



## Efficacy and feasibility of awake proning in COVID-19: are we missing the other side of the same coin?

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Dear Editor,

The study by Asia et al. [1] on the effect of awake prone positioning on oxygenation in acutely hypoxemic patients requiring respiratory support by non-invasive ventilation (NIV) or high-flow nasal cannula (HFNC) is a timely addition to the medical literature. We would welcome the authors views on several details.

Firstly, the ratio of respiratory rate to oxygenation (ROX) index has been validated in acute respiratory distress syndrome (ARDS) treated with HFNC. Improvement in the ROX index during awake proning in patients being managed on NIV therapy may suggest halting the disease's progression by reducing the work of breathing [2]. We wonder whether the authors considered including this parameter in their study or not.

Secondly, although HFNC delivers a lower level of peak airway pressure than NIV and thus may mitigate ventilation-induced lung injury (VILI) in ARDS patients with elevated transpulmonary pressures, the improvement in partial pressure of arterial oxygen tension ( $\text{PaO}_2$ )/fraction of inspired oxygen concentration ( $\text{FiO}_2$ ) (P/F) during awake proning with HFNC is lower than NIV [3]. Perhaps the authors might have mentioned the proportion of patients who received NIV and HFNC to understand the overall impact on P/F and VILI.

Thirdly, while awake proning improves P/F, this benefit is lost after reverting the patient to supine position [4]. This shows that the benefits of lung recruitment achieved during awake proning can be brief. Also, earlier proning of patients with severe COVID-19 (as suggested by higher inflammatory markers) is found to improve maintenance of oxygenation after unproning [4]. We wonder if the authors have found this phenomenon during proning and unproning of their patients or not.

Fourthly, although the authors mainly assessed the impact of awake proning on oxygenation, hypercarbia is also commonly associated with moderate to severe ARDS. Thus, it would be interesting to know whether they evaluated this aspect while assessing the arterial blood gases as their study population contained 26% and 8% representation of patients with asthma and chronic obstructive pulmonary disease, respectively.

Lastly, prone positioning can improve oxygenation at the cost of pressure effects, line dislodgement, breathing discomfort, and thickening of diaphragm as seen on ultrasound [5]. Although the authors reported tolerance of awake proning, the assessment of comfort scores and sedation would be instructive. Ultrasound machines are readily available in intensive care units now. So, we also would like to know whether the authors have assessed diaphragmatic thickening or not.

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Awake proning in ARDS induced by COVID-19 is now a commonly used rescue measure, but the patients likely to benefit from its early initiation are yet to be identified. While we applaud the authors for their outstanding work, we would welcome clarity on these issues.

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## Declarations

**Conflict of interest** The authors declare no competing interests.

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