

Category :**Respiratory: ARDS**

A17 - Pneumomediastinum in ARDS(Acute Respiratory Distress Syndrome) caused by COVID-19(Corona Virus Disease 2019): is protective lung ventilation really a weapon to our advantage?

F Righetti¹ ; E Colombaroli²

¹Intensive Care Unit, Emergency Department, Fracastoro Hospital, Emergency Department, San Bonifacio, Verona, Italy, ²Intensive Care Unit, Emergency Department, Fracastoro Hospital, San bonifacio, verona, Italy

Introduction:

In mechanically ventilated patients suffering from ARDS as a consequence of COVID-19 interstitial pneumonia, we have often noted pneumomediastinum development despite the use of protective mechanical ventilation[1]. The purpose of this study is to determine whether the incidence of pneumomediastinum in patients with COVID-19 ARDS was higher than in ARDS patients without COVID-19 and whether this difference could be attributed to barotrauma or pulmonary fragility.

Methods:

We divided the patients into two groups: Group A(patients with ARDS from COVID-19), Group B(patients with ARDS from other causes). All patients were admitted to ICU(Intensive Care Unit) and treated with protective mechanical ventilation-tidal volume 4-6ml/kg of IBW(Ideal Body Weight), plateau pressure \leq 28 cmH₂O, driving pressure \leq 12-14 cmH₂O.

Results:

In group A, pneumomediastinum occurred in 8 of 59 patients(13.5%) while in group B in 1 of 59(1.6%) (p<0.001). Mortality was 58% in group A patients while 48% in group B patients(p=0.32). In group A the mean of tidal volume used was 5.6 \pm 0.7 ml/kg of IBW, the mean of plateau pressure 22 \pm 5 cmH₂O and driving pressure 11 \pm 4 cmH₂O. In group B the mean of tidal volume used was 5.9 \pm 0.5 ml/kg of IBW, the mean of plateau pressure 23 \pm 4 cmH₂O and driving pressure 10 \pm 3 cmH₂O.

Conclusion:

The incidence of pneumomediastinum was approximately 8 times higher in the group of patients with COVID-19 ARDS despite the use of protective ventilation. This complication could be the consequence of greater lung fragility in patients with COVID-19 ARDS rather than in barotrauma which refers to elevated transpulmonary pressure.

References:

[1]McGuinness G et al. High incidence of barotrauma in patients with Covid-19 infection on invasive mechanical ventilation. Radiology 2020; 297: E252-E262.