Effect of prone positioning without mechanical ventilation in COVID-19 patients with acute respiratory failure

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Shareable abstract (@ERSpublications)
The mechanism of prone positioning in COVID-19 is quite different from that in ARDS and the severity of respiratory failure plays a key role in the efficacy of prone positioning in COVID-19
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To the Editor:

The efficacy of prone positioning (PP) without mechanical ventilation in coronavirus disease 2019 (COVID-19) patients with acute respiratory failure (ARF) remains uncertain. In a recent trial including 827 non-intubated COVID-19 patients with high baseline peripheral arterial oxygen saturation (S_{pO_2})/inspiratory oxygen fraction (F_{IO_2}) (around 200), Perez-Nieto *et al*. [1] reported that PP use was associated with lower intubation and mortality risk. However, other two large trials [2, 3] have conversely reported that compared with usual care, PP showed no benefit among non-intubated COVID-19 patients with ARF. The reasons for these inconsistent findings remain unknown. We noted that a subgroup analysis of one trial [3] reporting negative outcomes found that PP was associated with decreased intubation rate in the subgroup with S_{pO_2}/F_{IO_2} >150 (HR 0.44, 95% CI 0.23 to 0.87), while this was nonsignificant in the subgroup with S_{pO_2}/F_{IO_2} <150 (p-value for interaction 0.03). In addition, the baseline S_{pO_2}/F_{IO_2} is also higher in the trial reporting positive outcomes [1] than in the trial with negative findings [3] (baseline S_{pO_2}/F_{IO_2} 200 [1] *versus* 135 [3]).