

Summary of ASRA Guidelines for Anticoagulated Patients (ICU Implications)

S. Galvagno, DO, PhD, FCCM

Low Risk	Intermediate Risk*	High Risk*
Peripheral nerve blocks Peripheral joints and musculoskeletal injections Trigger point injections including piriformis injection Sacroiliac joint injection and sacral lateral branch blocks Thoracic and lumbar facet MBNB and RFA Peripheral nerve stimulation trial and implant† Pocket revision and implantable pulse generator/ intrathecal pump replacement	Epidural steroid injections (interlaminar and transforaminal) Cervical† facet MBNB and RFA Intradiscal procedures Sympathetic blocks (stellate, thoracic, splanchnic, celiac, lumbar, hypogastric) Trigeminal and sphenopalatine ganglia blocks	Spinal cord stimulation trial and implant Dorsal root ganglion stimulation Intrathecal catheter and pump implant Vertebral augmentation (vertebroplasty and kyphoplasty) Percutaneous decompression laminotomy Epiduroscopy and epidural decompression

	PRIOR TO NEURAXIAL/NERVE PROCEDURE <small>Minimum time between last dose of antithrombotic agent AND neuraxial injection or neuraxial/nerve catheter placement</small>	WHILE NEURAXIAL/NERVE CATHETER IN PLACE <small>Restrictions on use of antithrombotic agents while neuraxial/nerve catheters are in place and prior to their removal</small>	AFTER NEURAXIAL/NERVE PROCEDURE <small>Minimum time between neuraxial injection or neuraxial/nerve catheter removal AND next dose of antithrombotic agent</small>
ANTICOAGULANTS, INJECTABLE			
Heparin 5000 units SQ q8h or q12h	4-6 hours verify normal aPTT	May be given; preferred over alternatives	1 hour
Heparin 7500 units SQ q8h or q12h	12 hours verify normal aPTT	May be given; preferred over alternatives	1 hour
Heparin IV infusion	4-6 hours verify normal aPTT	May be given; preferred over alternatives	1 hour
Dalteparin (Fragmin)		CONTRAINDICATED	
Enoxaparin (Lovenox) 40 mg SQ daily	≥ 12 hours	May be maintained with once daily dosing, without administration of any other antithrombotic drugs	4 hours
Enoxaparin (Lovenox) 30 mg SQ q12h	≥ 12 hours	CONTRAINDICATED Risk of spinal/epidural hematomas	4 hours
Enoxaparin (Lovenox) 1.5 mg/kg SQ daily or 1 mg/kg SQ q12h	≥ 24 hours		4 hours
Fondaparinux (Arixtra)	36-42 hours	CONTRAINDICATED	6 hours
ANTICOAGULANTS, ORAL			
Apixaban (Eliquis) 2.5 mg BID - 5 mg BID	3 days	CONTRAINDICATED	6 hours

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Rivaroxaban (Xarelto) 15-20 mg daily	3 days	CONTRAINDICATED	6 hours
Betrixaban (Bevyxxa) 80 mg daily	3 days	CONTRAINDICATED	5 hours
Edoxaban (Savaysa) 30-60 mg daily	3 days	CONTRAINDICATED	6 hours
Dabigatran (Pradaxa) 75-150 mg BID	CrCl < 30 mL/min: avoid NA CrCl 30-49 mL/min: 5 days CrCl 50-79 mL/min: 4 days CrCl ≥ 80 mL/min: 3 days Renal fxn unknown: 5 days	CONTRAINDICATED	6 hours
Warfarin (Coumadin)	4-5 days verify normal INR	check INR daily	remove when INR < 1.5
DIRECT THROMBIN INHIBITORS, INJECTABLE			
Argatroban IV infusion	Avoid neuraxial techniques		
Bivalirudin (Angiomax) IV infusion	Avoid neuraxial techniques		
ANTIPLATELET AGENTS			
Aspirin	May continue dosage	Avoid neuraxial techniques if early postoperative use of other anti-hemostatic drugs is anticipated	May continue dosage
NSAIDs	May continue dosage		May continue dosage
Aspirin/dipyridamole (Aggrenox)	24 hours	CONTRAINDICATED	6 hours
Cangrelor (Kengreal) IV infusion	3 hours	CONTRAINDICATED	8 hours
Clopidogrel (Plavix)	5-7 days	CONTRAINDICATED	Without LD: immediate With LD: 6 hours

PRIOR TO NEURAXIAL/NERVE PROCEDURE Minimum time between last dose of antithrombotic agent AND neuraxial injection or neuraxial/nerve catheter placement	WHILE NEURAXIAL/NERVE CATHETER IN PLACE Restrictions on use of antithrombotic agents while neuraxial/nerve catheters are in place and prior to their removal	AFTER NEURAXIAL/NERVE PROCEDURE Minimum time between neuraxial injection or neuraxial/nerve catheter removal AND next dose of antithrombotic agent
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Prasugrel (Effient)	7-10 days	CONTRAINDICATED	Without LD: immediate With LD: 6 hours
Ticagrelor (Brilinta)	5-7 days	CONTRAINDICATED	Without LD: immediate With LD: 6 hours
Abciximab (Reopro) IV infusion	24-48 hours	CONTRAINDICATED	Contraindicated for 4 weeks after surgery; monitor neurologic status if given after neuraxial technique
Tirofiban (Aggrastat) IV infusion	4-8 hours	CONTRAINDICATED	
Eptifibatide (Integrelin) IV infusion	4-8 hours	CONTRAINDICATED	
THROMBOLYTIC AGENTS			
Alteplase (TPA) 1 mg dose for catheter clearance		CONTRAINDICATED	
Alteplase (TPA) Full dose for stroke, MI, etc		CONTRAINDICATED	

***Guidelines do not address risks with multiple therapies or comorbidities that interfere with coagulation. Consult appropriate expert(s) as needed.*

References

- Horlocker TT, Vandemeulen E, Kopp SL, 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.
- Gogarten W, Vandermuelen E, Van Aken H, et al. Regional anaesthesia and antithrombotic agents: recommendations of the European Society of Anaesthesiology. Eur J Anaesthesiol 2010; 27:999.

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