UW Medicine

MANAGEMENT OF ANTITHROMBOTIC THERAPY FOR NEURAXIAL AND PERIPHERAL NERVE PROCEDURES[1]

Guidelines to Prevent Neuraxial Hematoma after Epidural/Intrathecal/Spinal Injections and Perineural Hematoma following Peripheral Nerve procedures, excluding Chronic Pain Procedures ***ONLY***

These guidelines are not intended to supersede clinical judgement.

ATTENTION! WHEN CAN YOU SAFELY DO NEURAXIAL/PERIPHERAL NERVE PROCEDURES OR GIVE ANTITHROMBOTIC AGENTS?
NOTE: For concerns related to bleeding or traumatic procedures, contact Pain Service.

PRECAUTIONS:
Do NOT give MULTIPLE anticoagulants, including antiplatelet agents, concurrently in patients undergoing Neuraxial/Nerve Procedures.
Delay restarting anticoagulants for 24 hours after traumatic needle placement.

MEDICATION	A. PRIOR TO NEURAXIAL/NERVE PROCEDURE Minimum time between last dose of antithrombotic agent AND neuraxial injection or neuraxial/nerve catheter placement	B. WHILE NEURAXIAL/NERVE CATHETER IN PLACE Restrictions on use of antithrombotic agents while neuraxial/nerve catheters are in place and prior to their removal	C. AFTER NEURAXIAL/NERVE PROCEDURE Minimum time between neuraxial injection or neuraxial/nerve catheter removal AND next dose of antithrombotic agent
ANTICOAGULANTS FOR VTE PROPHYLAXIS			
heparin unfractionated 5000 units SQ Q8H or Q12H	May be given; no time restrictions for neuraxial injection or neuraxial/nerve catheter placement **Does not require Pain Service approval.**		
* **heparin** unfractionated 7500 units SQ Q8H	12 hours	**CONTRAINDICATED while catheter in place. May NOT be given unless approve by Pain Service or Obstetric Anesthesia Attending**	4 hours
* **dalteparin** (Fragmin) 5000 units SQ QDay	12 hours – CrCl ≥ 30 ml/min 24 hours – CrCl < 30 ml/min	**May be given BUT:** **•Must wait 8 hours after catheter PLACEMENT before giving dose** **•Must wait 12 hours after last dose before REMOVING catheter**	4 hours
* **enoxaparin** (Lovenox) 40mg SQ QDay			
* **enoxaparin** (Lovenox) 30mg SQ Q12H or 40mg SQ Q12H	12 hours – CrCl ≥ 30 ml/min 24 hours – CrCl < 30 ml/min	**CONTRAINDICATED while catheter in place. May NOT be given unless approve by Pain Service or Obstetric Anesthesia Attending**	4 hours
fondaparinux (Arixtra) 2.5mg SQ QDay	48 hours – CrCl ≥ 30 ml/min CrCl < 30 ml/min: Call Hematology		6 hours
apixaban (Eliquis) 2.5mg bid	48 hours – CrCl ≥ 50 ml/min 72 hours – CrCl 30-50 ml/min CrCl < 30 ml/min: Call Hematology	**May be given BUT:** **•Must wait 8 hours after catheter PLACEMENT before giving dose** **•Must wait 12 hours after last dose before REMOVING catheter**	6 hours
rivaroxaban (Xarelto) 10mg po QDay	48 hours – CrCl ≥ 50 ml/min 72 hours – CrCl 30-50 ml/min CrCl < 30 ml/min: Call Hematology		
betrixaban (Bevyxxa) 80mg QDay	72 hours – CrCl ≥ 30 ml/min 96 hours – CrCl 15-30 ml/min CrCl < 15 ml/min: Call Hematology		

*** for use of these specific agents/doses with select superficial, lower extremity PNCs at Harborview Medical Center only, see internal recommendations available on HMC Integrated Pain Care Program website https://hmc.uwmedicine.org/BU/pain/Pages/default.aspx**

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*Guidelines to Prevent Neuraxial Hematoma after Epidural/Intrathecal/Spinal Injections and Perineural Hematoma following Peripheral Nerve procedures, excluding Chronic Pain Procedures **ONLY***

