AIRWAY BLEEDING ON ECMO

Tier 1
Bleeding Score 0

Is ECMO patient’s bleeding score 0?
- Yes: Continue the following:
  - Inline suction only to the safe marker
  - Soft suction catheter for mouth, nose (no yankauer)
  - Make sure vent heater is on appropriately to avoid dehumidified air entering the airways
- No: Continue the following:

Tier 2
Bleeding Score 1

Is ECMO patient’s bleeding score 1?
- Yes: Continue the following:
  - All above items in Tier 1
  - Discontinue all mucosal irritants (hypertonic saline, Dornase, bicarbonate)
  - Increase sedation to minimize coughing
  - If oral/nasal packing, notify provider and consider ENT consult
- No: Continue the following:

Tier 3
Bleeding Score 2

Bleeding score of ≥ 2
- Yes: Continue the following:
  - All above items in Tier 1 & 2
  - Consult ENT (if not already done)
  - Increase PEEP
  - Lidocaine to minimize coughing
  - Paralytic if above are not effective
- No: Continue the following:

Tier 4
Bleeding Score ≥ 2 AND not improving in 12 hours?

- Yes: Continue tiered based therapy and re-evaluate for further bleeding
- No: Continue the following:

Tier 5
TXA Failure

Is patient still bleeding following 48 hours of TXA (TXA failure)?
- Yes: Consider other options (dual bronchial intubation, nebulized Factor VII, instilled Epinephrine)
- No: Continue tiered based therapy and re-evaluate for further bleeding

Disclaimer: Pathways are intended as a guide for practitioners and do not indicate an exclusive course of treatment nor serve as a standard of medical care. These pathways should be adapted by medical providers, when indicated, based on their professional judgement and taking into account individual patient and family circumstances.

ChildrensOmaha.org/Pathways
Updated 10/2022
### Bleeding Score for ECMO Patients

Document at least every 4 hours or if acute change

*Adapted from PEDECOR*

<table>
<thead>
<tr>
<th>Bleeding Score 0 (No or Minimal Bleeding)</th>
<th>- Oozing from lines/tubes or mucosa only requiring gauze or pressure</th>
</tr>
</thead>
</table>
| **Bleeding Score 1 (Mild Bleeding)**     | - Oozing from lines/tubes or mucosa that requires minor intervention (consult, suture, topical agents, packing)  
- Oozing from oral and/or nasal mucosa that requires surgical consultation and minor interventions (packing, suturing, topical antifibrinolytics, etc.) |
| **Bleeding Score 2 (Moderate Bleeding)** | - Internal bleeding not requiring surgical interventions  
- Documented blood loss > 1 mg/kg/hr but < 4ml/kg/hr (see score 3)  
- Clinical bleeding requiring high risk bleeding algorithm and/or transfusion of blood products  
- Use of IV antifibrinolytics for bleeding |
| **Bleeding Score 3 (Severe Bleeding)**   | - Internal bleeding requiring surgical interventions  
- Documented blood loss > 4ml/kg/hr (averaged over 4 hours)  
- Heparin drip held (unless preparation for planned surgical procedure or excessive heparin level/ACT)  
- Bleeding with hemodynamic changes  
- New CNS bleed not requiring discontinuation of ECMO |
| **Bleeding Score 4 (Catastrophic Bleeding)** | - Bleed resulting in death or requiring discontinuation of ECMO |