

Reviewer's comments:

Company Editor-in-Chief:

I have reviewed the Peer-Review Report, full text of the manuscript, and the relevant ethics documents, all of which have met the basic publishing requirements of the World Journal of Critical Care Medicine, and the manuscript is conditionally accepted. I have sent the manuscript to the author(s) for its revision according to the Peer-Review Report, Editorial Office's comments and the Criteria for Manuscript Revision by Authors. Authors are required to provide standard three-line tables, that is, only the top line, bottom line, and column line are displayed, while other table lines are hidden. The contents of each cell in the table should conform to the editing specifications, and the lines of each row or column of the table should be aligned. Do not use carriage returns or spaces to replace lines or vertical lines and do not segment cell content. When revising the manuscript, the author must supplement and improve the highlights of the latest cutting-edge research results, thereby further improving the content of the manuscript. To this end, authors are advised to apply a new tool, the RCA. RCA is an artificial intelligence technology-based open multidisciplinary citation analysis database. In it, upon obtaining search results from the keywords entered by the author, "Impact Index Per Article" under "Ranked by" should be selected to find the latest highlight articles, which can then be used to further improve an article under preparation/peer-review/revision. Please visit our RCA database for more information at: <https://www.referencecitationanalysis.com/>.

Answer:

We thank you and the journal for your conditional acceptance of our manuscript. We have taken care to address all your pertinent comments and believe it has improved the quality of our study. The following changes have been made:

- Table 1 now has a label "*Table 1: Findings from clinical studies regarding Driving Pressure*", a legends section at the end formatted according to journal requirements "**ARDS: Acute Respiratory Distress Syndrome; PEEP=Positive End Expiratory Pressure; ICU=Intensive Care Unit; ΔP =Change in pressure; MV=Mechanical Ventilation; DP=Driving Pressure; OLV=One-lung ventilation; PPCS=Postoperative pulmonary complications; ECMO=Extracorporeal membrane oxygenation; PBW=Predicted body weight.*" and has been formatted into a three-line format as requested. (Pages 14-18).
- We also checked RCA for any additional studies to include.

Reviewer #1:

Scientific Quality: Grade C (Good)

Language Quality: Grade B (Minor language polishing)

Conclusion: Minor revision

Specific Comments to Authors: This minireview introduced the basic principle, mechanism, impact factors, clinical relevance and value in different statuses of driving pressure. It's overall comprehensive. 1. In sections "A) FACTORS THAT INFLUENCE THE MECHANICS OF

ARTIFICIAL VENTILATION" and "B) MODIFIABLE INPUTS IN ARTIFICIAL MECHANICAL VENTILATION", you cannot just list the factors and their definitions. How do these factors affect mechanical ventilation? What's the relationship between them and driving pressure? 2. Please add the table legend and revise the table to a three-line format.

Answer:

Thank you for your valuable comments. We believe it has improved the overall quality of the manuscript. We have carefully reviewed all the suggestions and made the following changes:

- In section A, the following additional text has been added to address the role of the parameters in mechanical ventilation and their relationship with driving pressure:
 - While small levels of impedance do not always mean underventilation of lung tissues, higher levels of impedance require higher driving pressures for effective ventilation. (Page 4)
 - As a rule, high levels of compliance, and therefore lower levels of elastance, allow for less effective mechanical ventilation at lower driving pressures. Hence, in certain conditions that alter these mechanics, such as emphysema which leads to higher compliance, higher levels of driving pressure are required to maintain adequate levels of ventilation. (Page 4)
 - Airway pressure dictates the driving pressures required for adequate ventilation in all patients. Higher alveolar pressures and general airway resistance require increasing levels of driving pressure to maintain effective ventilation. (Page 5)
 - This pressure approximates the mean peak alveolar pressure. [25,26] As noted previously, resting high plateau pressures are incorporated in driving pressure calculations in order to identify requirements for overcoming inside pressures. (Page 5)
 - Driving pressure is the foundational pillar of mechanical ventilation. Adequate driving pressure levels are needed for effective air delivery in order to overcome resistances, high inner pressures, and losses during delivery. (Page 5)
- In section B, the following additional text has been added:
 - Higher tidal volumes increase driving pressures. This can be modified as needed. (Page 6)
 - Therefore, lower levels of PEEP increase driving pressures. (Page 6)
 - Respiratory rate is a component of mechanical power along with driving pressure. These levels can be changed depending on ventilation requirements and desired mechanical power metrics. (Page 7)
 - Mechanical power has recently emerged as a novel and promising predictor of ventilator-induced lung injury VILI. While its incorporation clinically is yet to be widened, it has shown promise. Maintaining lower rates of mechanical power by considering the dynamic metrics it incorporates can reduce rates of VILI. (Page 7)
- Table legends and three-line formatting of table was also done as per both reviewers' suggestion.

We hope the following changes are in line with the reviewers suggestions and we would like to thank both reviewers for their valuable input and their time.