

Category :**Respiratory: ARDS**

A237 - Compliance of the respiratory system in patients with covid19 and non-covid19 ards

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Introduction:

The comparison of respiratory system compliance (Crs) between COVID19 (Corona Virus disease 2019) non-COVID19 ARDS (acute respiratory distress syndrome) patients has been the object of debate, but few studies have evaluated it when considering applied positive end expiratory pressure (PEEP), which is one of the known determinants of Crs itself. The aim of this study was to compare Crs taking into account the applied PEEP[1].

Methods:

Two cohorts of patients were created: those with COVID-ARDS and those with non-COVID ARDS. In the whole sample the association between Crs and type of ARDS at different PEEP levels was adjusted for anthropometric and clinical variables. As secondary analyses, patients were matched for predicted functional residual capacity and the same association was assessed. Moreover, the association between Crs and type of ARDS was reassessed at predefined PEEP level of 0, 5, 8, 12, and 15 cmH₂O with a propensity score-weighted linear model.

Results:

263 patients were included in the study, 159 patients with COVID-ARDS and 104 with non-COVID ARDS. The association between Crs and type of ARDS was not significant in both the complete cohorts ($p = 0.11$) and in the matched cohorts ($p = 0.96$). This was true also for the propensity score weighted association at PEEP 5, 8, 12 and 15 cmH₂O, while it was statistically significant at PEEP 0 (with a median difference of 2ml/cmH₂O, which is not clinically significant).

Conclusion:

The compliance of the respiratory system is similar between COVID ARDS and non-COVID ARDS when calculated at the same PEEP level and while taking into account patients' anthropometric characteristics.

References:

[1]Grasselli G, et al. Pathophysiology of COVID-19-associated acute respiratory distress syndrome: a multicentre prospective observational study. *Lancet Respir Med.* 2020;8:1201–8.