

VV ECMO Evaluation and Cannulation Strategy

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Disclosures

- No financial disclosures
- Consent obtained from patient for all photography in this presentation

Case Presentation

- JW is a 47-year-old man with a BMI of 32 kg/m² who developed acute hypoxemic respiratory failure secondary to SARS-CoV-2 requiring admission to Mercy Hospital-Washington on 12/22/2020. Patient had been exposed at work and tested positive 6 days prior to presentation.
- Prior to admission, the patient had been prescribed dexamethasone and azithromycin.
- On arrival to the emergency department, the patient's oxygen saturations were in the low 70s.

Clinical Course

DAY 1

Patient was placed on HFNC. He was started on remdesivir, ceftriaxone, and doxycycline.

DAY 5

Patient's oxygenation worsened and required NIV.

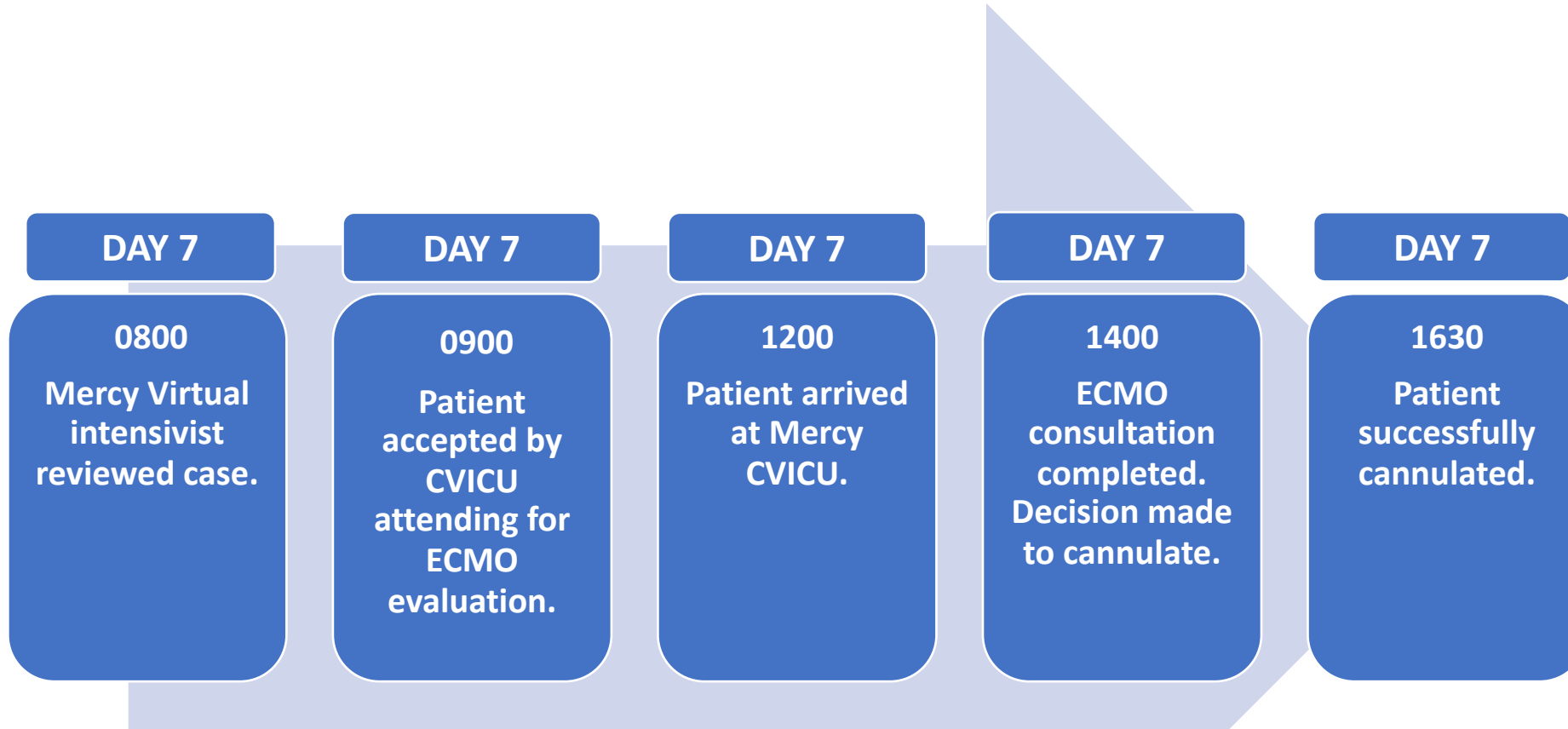
DAY 6

P/F 69. Patient was intubated, sedated, placed on NMB, and inhaled epoprostenol.

DAY 6

Case referred to Mercy Virtual. Plan to transfer when stabilized.

