

Category : **Respiratory: ARDS**

A228 - Relationship of lung oxygenation to timing of hemoadsorption therapy initiation in covid-19 patients requiring extracorporeal mechanical oxygenation (ecmo): an observational analysis from the cytosorb therapy in covid-19 (ctc) registry

J Hayanga¹; T Song²; L Durham³; L Garrison⁴; P Nelson⁵; H Kroger⁵; Z Molnar⁶; E Deliargyris⁵; N Moazami⁷

¹West Virginia University School of Medicine, Morgantown, United States, ²University of Chicago Medicine, Chicago, United States, ³Medical College of Wisconsin, Milwaukee, United States, ⁴Franciscan Health Indianapolis, Indianapolis, United States, ⁵CytoSorbents Corporation, Princeton, United States, ⁶CytoSorbents Europe, Berlin, Germany, ⁷New York University School of Medicine, New York, United States

Introduction:

The multicenter CTC Registry study collected patient-level data in COVID-19 patients receiving CytoSorb therapy under FDA Emergency Use Authorization. An earlier report on the first 52 CTC patients on ECMO treated with CytoSorb showed 69% overall survival [1]. The current analysis focuses on changes in pulmonary function relative to the time of CytoSorb therapy.

Methods:

A total of 56 patients from 5 U.S. centers were included. Data on demographics, mechanical ventilation (MV), ECMO, and arterial blood gases during CytoSorb therapy were analyzed. Linear regression was used to evaluate the relationship between the timing of initiation of CytoSorb therapy to lung oxygenation according to changes in PaO₂/FiO₂ ratio.

Results:

In the current analysis, 71% (40/56) overall survival was observed. For these survivors, time to CytoSorb start after ICU admission, MV start, and ECMO start was 138 ± 171.3 hours, 83 ± 111.0 hours, and 55 ± 156.5 hours, respectively, with mean duration of CytoSorb therapy of 83 ± 29.1 hours. At the first 24 hours following CytoSorb therapy, oxygenation was improved evidenced by decreased MV FiO₂ and ECMO FdO₂ requirements and an increased PaO₂/FiO₂ ratio (90.2 ± 58.13 mmHg to 166.3 ± 98.67 mmHg, P<0.001, N=21). Linear regression analysis suggested that earlier initiation of CytoSorb therapy following ICU admission may be correlated to greater improvements in PaO₂/FiO₂ ratio (r=-0.37, P=0.103), however, this trend did not achieve statistical significance.

Conclusion:

High survival rates have been observed with adjunct CytoSorb therapy in critically ill COVID-19 patients on ECMO. The current analysis suggests that early initiation of hemoadsorption following ICU admission may contribute to earlier improvements in native lung oxygenation.

References:

[1] Song T et al. Frontiers In Medicine doi : 10.3389/fmed.2021.773461