



ECMO Protocol

Assessment and Indications

- For VA ECMO (cardiac), refractory cardiogenic shock or post-ROSC cardiac arrest (for refractory cardiac arrest see ECPR Protocol)
- For VV ECMO (respiratory), refractory hypoxic or hypercapnic respiratory failure (ARDS)

Initial Management

- For VA ECMO (cardiac), Contact Abbott Northwestern at **612-863-3911** to page advanced heart failure for an ECMO consult
- For VV ECMO (respiratory), Contact Abbott Northwestern at **612-863-1000** to page intensivist for an ECMO consult
- Relay the patient's level of hemodynamic support, ventilator settings, and neuro exam to the accepting physician
- Relay lab work, including ABG, BMP, CBC and lactate (drawn within 2 hours of transport) to the accepting physician
- Activate emergency transport team (must include critical care trained personnel, either paramedic or RN, and perfusionist)
- Prepare and provide transport team with an adequate amount of vasoactive drips, sedation/paralytic drips, and 2 U PRBC if possible
- If patient is already on ECMO, and being transported with perfusion from your facility, ensure perfusion has addressed any ECMO circuit incompatibilities with receiving center prior to transport
- If patient is already on ECMO, see Pre-Transport Checklist below

"Guidelines are not meant to replace clinical judgment or professional standards of care. Clinical judgment must take into consideration all the facts in each individual and particular case, including individual patient circumstances and patient preferences. They serve to inform clinical judgment, not act as a substitute for it. These guidelines were developed by a Review Organization under Minn. Stat. §145.61 et. seq., and are subject to the limitations described at Minn. Stat. §145.65."

This information is intended only as a guideline. Please use your best judgment in the treatment of patients.

Pre-Transport Checklist – Patient on ECMO

- Patient is sedated (fentanyl/versed, **NO Propofol**) and paralyzed
- 2 U PRBC available for transport
- Cannulas sutured to skin in 2-3 places **AND** secured with stat lock

Goal Support for Transport

- MAP 50-90mmHg** on ≤ 3 vasoactive medications
- Mechanical ventilation** – volume control with TV of 4-6 ml/kg, PEEP 10, and RR <14
- ECMO** – sweep equal to or half the amount of pump flow (To avoid rapid correction of P_aCO_2)
 - $S_aO_2 > 90\%$** in RUE ABG is a qualifying marker of adequate support

YES

NO

Okay to transfer

Labs/Bleeding

- Rule out internal and cannula site bleeding
- If Hgb < 9, transfuse with PRBC
- If pH < 7.2 from metabolic acidosis, consider bicarb (check ABG from R radial/brachial A-line)
- If iCa < 1.2, give 1 gram calcium gluconate

Volume

- Maintain adequate pump flows but **do not** exceed pump pressure of 250 mmHg
- If tubing chatter present, give 500ml 5% albumin
- Inspect cannula for dislodgement, obstruction or kinking
- X-ray cannula position (venous or drainage cannula tip should be above intrahepatic IVC)
- Rule out increased intrathoracic pressure (i.e. pneumothorax, hemothorax, etc.)

For further assistance call ANW Intensivist at 612-863-9999, or ANW Heart Failure at 612-863-3535 to request a consult.



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