Clinical Course



ECMO Evaluation Process



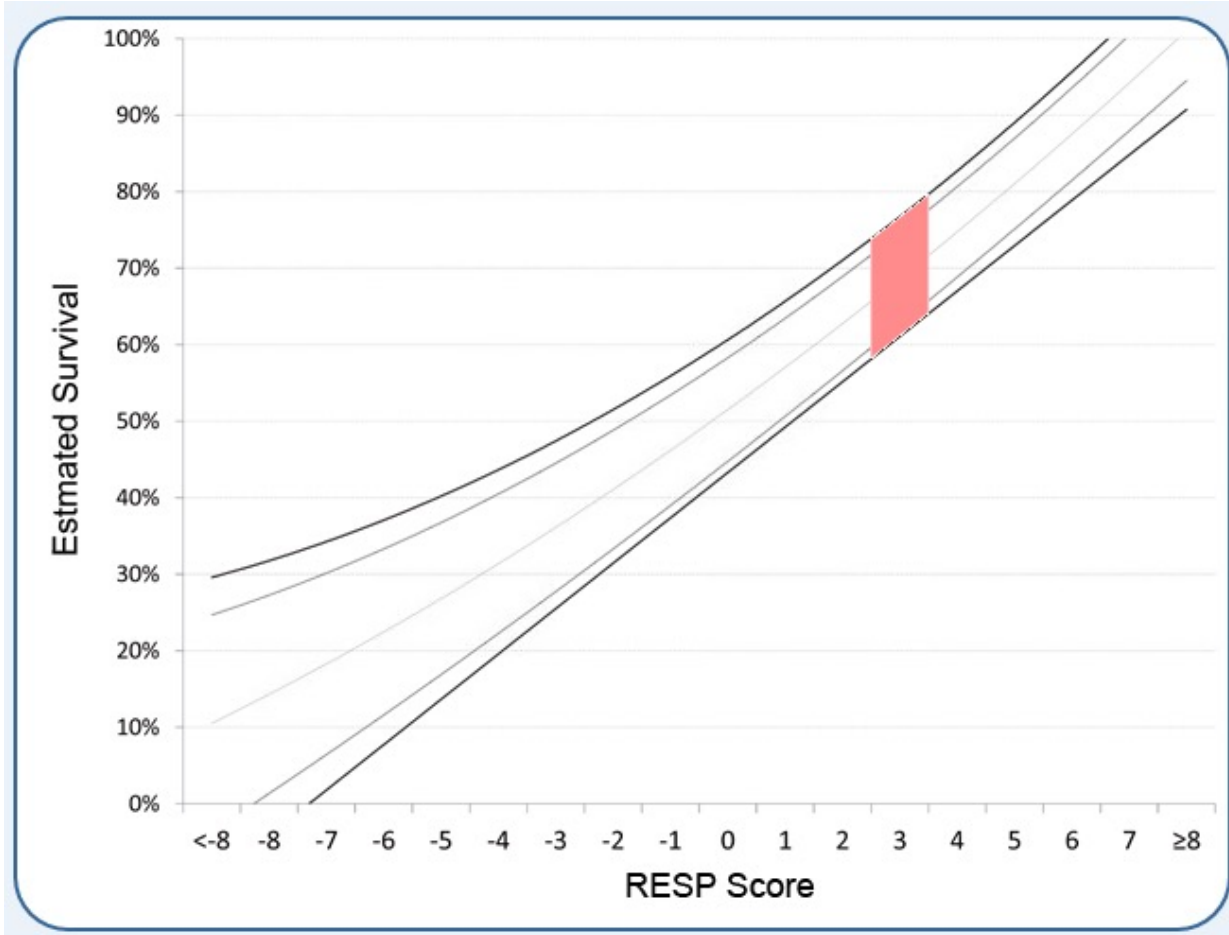
ECMO Consult

- ECMO evaluation:
 - P/F < 100 on FiO₂ > 90% despite optimal care for 6 hours or more (consider if < 150 or rapid worsening): **Yes**
 - CO₂ retention on mechanical ventilation despite high Pplat (>30cm H₂O): **Yes**
 - Scores:
 - Murray Score > 3: **3.5**
 - APPS (Age, Plateau, PaO₂/FiO₂) score > 8: **8**
 - AOI (Age-Adjusted Oxygenation Index) > 80: **80**
 - Contraindication to ECMO: **No**

ECMO Consult

- Cannulation considerations:
 - Peripheral vascular disease: **No**
 - Access difficulty: **No**
 - Prior grafts: **No**
 - IVC Filter: **No**
 - BMI > 45: **No**

- RESP Score 3



Age (years:)

18-49
 50-59
 ≥ 60

Immunocompromised NO

Mechanical ventilation prior to initiation of ECMO

<48 hours
 48 hours - 7 days
 >7 days

Acute Respiratory diagnosis group

Viral pneumonia
 Bacterial pneumonia
 Asthma
 Trauma/burn
 Aspiration pneumonitis
 Other acute respiratory diagnosis
 Non-respiratory and chronic respiratory diagnoses

Central nervous system dysfunction NO

Acute associated (non-pulmonary) infection NO

Neuro-muscular blockade before ECMO YES

Nitric oxide use before ECMO YES

Bicarbonate infusion before ECMO NO

Cardiac arrest before ECMO NO

PaCO₂ ≥ 75 mmHg / 10kpa NO

Peak inspiratory pressure ≥ 42 cmH₂O NO

Cannulation Strategy

- Patient accepted and charge RN notified
- Location: CVICU
- Patient arrived in supine position with LIJ CVC
- POC TTE: No RV dysfunction
- ECMO coordinator and CT surgeon notified
- Pre-cannulation huddle
- Configuration: 25F RFV drainage and 24F RIJ return under TTE guidance

Clinical Course on ECLS





Take Home Points



Thank You