

## Is intraoperative low tidal volume ventilation worse in patients with preexisting systemic inflammatory response? Our insights to Chugh et al. study

Dear Madam,

Low tidal volume, that is, 5–8 mL/kg of ideal body weight (IBW), has been safely used and with better results in patients with or without acute respiratory distress syndrome.<sup>[1,2]</sup> In this context, a recently published randomized controlled double-blinded trial by Chugh *et al.*<sup>[3]</sup> interested us. The authors aimed to determine whether intraoperative ventilation using high tidal volume (10 mL/kg IBW) versus a lung-protective strategy using low tidal volume (6 mL/kg IBW) along with positive end-expiratory pressure (PEEP) of 10 cmH<sub>2</sub>O, improves postoperative organ dysfunction in patients suffering from intestinal perforation peritonitis-induced systemic inflammatory response syndrome. They showed that the use of low tidal volume along with PEEP is associated with worse postoperative organ functions as compared to high tidal volume without PEEP, indicated by higher aggregate SOFA score (3 days) as well as the score on the first postoperative day. The result is indeed exciting; however, we found some limitations in this study which are very critical to consider before we apply their results in our clinical practice.

Firstly, the PEEP levels used by the authors need attention. In this study, one group had no PEEP and the other a PEEP of 10 cmH<sub>2</sub>O. The use of a high PEEP increases abdominal pressure and provokes complications such as intraoperative circulatory depression as evident from the PROVEHILO trial.<sup>[4]</sup> The PROVEHILO trial compared high (12 cmH<sub>2</sub>O) versus low (2 cmH<sub>2</sub>O) PEEP during general anesthesia for open abdominal surgery at the same tidal volume (8 mL/kg IBW) and concluded that an intraoperative protective ventilation strategy should include a low PEEP, without recruitment maneuvers.<sup>[4]</sup> Therefore, we believe that a lower amount of PEEP was indicated in otherwise non-hypoxemic patients with relatively healthy lungs of the cohort. Further, to minimize this confounder, the two groups should have been compared with the same PEEP. Indeed

one parameter of the Chugh et al study should have been similar in both groups to remove confounders.

Secondly, we know that the higher the surgeon experience, the lower is the rate of complications.<sup>[5]</sup> We could not find information on the surgeon's experience in both groups if in one group, patients were operated by more experienced surgeons, shouldn't it have expected better results? We hope these are taken into account in further studies.

We applaud the authors' work as the study has some important perspectives on the management of abdominal surgical patients, nevertheless, we would like to have our suggestions taken into consideration in the next studies.

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### Conflicts of interest

There are no conflicts of interest.

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