

Opinion on an Article Titled: Prone Positioning and Survival in Mechanically Ventilated Patients With Coronavirus Disease 2019–Related Respiratory Failure

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July 25, 2023

We have read the article “Prone Positioning and Survival in Mechanically Ventilated Patients With Coronavirus Disease 2019–Related Respiratory Failure” by Mathews et al., published in the critical care medicine journal in July 2021(1). We want to congratulate the authors for this successful publication and make some contributions. In the article, it has been mentioned in the conclusion that “In-hospital mortality was lower in mechanically ventilated hypoxemic patients with coronavirus disease 2019 treated with early proning compared with patients whose treatment did not include early proning”. The results showed that “Corticosteroids were used on ICU day one more often in prone versus nonprone patients (21.2% vs. 13.3%)”. Reviewing the results and patient characteristics, we found unmatched patient populations in both groups that could potentially affect the results, hence the conclusion (1).

The evidence of steroids in COVID-19 pneumonia was published in the literature early in the COVID-19 pandemic. The Recovery trial, published in February 2021, showed that in the dexamethasone group, the incidence of death was lower than that in the usual care group among patients receiving invasive mechanical ventilation (29.3% vs. 41.4%; rate ratio, 0.64; 95% CI, 0.51 to 0.81) (2). A meta-analysis published in September 2020 looked at the association between administering corticosteroids compared with usual care or placebo and 28-day all-cause mortality. It showed the mortality benefit of using steroids (OR, 0.66 [95% CI, 0.53-0.82]); the mortality benefit was consistent with various types of steroids (3). We conducted a recent meta-analysis of COVID-19 patients and found no mortality benefit of prone ventilation in intubated COVID-19 patient (4; 5). We addressed our concerns in other published studies (6; 7).

In Mathews et al.’s study, in the prone early group, 149 patients received steroids out of 702 (21.2%), while in the no early prone group, 217 patients received steroids out of 1636 (13.3%). By using the Chi-square analysis, the p -value is < 0.00001 . On further looking at the study Supplementary Digital Content, in reviewing table 5, titled “Multivariable Cox model for death among patients included in the target trial emulation of early proning initiation versus non-early proning initiation,” when using steroids, the outcome of the study became insignificant with the result of the odds ratio of 1.07 (0.91-1.26) and survival favors non-early prone group. This result concurs with another published study on early-prone ventilation in COVID-19 patients. Among 6350 ICU patients with COVID-19, they found no association between early use of prone positioning and survival in patients on mechanical ventilation with severe hypoxemia on ICU admission (8).

We want to address and express our opinion regarding this limitation that could affect the outcome and the result of the study. The study should have included the difference between both groups in the limitation section. This difference would have affected Mathews et al.’s study outcome, and the conclusion should have been rectified.

References

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