ECMO Neuromonitoring and Acute Brain Injury:

Post-Neurosurgical Intervention on ECMO Associated Power Plan: ECMO Bleeding Algorithm



Evidence Based Practice

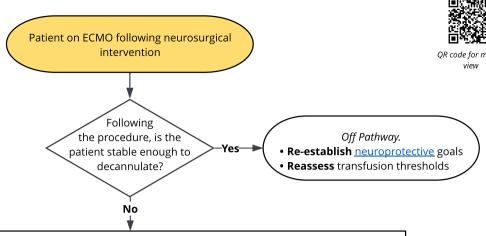
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Exclusion criteria:

• Ischemic brain injury without hemorrhage

Neurosurgical Intervention:

- External ventricular drain (EVD) placement
- Intracranial pressure (ICP) monitor placement



- Ensure discussion with Neurosurgery occurs before restarting anticoagulation
 - Start heparin at 10 units/kg/hr then follow heparin goal adjustment per ECMO Bleeding Algorithm
- Consider antifibrinolytic infusion as needed for up to 24 hours
- Continue ECMO Bleeding Algorithm for up to 24 hours, then slowly relax goals
- Assess ECMO circuit for fibrin and clots every hour and as needed
 - Ensure saline-primed back-up circuit readily available
 - Attempt to hold changing of circuit until patient is back on stable anticoagulation (ECMO circuit or component change may be needed sooner due to excessive clot)
- Consider higher ECMO flows to avoid areas of stasis in ECMO circuit and discuss post-op upper limit MAP goals with Neurosurgery to reduce likelihood of rebleeding
- Neuromonitoring every hour post-neurosurgical intervention
- Re-establish neuroprotective goals with multidisciplinary team
- Obtain imaging as clinically indicated

Removal of EVD/ICP Monitor

- · Remove the device when no longer clinically indicated and in discussion with multidisciplinary team
- Ensure fibrinogen > 200 mg/dL; platelet count > 120K, PT normal; hPTT 50 70 seconds
- Make a plan for the duration to hold anticoagulation prior to and following device removal
- Consider device removal early in the day to allow for optimal neuromonitoring
- Additionally, consider removing around the time of a circuit change

Intracranial Hemorrhage on ECMO

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Link to: synopsis and references