The State of Utah ECMO referral crisis educational document

The University of Utah, Intermountain Medical Center and Primary Children’s are working together to provide this educational document to assist referral centers in patient selection for expert consultation for Extracorporeal Oxygenation Membrane Support (ECMO) in the management of progressive respiratory failure.

FAQS:

- Timing of ECMO initiation is critical to the ECMO patient survival.
- For potential candidates EARLY REFERRAL (< 48 hours of intubation is IDEAL)
- Candidacy for ECMO for patients with COVID-19 is the same criteria as other patients
- ECMO candidacy can be considered at the time of ICU admission

Good Candidates:

- Isolated (single organ) acute respiratory or cardiac failure
- Healthy people without chronic medical problems or organ dysfunction
- Younger age confers survival benefit even with chronic medical problem

Poor Candidates:

- Mechanical Ventilation > 7d or >10d for pediatric patients
- Advanced Age, or frailty index
- Recent or current treatment for malignancy or immunocompromised state
- Complex social family dynamics without support
- Recent (14 days) stroke or surgery
- Coagulopathy with significant hematemesis, hematochezia, or hemoptysis

Additional information to consider prior to ECMO consultant evaluation:

1) Is the underlying disease process permanent?
2) Do patient’s goals of care express a preference against nursing home, long term facility or prolonged support?
3) Does the patient have chronic co-morbidities?
4) Does the patient have acute coexisting organ failures?
5) Is the patient morbidly obese (BMI > 45)?
6) Is the patient’s neurological status known?
7) Is the patient’s cardiac function normal? Is TTE possible?
8) If central line access needed, consider preserving right IJ

Call for evaluation and possible transfer to ECMO center when:

- Any of the following clinical parameters persist:
  - PH < 7.20, PCO2 > 75, P/F ratio <150, FiO2 > 70%, Plateau P > 28
- Patient condition continues to worsen despite 6-12 hours of any one item:
  - Low tidal Volume Ventilation (LTVV) with PEEP titration
  - Prone Position trial
  - Sedation titration including neuromuscular blockade administration
Referral centers:
UofU
IMC
PCH

State of Utah Crisis Planning for ECMO referral

Acute Hypoxemic Respiratory Failure

Initiate LTVV and ARDSnet therapy titrate for 6–12hrs

Any of the following for >6 h?
PEEP > 15; FiO2 > 70%; Pplat>28
PH < 7.2; PCO2 > 75

ECMO candidate?
*see FAQ

Assess:
- Neurological Function
  Trial of NMB
- Cardiac Function (TTE) if available

P/F < 150
Consider if available
  - Prone Position
  - NMB infusion
  - Pulmonary vasodilator

Discuss:
Goals of Care
Assent to DNR
Logistics

Call ECMO consult

Intermountain Medical Center
855–932–3648

University of Utah Transfer Center
801–587–8980

Primary Children's:
855–932–3648