Adult Veno-Venous (VV) Extracorporeal Membrane Oxygenation (ECMO) Eligibility Criteria for COVID-19 ARDS

MINNESOTA ECMO CONSORTIUM
5/6/2021

Inclusion Criteria1

Severe Acute respiratory distress syndrome (ARDS)
- Does the patient fulfill oxygenation and/or ventilation criteria?
  - On FIO2 ≥ 80%, PEEP ≥ 10, and VT ≤ 6 mL/kg PBW
    - PaO2/FIO2 < 50 for more than 3 hours
    - PaO2/FIO2 < 80 for more than 6 hours
    - pH < 7.25, PaCO2 > 60 mm Hg with RR > 35 for more than 6 hours
- Has mechanical ventilation been optimized, including trial of neuromuscular blockade and prone position?

Other Indications
Other indications such as severe hypercarbic respiratory failure (e.g. status asthmaticus) or severe air leak syndrome considered on case-by-case basis.

Exclusion Criteria2
- > 7 days of high intensity (potentially injurious) mechanical ventilation
- Unacceptable risk of hemorrhage with therapeutic anticoagulation
- Age > 60
- Marker(s) of poor short-term prognosis in relation to underlying disease
  - Multi-system organ failure
  - Pre-ECMO cardiac arrest
  - Suspected severe hypoxic-ischemic brain injury

---

1 Adapted from the EOLIA trial (DOI: 10.1056/NEJMoa1800385) and Bullen et al (DOI: 10.1016/j.chest.2020.04.016).
2 For evidence of the prognostic implications of exclusion criteria in the setting of COVID-19, see Barbaro et al (DOI: 10.1016/S0140-6736(20)32008-0).
ADULT VV ECMO ELIGIBILITY CRITERIA

- Premorbid conditions that would limit life expectancy to less than a few years and/or preclude a reasonable chance of recovery after ECMO support
  - Advanced malignancy
  - Advanced chronic organ failure (e.g. liver, kidney, lung, immunocompromised state)
  - Progressive neurodegenerative diseases (e.g. ALS, Alzheimer’s dementia)

Minnesota Department of Health
Center for Emergency Preparedness and Response
625 Robert St NE
St. Paul, MN 55155
651-201-5700
health.epr@state.mn.us
https://www.health.state.mn.us/communities/ep/index.html

05/06/21