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AGENTS USED FOR FULL SYSTEMIC ANTICOAGULATION			
apixaban (Eliquis) 2.5mg bid – 10mg bid	48 hours – CrCl ≥ 50 ml/min 72 hours – CrCl 30-50 ml/min CrCl < 30 ml/min: Call Hematology	**CONTRAINDICATED while catheter in place. May NOT be given unless approve by Pain Service or Obstetric Anesthesia Attending**	6 hours
rivaroxaban (Xarelto) 15-20mg po qday or 15mg bid	48 hours – CrCl >50 ml/min CrCl < 50 ml/min: Call Hematology		
edoxaban (Savaysa) 30-60mg QDay	48 hours – CrCl ≥ 50 ml/min CrCl < 50 mL/min: Call Hematology		
dabigatran (Pradaxa) 75mg bid – 150mg bid	72 hours – CrCl 50 ml/min 120 hours – CrCl 30-50 ml/min CrCl < 30 ml/min: Call Hematology		
fondaparinux (Arixtra) 5-10mg SQ QDay	72 hours – CrCl ≥ 30 ml/min CrCl < 30 ml/min: Call Hematology		
dalteparin (Fragmin) 200 Units/kg SQ QDay or 100 Units/kg SQ Q12H	24 hours – CrCl ≥ 30 ml/min 48 hours – CrCl < 30 ml/min		4 hours
enoxaparin (Lovenox) 1.0 - 1.5mg/kg SQ QDay or 1mg/kg SQ Q12H	24 hours – CrCl ≥ 30 ml/min 48 hours – CrCl < 30 ml/min		
heparin unfractionated IV infusion	when aPTT normal or anti-Xa activity undetectable		
heparin unfractionated full dose SQ	when aPTT normal or anti-Xa activity undetectable		
warfarin (Coumadin)	when INR ≤ 1.5		
DIRECT THROMBIN INHIBITORS, INJECTABLE			
argatroban IV continuous infusion	when DTI assay < 40 or aPTT < 40 sec	**CONTRAINDICATED while catheter in place. May NOT be given unless approve by Pain Service or Obstetric Anesthesia Attending**	4 hours
bivalirudin (Angiomax) IV continuous infusion	when DTI assay < 40 or aPTT < 40 sec		

<table>
<tr><th colspan="4">ANTIPLATELET AGENTS pages 285-286</th></tr>
<tr><td>aspirin or NSAIDS</td><td colspan="3">May be given; no time restrictions for neuraxial injection or neuraxial/nerve catheter placement
Does not require Pain Service approval</td></tr>
<tr><td>abciximab (Reopro)
IV continuous infusion</td><td>48 hours</td><td rowspan="7">CONTRAINDICATED
while catheter in place.
May NOT be given unless approved by
Pain Service Attending</td><td rowspan="7">6 hours</td></tr>
<tr><td>aspirin/dipyridamole
(Aggrenox)</td><td>24 hours</td></tr>
<tr><td>cangrelor (Kengreal)
IV continuous infusion</td><td>3 hours</td></tr>
<tr><td>clopidogrel (Plavix)</td><td rowspan="3">7 days</td></tr>
<tr><td>prasugrel (Effient)</td></tr>
<tr><td>ticagrelor (Brilinta)</td></tr>
<tr><td>tirofiban (Aggrastat)
IV continuous infusion</td><td rowspan="2">8 hours– CrCl > 50 ml/min
CrCl < 50 Call Hematology</td></tr>
<tr><td>eptifibatide (Integrelin)
IV continuous infusion</td></tr>
<tr><th colspan="4">THROMBOLYTIC AGENTS</th></tr>
<tr><td>alteplase (TPA)
1mg dose for catheter clearance</td><td colspan="3">May be given; no time restrictions for neuraxial injection or neuraxial/nerve catheter placement
Does not require Pain Service approval
(Maximum dose 4mg/24 hours)</td></tr>
<tr><td>alteplase (TPA)
full dose for stroke, MI, etc</td><td>48 hours</td><td>CONTRAINDICATED
while catheter in place.
May NOT be given unless approved by
Pain Service Attending</td><td>10 days</td></tr>
</table>

References

Horlocker TT et al. Regional Anesthesia in the Patient Receiving Antithrombotic or Thrombolytic therapy: American Society of Regional Anesthesia and Pain Medicine Evidence Based Guidelines (4th ed). Reg Anesth Pain Med 2018; 43(3):263-309

Burnett AE, et al. Guidance for the practical management of the direct oral anticoagulants (DOACs) in VTE treatment. J Thromb Thrombolysis (2016) 41:206–232. DOI 10.1007/s11239-015-1310-7.

Each recommendation was reviewed by members of anesthesiology, hematology and pharmacy to determine the class (strength of recommendation) and level (quality of the evidence) using the 2018 American Society of Regional Anesthesia and Pain Medicine (ASRA) Guidelines. These recommendations were approved by the UW Medicine Thrombosis and Anticoagulation Safety Committee. In any case of discrepancy from the ASRA 2018 Regional and Antithrombotic Guidelines, a final decision was reached after consideration of medication pharmacokinetics, procedure and thrombosis risk and clinical experience. These guidelines are not intended to set out a legal standard of care and do not replace medical care or the judgment of the responsible medical professional considering all the circumstances presented by an individual patient. This consensus statement is not intended to ensure a successful patient outcome in every situation and is not a guarantee of any specific outcome.

For questions/comments:
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