We read with interest the study done by Rossi et al. recently published in Intensive Care Medicine [1]. In this study, the authors have studied the anatomical and physiological bases of oxygenation response to proning and recruitment maneuvers (RM) in acute respiratory distress syndrome (ARDS), by assessing gas exchange, lung mechanics, computed tomography (CT) chest scans and hemodynamics in coronavirus 2019 disease (COVID-19) patients with varied time period (3–24 days after hospital admission) [1]. Their findings are suggestive of lesser benefit of recruitment on oxygenation by the third week of illness in COVID ARDS. Moreover, they have been diligent enough to calculate consolidated versus atelectatic segments separately by assessing the response in non-aerated zones to lung recruitment and have also looked at ratio between perfusion of non-aerated and aerated area of lungs (apparent perfusion ratio) to assess the influence of venous admixture on oxygenation response. An important observation worth appreciating in this study is the change in distribution of perfusion with change in position as noticed during proning, unlike the preferential dorsal perfusion seen in non-COVID ARDS, which may have relevant clinical implications in COVID-19 patients [2]. However, we would like to highlight a few comments which might have influenced their findings.

First, the patients were already in third–fourth week of illness at the time of study inclusion (mean days from symptom onset to study day: 18 ± 8). The authors analyzed their findings as per days from hospital admission, but not from the perspective of actual days of illness, which might be well beyond the fourth week of illness. This may mean that COVID ARDS lung shows recruitability even at later stages of ARDS owing to its varying phenotypes, hinting towards an individualized approach in each patient based on underlying anatomical–physiological response to lung recruitment manoeuvres.

Second, the current study compared benefits of recruitment from the baseline non-aerated tissue and gas exchange variables were assessed initially at 5 min of supine position at positive post-expiratory pressure (PEEP) 5 cmH2O (Supine-5), which could have been easily influenced by a possible left ventricle dysfunction and extra-vascular lung volume in their study population [3].

Third, assessment at 5 min after prone position (Prone-5) would not be an appropriate duration to get beneficial effects of proning [4]. That is why the study had reported high non-responders to proning (65% patients considering ΔPaO2/FiO2 of 20 mmHg).

Fourth, knowing if the patients were in shock at baseline or had hemodynamic instability during the RM or proning would have been useful. Improvement in oxygenation may not only be secondary to reduction in venous admixture as a result of recruitment of collapsed alveoli but it may also happen as a result of reduction in cardiac output leading to a decrease in the physiological shunt in lungs [5].

Finally, it is still a debatable concept whether lung collapse is always detrimental as it may be an adaptive response of the body during ARDS. How much lung needs to be opened up is an area of further research [6].
Author details
1 Department of Critical Care Medicine, Sanjay Gandhi Postgraduate Institute of Medical Sciences (SGPGiMS), Lucknow, Uttar Pradesh 226014, India.
2 Department of Critical Care Medicine, King George’s Medical University, Lucknow, Uttar Pradesh 226003, India. 3 Institute of Neuroscience, Kolkata, India.

Author contributions
Material preparation, data collection and analysis were performed by MG, SNM, SSS, and NC. The first draft of the manuscript was written by MG and SNM and all authors commented on previous versions of the manuscript. MG and SNM critically analyzed the manuscript. All authors read and approved the final manuscript.

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