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Spotlight on Special Topics

REDUCED RV FUNCTION IS ASSOCIATED WITH MORTALITY IN COVID-19 PATIENTS TREATED WITH ECMO

Poster Contributions

Saturday, May 15, 2021, 9:45 a.m.-10:30 a.m.

Session Title: Spotlight on Special Topics: COVID 1

Abstract Category: 61. Spotlight on Special Topics: Coronavirus Disease (COVID-19)

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Background: COVID-19 pneumonia requiring extra-corporeal membrane oxygenation (ECMO) carries a 45% in-hospital mortality based on ELSO data. The echocardiographic characteristics associated with increased mortality have not been previously described. We report institutional incidence of RV failure in critically ill COVID-19 patients requiring ECMO and its correlation with mortality.

Methods: We identified 41 patients with COVID-19 infection cannulated for ECMO between March 15 and October 20, 2020. Among these patients, 22 had a transthoracic echocardiogram (TTE) completed while on ECMO (veno-venous (VV) = 18, veno-arterial (VA) = 4) further reviewed for RV dysfunction.

Results: Of the 22 patients included, 11 survived and 11 died. Decreased RV function was noted in the group who died with a statistically significant reduction in tricuspid annular plane systolic excursion (TAPSE) (1.3 vs 1.9 cm, t-test $p = 0.01$) and lower fractional area change (FAC). Clinical RV failure was noted in 64% of deceased patients vs 27% in those who survived.

Conclusion: Acute cor pulmonale occurs in 9.6%-25% of ARDS. Prior reports suggest a need for conversion to VAV ECMO in 3.3% of ARDS patients. In our cohort, a total of 3 patients (2 in deceased, 1 in survived) were converted due to RV failure on VV ECMO. The development of RV failure in COVID-19 on ECMO portends a poor prognosis based on our analysis. Further studies are required to understand the etiology and progression of RV failure for improved prevention and survival.
