Title: Comparison of the Effects of Moderate and Severe Hypercapnic Acidosis on Ventilation-Induced Lung Injury

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Author's response to reviews: see over
Dear Prof. Tom Rowles:

We are pleased to submit the manuscript entitled “Comparison of the Effects of Moderate and Severe Hypercapnic Acidosis on Ventilation-Induced Lung Injury” by Yang et al., for consideration in BMC Anesthesiology. According to the reviewer’s comment, we have revised our manuscript to include line and page numbers. The major messages are follows:

We have proved that hypercapnic acidosis (a PaCO$_2$ of 80-100 mmHg) protects against ventilator-induced lung injury in rats. However, there remains uncertainty regarding the appropriate target PaCO$_2$ or if greater CO$_2$ “doses” (PaCO$_2$>100 mmHg) demonstrate this effect. We determined whether severe acute hypercapnic acidosis can reduce stretch-induced injury, as well as the role of nuclear factor-κB (NF-κB) in the effects of acute hypercapnic acidosis. We found that moderate hypercapnic acidosis (PaCO$_2$ maintained at 80-100 mmHg) has a greater protective effect on high-pressure ventilation-induced inflammatory injury. The potential mechanisms may involve alterations in NF-κB activity.

We feel that the presented data adds valuable and clinically relevant information to the question when CO$_2$ should be applied in upcoming clinical studies.

The undersigned authors warrant that the article is original, and has not been published previously.

None of the authors has financial affiliation which could employ any conflict of interest.

We hope that this material will be suitable for publication in BMC Anesthesiology.

Sincerely yours,

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