



ANTICOAGULATION GUIDELINES FOR NEURAXIAL PROCEDURES AT LLUMC

Guidelines to Prevent Spinal Hematoma following Epidural/Intrathecal/Spinal Procedures and Perineural Hematoma following Peripheral Nerve Procedures

ATTENTION! WHEN CAN YOU SAFELY DO NEURAXIAL/PERIPHERAL NERVE PROCEDURES OR GIVE ANTICOAGULANTS
 Neuraxial routes include epidural and intrathecal infusions, implanted intrathecal pumps, and spinal injections.
 Peripheral routes include all peripheral nerve and plexus infusions. **NOTE: Bloody tap/procedure? Acute Pain Service (4878)**

MEDICATION	PRIOR TO NEURAXIAL/NERVE PROCEDURE Minimum time between last dose of anticoagulant and spinal injection OR neuraxial/nerve catheter placement	WHILE NEURAXIAL/NERVE CATHETER IN PLACE Restrictions on use of anticoagulants in patients with neuraxial/nerve catheters in place	AFTER NEURAXIAL/NERVE PROCEDURE Minimum time between neuraxial/nerve catheter removal and next anticoagulant dose
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ANTICOAGULANTS FOR VTE PROPHYLAXIS			
heparin unfractionated 5000 units SQ q8 or q12 hr	6 hrs	May be given BUT: -Must wait 2 hr after catheter placement or spinal injection before giving dose -Must wait 6 hrs after last dose before REMOVING catheter Does not require Pain Service approval	1 hr
heparin unfractionated 7500 units SQ q8 hr	12 hrs	CONTRAINDICATED while catheter in place: may NOT be given unless approved by Pain Service Attending (4878)	
dalteparin (Fragmin) 5000 units SQ qday enoxaparin (Lovenox) 40 mg SQ qday	12 hrs (longer in renal impairment)	May be given BUT contact Pain Service regarding dose timing (4878) -Must wait 12 hrs after catheter PLACEMENT or spinal injection before giving dose -Must wait 12 hrs after last dose before REMOVING catheter	4 hrs
enoxaparin (Lovenox) 30 mg SQ q12hr	12 hours (longer in renal impairment)	CONTRAINDICATED while catheter in place: may NOT be given unless approved by Pain Service Attending (4878)	
fondaparinux (Arixtra) 2.5 mg SQ qday	72 hrs (longer in renal impairment)		
rivaroxaban (Xarelto) 10 mg PO qday	72 hrs (longer in renal impairment)	May be given BUT contact Pain Service regarding dose timing (4878) -Must wait 12 hrs after catheter PLACEMENT or spinal injection before giving dose -Must wait 12 hrs after last dose before REMOVING catheter	6 hrs
apixaban (Eliquis) 2.5 mg PO bid	72 hrs (longer in renal impairment)	May be given BUT contact Pain Service regarding dose timing (4878)	
dabigatran (Pradaxa) 220 mg po qday	72 hrs depending on renal function	-Must wait 12 hrs after catheter PLACEMENT or spinal injection before giving dose	
betrixaban (Bevyxxa) 80 mg po qday	72 hrs	-Must wait 12 hrs after last dose before REMOVING catheter	
AGENTS USED FOR FULL SYSTEMIC ANTICOAGULATION			
apixaban (Eliquis) 10 or 5 mg PO bid	72 hrs (longer in renal impairment)		6 hrs (48 hrs after a traumatic puncture)
dabigatran (Pradaxa) 75 - 150 mg PO bid	72 hrs (longer in renal impairment)	CONTRAINDICATED while catheter in place: may NOT be given unless approved by Pain Service Attending (4878)	6 hrs
dalteparin (Fragmin) 200 units/kg SQ qday or 100 units/kg SQ q12hr	48 hrs (longer in renal impairment)		4 hrs

Reference: Horlocher TT et al. Regional anesthesia in the patient receiving antithrombotic or thrombolytic therapy. American Society of Regional Anesthesia and Pain Medicine Evidence-Based Guidelines (fourth edition). Reg Anesth Pain Med 2018; 43:263-309.
 Adapted from the University of Washington Medical Center Anticoagulation guidelines for Neuraxial Procedures dated February 2018.



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MEDICATION	PRIOR TO NEURAXIAL/NERVE PROCEDURE	WHILE NEURAXIAL/NERVE CATHETER IN PLACE	AFTER NEURAXIAL/NERVE PROCEDURE
	Minimum time between last dose of anticoagulant and spinal injection OR neuraxial/nerve catheter placement	Restrictions on use of anticoagulants in patients with neuraxial/nerve catheters in place	Minimum time between neuraxial/nerve catheter removal and next anticoagulant dose

enoxaparin (Lovenox) >40 mg sq qday	48 hrs (longer in renal impairment)	CONTRAINDICATED while catheter in place: may NOT be given unless approved by Pain Service Attending (4878)	4 hrs
heparin unfractionated IV continuous infusion or greater than 5000 units sq bid or tid	When aPTT < 40 sec		
fondaparinux (Arixtra) > 2.5 mg sq qday	72 hrs (longer in renal impairment)		6 hrs
rivaroxaban (Xarelto) 15 mg PO bid or qday; 20 mg PO qday	72 hrs (longer in renal impairment)		
edoxaban (Savaysa) 30 – 60 mg po qday			
warfarin (Coumadin)	When INR < 1.5	May give one dose post op for patients with femoral or saphenous nerve catheters ONLY but must contact pain service (4878) to continue	4 hrs

DIRECT THROMBIN INHIBITORS

argatroban IV continuous infusion	When aPTT < 40 sec	CONTRAINDICATED while catheter in place: may NOT be given unless approved by Pain Service Attending (4878)	4 hrs
bivalirudin (Angiomax) IV continuous infusion			

ANTIPLATELET AGENTS

Aspirin/NSAIDS	May be given; no time restrictions for catheter placement or removal Do NOT call Pain Service		
abciximab (Reopro)	48 hrs	CONTRAINDICATED while catheter in place: may NOT be given unless approved by Pain Service Attending (4878)	6 hrs
cilostazol (Pletal)			
dipyridamole er/asa (Aggrenox)	7 days		
clopidogrel (Plavix)	7 days		
eptifibatide (Integrilin)	12 hrs (longer in renal impairment)		
prasugrel (Effient)	7 days		
ticagrelor (Brilinta)	7 days		
tirofiban (Aggrastat)	12 hrs (longer in renal impairment)		
cangrelor (Kangreal)	1 hrs		

THROMBOLYTIC AGENTS

alteplase (TPA) 2 mg dose for catheter clearance or doses for chest tube clearance	May be given; no time restrictions for catheter placement or removal (Maximum dose 4 mg/24 hours)		
alteplase (TPA) full dose for stroke, MI, etc or IV doses for IR procedures	10 days	CONTRAINDICATED while catheter in place: may NOT be given unless approved by Pain Service Attending (4878)	10 days