung strategy can be safely considered even in the presence of PHT.” Authors provided an animal model study; I would be more cautious in this conclusion.

**Level of interest:** An article whose findings are important to those with closely related research interests

**Quality of written English:** Needs some language corrections before being published

**Statistical review:** No, the manuscript does not need to be seen by a statistician.

**Declaration of competing interests:**

I declare that I have no competing interests