**Department of Anesthesiology Acute Pain Management Service:**

**Antithrombotics and Intrathecal/Epidural Neuraxial Access**

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| **The following are Acute Pain Management Service Guidelines. They are based on the ASRA Evidence-Based Guidelines (Third Edition) and updates. Individual patient needs may demand variance from these guidelines, depending on impaired renal function and/or other considerations.** |
| **Heparin and Low Molecular Weight Heparin** |
| **Agent** | **Stop Time Before Catheter placement or Removal** | **Restart Time After Cath Placement/Removal** | **Monitoring Parameters** |
| Unfractionated Heparin Treatment (IV) | 2-4 hours after last Heparin dose and normal aPTT | 1 hour | aPTT, Platelets if patient on heparin >4 daysDo not combine with other antiplatelet agents |
| Unfractionated Heparin Prophylaxis (BID or TID) | No contraindication | 1 hour | aPTT if indicated, Platelets if on hep >4 daysDo not combine with other antiplatelet agents |
| Unfractionated HeparinSystemic Intraoperative | 2-4 hours after last heparin dose and normal aPTT | 1 hour | aPTT, Platelets if patient on heparin >4 daysDo not combine with other antiplatelet agents |
| Enoxaparin [Lovenox®] Treatment 1 mg/kg Q12H or1.5 mg/kg Q24H | 24 hours | 24 hours |  |
| Enoxaparin [Lovenox®] Prophylaxis (40 mg Q24H) | 12 hours | 2 hours if atraumatic24 hours if bloody |  |
| Fondaparinux [Arixtra®]Prophylaxis/Treatment | Recommend against indwelling catheter | Recommend against  | For single shots, must use single needle pass with atraumatic needle placement |
| Dalteparin [Fragmin®]Prophylaxis/Treatment120 units/kg Q12H200 units/kg Q24H | 24 hours | 24 hours |  |
| Tinzaparin [Innohep®]Prophylaxis/Treatment175 units/kg Q24H | 24 hours | 24 hours |  |
| **Direct Thrombin Inhibitors *(both single shots and catheters contraindicated)*** |
| Argatroban [Argatroban®] | Recommend against | Recommend against |  |
| Bivalirudin\* [Angiomax®] | Recommend against | Recommend against |  |
| Desirudin\* [Iprivask®] | Recommend against | Recommend against |  |
| Lepirudin\* [Refludan®] | Recommend against | Recommend against |  |
| **Glycoprotein IIb/IIIa Inhibitors (*Contraindicated within 4 weeks of surgery*)** |
| Abciximab [Reopro®] | 24-48 hours | Not applicable | aPTT, ACT |
| Eptifibitide [Integrelin®] | 4-8 hours | Not applicable | aPTT, PT |
| Tirofiban [Aggrastat®] | 4-8 hours  | Not applicable | PLT |
| **OrAl Anticoagulants** |
| Apixaban [Eliquis®] | 3 days | 6 hours | Not required |
| Dabigatran [Pradaxa®] | 5 days, 7 days if renal impairment | 6 hours | Not required |
| Rivaroxaban [Xarelto®] | 3 days | 6 hours | Not required |
| Edoxaban | No data available | No data available | \*FDA approval date 1/8/2015 |
| Warfarin [Coumadin®] | 4-5 days after last Coumadin dose and normal INR ($\leq $1.2)Catheter removal when INR<1.5. If 1.5-3, remove catheter with caution. If >3, normalize INR and then remove. | After catheter removal | INR |
| **Oral Antiplatelets** |
| Aspirin | May continue | May continue | Avoid other agents with antiplatelet effects  |
| Dipyridamole [Persantine®] | May continue | May continue | Avoid other agents with antiplatelet effects |
| Herbals [Garlic, Gensing, Ginko] | May continue | May continue | Avoid other agents with antiplatelet effects |
| Cilostazol [Pletal®] | 4 days | 5 hours after removal | Avoid other agents with antiplatelet effects |
| Clopidogrel [Plavix®] | 7 days | After catheter removal | Not Reqd. Optional: Normal PLT function test or P2Y12 test should be documented if given between 5-7 days of procedure |
| Prasugrel [Effient®] | 7-10 days | 6 hours after catheter removal | Not Reqd. Optional: Normal PLT function test or P2Y12 test should be documented if given between 7-10 days of procedure |
| Ticagrelor [Brilinta®] | 5-7 days | 6 hours after catheter removal | Not Reqd. Optional: Normal PLT function test or P2Y12 test should be documented if given between 5-7 days of procedure |
| Ticlodipine [Ticlid®] | 14 days | After catheter removal | Not Reqd. Optional: Normal PLT function test or P2Y12 test should be documented if given within 14 days of procedure |
| Ref: Horlocker, TT., et al. Regional anesthesia in the patient receiving antithrombotic or thrombolytic therapy, RAPM 2010;35:64-101 and 2013 Update |