



STANDARD RISK – LOW DOSE HEPARIN

At Risk Patients for Prophylactic Heparin
 age < 1yr, 20 units/kg/hr.
 age ≥ 1yr, 10 units/kg/hr.
 (separate from Shunt)

POST-OP PROPHYLAXIS FOR SHUNTED PATIENTS

- Presence of CVL/PICC and:
 - ❖ Neonate < 28 days
 - ❖ Any Single Ventricle Patient
 - ❖ History or Thrombosis/DVT/PE/Stroke
 - ❖ Inherited thrombophilia including Antphospholipid syndrome
 - ❖ Chronic Immobilization
 - ❖ Paralyzed > 24hrs
 - ❖ Acute Infection/Sepsis
 - ❖ PLE/Chylous effusion
 - ❖ DCM EF < 40%
 - ❖ LV Noncompaction
 - ❖ Obesity

- Start Heparin drip at 20 units/kg/hr**
- Check heparin assay x 1
 - Obtain post- op AT3
 - Stop Heparin 2 hrs. before discontinuing intrathoracic lines
 - Transition to Aspirin when feeds are started
 - <4kg – 20.25 mg
 - 4kg – 10kg - 40.5 mg
 - >10kg – 81 mg
 - Verify Now (platelet reactivity to aspirin)
 - <550: Adequate platelet inhibition (consistent with aspirin-induced inhibition of platelet

Patient should receive standard intervention based on risk level on admission

Use the order set for CICU/CACU Heparin Orders in EPIC

- Exclusion Criteria**
- VAD
 - ECMO
 - IVH > Grade 1
 - Other Bleeding Complications (GI Bleeding, etc.)
 - Contraindication to Pharm. Prophylaxis

CONTRAINDICATIONS TO PHARMACOLOGIC PROPHYLAXIS

- Ongoing or uncontrolled bleeding
- Uncorrected coagulopathy (PLT<50,000; INR>1.5; or PTT>2x control)
- <1 year since acute stroke
- Suspected or known paraspinal hematoma
- Major allergy to pork products
- History of heparin induced thrombocytopenia
- Intracranial monitoring (EVD/Bolt)
- CNS drain (epidural catheter/ other)
- Risk for major surgical bleeding

MODERATE RISK – THERAPEUTIC ANTICOAGULATION

Inclusion:
 Patients with Clinical indications for therapeutic heparin or enoxaparin (known thrombus, mechanical valve, etc.)

- Follow CICU/CTS Therapeutic Unfractionated Heparin Dosage Titration (page 2)
- Heparin Assays per Guidelines, See page 2

HIGH RISK: DIRECT VERBAL COMMUNICATION WITH CTS & CICU ATTENDING IS REQUIRED AND DOCUMENTED

<p>INCLUSION</p> <ul style="list-style-type: none"> • Shunted with high risk for thrombosis • Mechanical valve with high risk for thrombosis • History of clotted shunts <p>Need to have CTS Attending identify patient as High Risk & document</p>	<p>ASSESSMENT LABS & RADIOLOGY</p> <ul style="list-style-type: none"> • Baseline Head US (if open fontanelle) • CBC • PT/PTT • Fibrinogen • Heparin Assay • AT3 (goal is 80 -130) • ACT
<p>INTERVENTION</p> <ul style="list-style-type: none"> • Initial Heparin Bolus 50 units-100 units/kg x1 • Q 1hr ACT checks for first 6hrs post-operative using bedside POC cartridges • Titrate Heparin per ACT • Bolus Heparin 25-50 units/kg to achieve goal ACT • Keep bolusing until ACT is achieved • After 6hrs transition to Heparin Assay • Manage per CICU/CSU Heparin Order Set (see pg. 2). 	

- PRE-OP LABS**
- Stat AT3
- Baseline range should be between 80-130
 - All neonates (< 28 days) and shunted patients should have the AT3 drawn pre-op
 - AT3 will be repeated in the OR at discretion of anesthesiologist & cardiac surgeon

- MONITORING FOR PATIENTS REQUIRING THERAPEUTIC DOSING**
- Obtain Daily Heparin Assay and 4hrs after any dosing change
 - Therapeutic Goal for Heparin assay goal should be 0.35-0.7
 - Consulting pharmacy
 - Consult Hematology for all patients with KNOWN thrombus



Therapeutic Unfractionated Heparin Dosage Titration		
Hep Assay (Units/mL)	Dosage Adjustment	Time to Repeat Heparin Assay (Anti-Xa)
<0.2	Give 50 units/kg bolus and increase infusion rate by 15%	4 hours after rate change
0.21 - 0.35	Increase infusion rate by 10%	4 hours after rate change
0.35 -0.7	Keep rate the same	Daily after 2 levels 4 hours apart are in goal range
0.71-0.79	Decrease infusion by 10%	4 hours after rate change
0.8-0.89	Hold infusion for 60 minutes then decrease infusion rate by 10%	4 hours after infusion resumes
≥0.9	Hold infusion for 120 minutes then decrease infusion rate by 15%	4 hours after infusion resumes