



Letter to the editor

Continuous positive airway pressure helmet in patients with ARDS due to COVID-19 pneumonia: Insights about a therapy-monitoring protocol



To the Editor

We have read with great interest the study by Privitera et al.¹ about the use of helmet for continuous positive airway pressure in patients with respiratory failure due to COVID-19 pneumonia. This study is clear in its structure, but we consider that some aspects should be clarified.

First, breathing pattern and respiratory rate seem to be the key guiding element for the adjustment and decision-making along with oxygen saturation.^{2,3} However, in our opinion, there are other factors that could interfere with respiratory rate (fever, anxiety, discomfort, or pain). It is obviously a very sensitive factor, but not very specific, especially in an emergency department setting.³

Authors did not analyse patients' compliance and comfort regarding the helmet interface, and though it has been said that 11 patients (21.1% of the total) received morphine, the reason is not explained.

Then, the subgroup of helmet failure population and causes of Helmet failure as an interface are not well defined.

On this line, these two aspects could be key remarks for a proper helmet interface evaluation⁴ and could provide prevention tools from failure.

Second, at the time of this study, little data on thromboembolic complications from COVID-19 and use of low-molecular-weight heparin were already available in literature. We wondered if this therapy was used by the authors at that time and their results.⁵

This study confirms the excellent results observed with this type of interface in patients with COVID-19, when a strict protocol of use is applied, highlighting the benefits of a correct monitoring.

Conflict of interest

The authors declare that they have no known competing financial interests or personal relationships that could have appeared to influence the work reported in this paper.

References

- [1] Privitera D, Capsoni N, Mazzone A, Airoldi C, Angaroni L, Pierotti, et al. Nursing evaluation during treatment with helmet continuous positive airway pressure in patients with respiratory failure due to COVID-19 pneumonia: a case series. *Aust Crit Care* 2022;35:46–51. <https://doi.org/10.1016/j.aucc.2021.10.001>.
- [2] Brambilla AM, Aliberti S, Prina E, Nicoli F, Del Forno M, Nava S, et al. Helmet CPAP vs. oxygen therapy in severe hypoxemic respiratory failure due to pneumonia. *Intensive Care Med* 2014 Jul;40(7):942–9. <https://doi.org/10.1007/s00134-014-3325-5>. Epub 2014 May 10.
- [3] Tobert DG, Simon PM, Stroetz RW, Hubmayr RD. The determinants of respiratory rate during mechanical ventilation. *Am J Respir Crit Care Med* 1997 Feb;155(2):485–92. <https://doi.org/10.1164/ajrccm.155.2.9032183>.
- [4] Liu Q, Gao Y, Chen R, Cheng Z Noninvasive ventilation with helmet versus control strategy in patients with acute respiratory failure: a systematic review and meta-analysis of controlled studies. *Crit Care* 2016 Aug 23;20(1):265. <https://doi.org/10.1186/s13054-016-1449-4>.
- [5] Tang N, Bai H, Chen X, Gong J, Li D, Sun Z. Anticoagulant treatment is associated with decreased mortality in severe coronavirus disease 2019 patients with coagulopathy. *J Thromb Haemostasis* 2020;18:1094–9. <https://doi.org/10.1111/jth.14817>.

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3 March 2022