



Our Lady of the Lake Regional Medical Center



Pharmacy Anticoagulation Stewardship

INPATIENT UNFRACTIONATED HEPARIN INFUSION GUIDELINE

Anti-Factor Xa Guided Dosing and Monitoring Guideline for unfractionated Heparin infusion (Adult)

For patients with indication for anticoagulation needing unfractionated heparin, this system guideline outlines the appropriate dosing for unfractionated intravenous (IV) heparin infusion administration using anti-Xa monitoring.

Anti – Xa will be the monitoring parameter used for all heparin IV administration for most patients **while aPTT monitoring will ONLY be used for patients with recent DOAC usage within the last 72 hrs and prior to initiating heparin IV administration**

This clinical practice guideline is intended to provide a standardized process for the initiation, maintenance and monitoring of intravenous unfractionated heparin infusion.

Scope: applies to all staff providing anticoagulation therapy using unfractionated intravenous heparin infusion.

- Baseline Labs (within 24hrs prior to initiation of heparin infusion)
 - CBC (Hgb, Hct, platelet count)
 - Anti-Xa, aPTT

Cardiology Heparin Infusion Anti-Xa Monitoring

Indications: STEMI, NSTEMI, Atrial Fibrillation, Mechanical heart valves (Goal Anti-Xa: 0.3 – 0.7 units/mL)¹

Initial Bolus: **60 units/kg (Max initial bolus: 4000 units)**

Initial infusion rate: **12 units/kg/hour**

Max initial infusion rate: 1000 units/hour (for patients greater than 83 kg)

Monitoring: Heparin anti-Xa Assay 6 hours after initiation and 6 hours after each dosage change

Heparin Anti -Xa (units/ml)	Bolus	Rate of infusion	Check Anti-Xa in hours
< 0.1	40 units/kg	Increase by 4 units/kg/hour	6 hours
0.11 – 0.20	20 units/kg	Increase by 2 unit/kg/hour	6 hours
0.21 – 0.29	--	Increase by 1 unit/kg/hour	6 hours
0.3 – 0.7	--	No change	When 2 consecutive readings within therapeutic range, check Anti-Xa daily
0.71 – 0.8	--	Decrease by 1 unit/kg/hour	6 hours
0.81 - 1	--	Decrease by 2 units/kg/hour	6 hours
>1		Inform MD Hold infusion for 1 hours Decrease by 4 units/kg/hr*	When restarting infusion* Decrease by 4 units/kg/hr*

VTE Heparin Infusion Anti-Xa Monitoring

Indications: DVT, PE, ACUTE LIMB ISCHEMIA (ALI) (**Goal Anti-Xa: 0.3 – 0.7 units/mL**)¹

Initial Bolus: 80 units/kg (Max initial bolus: 10,000 units)

Initial infusion rate: 18 units/kg/hour

Max initial infusion rate: 2000 units/hour (for patients greater than 83 kg)

Monitoring: Heparin anti-Xa Assay 6 hours after initiation and 6 hours after each dosage change

Heparin Anti -Xa (units/ml)	Bolus	Rate of infusion	Check Anti-Xa in hours
< 0.1	40 units/kg	Increase by 4 units/kg/hour	6 hours
0.1 – 0.20	20 units/kg	Increase by 2 unit/kg/hour	6 hours
0.21 – 0.29	--	Increase by 1 unit/kg/hour	6 hours
0.3 – 0.7	--	No change	When 2 consecutive readings within therapeutic range, check Anti-Xa daily
0.71 – 0.8	--	Decrease by 1 unit/kg/hour	6 hours
0.81 - 1	--	Decrease by 2 units/kg/hour	6 hours
>1		Inform MD Hold infusion for 1 hour, then Decrease by 4 units/kg/hr *	When restarting infusion Decrease by 4 units/kg/hr

Low Intensity Neurosurgical/Neurologic Injury Heparin Infusion Anti-Xa Monitoring

Purpose: For patients receiving concomitant thrombolytics, neurologic injury (Stroke, ICH, TBI) or when concerns for high bleeding risk.

Indications: Concomitant alteplase, high bleeding risk, neurological injury (**Goal Anti-Xa: 0.3 – 0.5 units/mL**)⁴

Initial Bolus: None

Initial infusion rate: 12 units/kg/hour

Max initial infusion rate: 1000 units/hour (for patients greater than 83 kg)

Monitoring: Heparin anti-Xa Assay 6 hours after initiation and 6 hours after each dosage change

Heparin Anti -Xa (units/ml)	Bolus	Rate of infusion	Check Anti-Xa in hours
< 0.1	20 units/kg	Increase by 2 units/kg/hour	6 hours
0.1 – 0.29	--	Increase by 1 unit/kg/hour	6 hours
0.3 – 0.5	--	No change	When 2 consecutive readings within therapeutic range, check Anti-Xa daily
0.51 – 0.8	--	Decrease by 1 unit/kg/hour	6 hours
0.81 – 0.9	--	Hold infusion for 1 hour, then Decrease by 2 units/kg/hour	6 hours
>0.9		Inform MD Hold infusion for 1 hour, then Decrease by 3 units/kg/hr *	When restarting infusion Decrease by 3 units/kg/hr

Impella Heparin Infusion Anti-Xa Monitoring (Goal Anti-Xa: 0.2 – 0.4 units/mL)⁵

Initial Bolus: None

Initial infusion rate: 10 units/kg/hr (if bicarbonate/non-heparin purge solution is used)⁶

OR

: 8 units/kg/hr (if heparin purge solution is used)⁶

Max initial infusion rate: 1000 units/hour (for patients greater than 83 kg)

Monitoring: Heparin anti-Xa Assay 6 hours after initiation and 6 hours after each dosage change

Heparin Anti -Xa (units/ml)	Bolus	Rate of infusion	Check Anti-Xa in hours
< 0.1	40 units/kg	Increase by 3 units/kg/hour	6 hours
0.1 – 0.19	20 units/kg	Increase by 1 unit/kg/hour	6 hours
0.2 – 0.4	--	No change	When 2 consecutive readings within therapeutic range, check Anti-Xa daily
0.41 – 0.6	--	Decrease by 2 unit/kg/hour	6 hours
> 0.6		Inform MD Hold infusion for 1 hour, then Decrease by 3 units/kg/hr[*]	When restarting infusion[*] Decrease by 3 units/kg/hr

Treatment of IV Heparin Infusion Overdose

1. Protamine is the reversal agent for heparin
2. Available route: IV
3. Protamine dose calculation is only based on the last 2 – 3 hours infusion dose of heparin administration
4. Capped dosing
 - a. 1 mg of protamine reverses 100 units of heparin
 - b. Max single dose of 50 mg at a time. Administer by slow IV injection
5. Onset of Action: 5- 15 minutes

This Protocol Development and Review information

Date Developed: 09/2025

Last Date Reviewed: 12/2025

References

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