

Extra Corporeal Membrane Oxygenation (ECMO) **CALL EARLY** during COVID PANDEMIC

Suggested Indications for VV-ECMO

Refer early when

- PaO₂:FiO₂ <120 mmHg for >6 hours with inability to maintain lung protective ventilation (LPV)
- PaO₂:FiO₂ <100 mmHg for >3 hours even with maintenance of LPV

Consider cannulation when

- PaO₂:FiO₂ <80 mmHg for >6 hours
- PaO₂:FiO₂ <50 mmHg for >3 hours
- Arterial pH of <7.25 with PaCO₂ ≥60 mm Hg for >6 hours

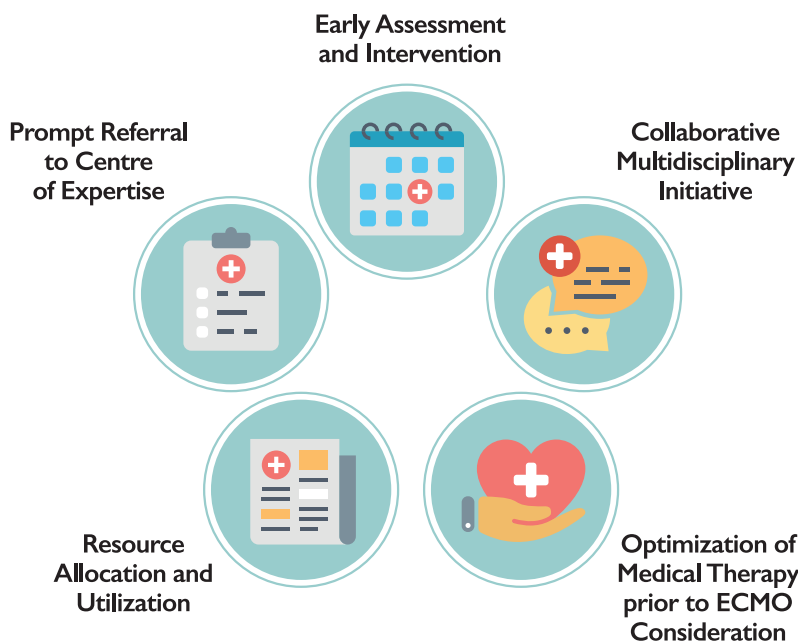
Favourable Factors

- Shared decision making as a multidisciplinary team
- Established ECMO protocol/program
- Single-system organ involvement (+/- acute kidney injury)

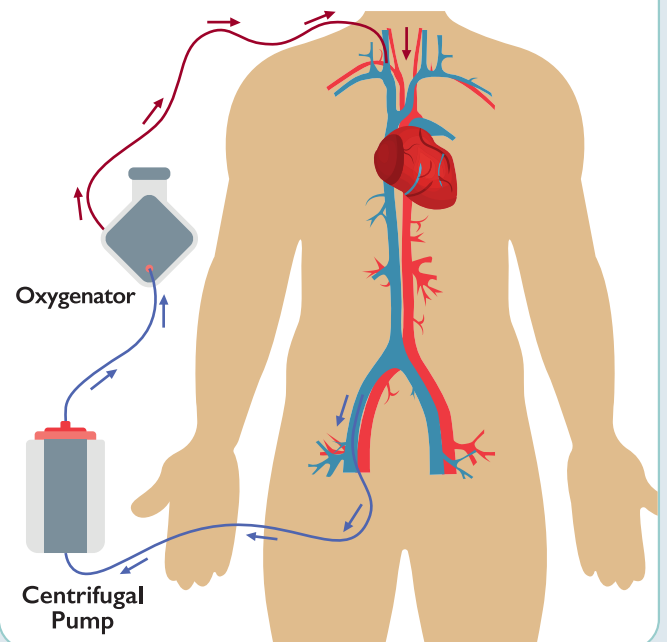
Less Favourable Factors

- Advanced age (usually >65 years)
- Significant irreversible comorbidities
- Limited life expectancy (<1 year)
- Prolonged mechanical ventilation (>7 days) with high FiO₂
- Limited centre experience and/or resources
- Refractory multi-organ failure

Important Considerations for ECMO



Venovenous VV-ECMO (Respiratory Support)



Maximize Prior to Escalation to ECMO Rescue:

1 Mean Airway Pressure (Paw) – ensure Paw is increased optimally within the limits of LPV.

2 Sedation – lowest effective dose for adequate sedation to avoid spontaneous efforts or dyssynchrony.

3 Neuromuscular Blockade – mortality benefit in Acute Respiratory Distress Syndrome (ARDS), likely by inhibiting spontaneous effort or dyssynchrony.

4 Diuresis/Continuous Renal Replacement Therapy (CRRT) – decreasing lung edema improves gas exchange and compliance.

5 Prone Positioning – mortality benefit in ARDS, recommended prior to escalation to ECMO.

6 Rule out other Causes of Hypoxemia – effusions, pneumothoraces, mucous secretions, atelectasis, and high intrapulmonary shunt.