IR Regional Hemostasis Guidelines

INTERVENTIONAL RADIOLOGY HEMOSTATSIS GUIDELINES 2020 - DRAFT		
Bleeding Risk	**Low Risk**	**High Risk**
Procedures	• Nontunneled venous catheter placement and removal • Dialysis access interventions* • IVC filter placement/removal (non-complex) • Vein ablations • Catheter exchange (biliary, nephrostomy, abscess catheter)* • Thoracentesis • Paracentesis • Joint injection • Vascular malformations • Superficial aspiration, drainage, or biopsy • Chest tube placement • Angiography (up to 6-F) • Venous interventions – pelvic and extremities • Chemo/radioembolization • Arterial embolization • Transjugular liver biopsy • Tunneled venous catheter • Subcutaneous port device placement+ or removal • Superficial abscess drainage • Bone marrow biopsy • Tunneled drainage catheter placement/removal	• TIPS and portal vein interventions^ • Solid organ deep biopsy (lung, liver, renal, bone, intraadominal/pelvic, retroperitoneal) • Thermal ablation • Nephrostomy tube placement • Biliary intervention, initial • Enteric tube placement, initial • Angiography ≥ 7-Fr sheath; aortic, pelvic, mesenteric, or CNS interventions • Complex IVC filter retrieval • Catheter directed thrombolysis • Venous interventions – thoracic and CNS • Catheter directed thrombolysis • Spine interventions (lumbar puncture, cervical puncture, vertebral augmentation)
Draw the following labs within 30 days:	None (unless anticoagulated rknown/suspected thrombocytopenia) +CBC with diff for port placement *No labs even if anticoagulated	CBC INR (day before procedure for pt on warfarin or acute liver disease, others within 30 days) ^Fibrinogen for chronic liver disease patients
Acceptable lab values	Platelet count >20,000 PT/INR< 2.0 – 3.0 aPTT < 1.5 x control +ANC > 0.8 for port placement	Platelets >50,000 PT/INR <1.5 aPTT: < 1.5 x control ^For TIPS or other procedures with chronic liver disease: Platelets > 30,000 and INR < 2.5, fibrinogen > 100

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Anticoagulants *(coordinate with outpatient anticoagulation services = OACS)*		
Warfarin	Do not hold	Hold for 5 days before procedure, target INR ≤1.8, bridge per OACS Reinitiation – day after procedure
Heparin	Do not hold	Treatment dose (> prophylactic dose) UFH: IV UFH – Hold for 4-6 hours (or until aPTT<1.5x control for urgent case) UFH SQ – 6 hours after last dose Reinitiation – 6–8 h
LMWH (enoxaparin, dalteparin)	Do not hold	40mg/d: withhold one dose 1 mg/kg bid: 24 h before procedure 1.5 mg/kg QD: 24 h before procedure Reinitiation – 12 h
Fondaparinux	Do not hold	Hold • 2–3 d if GFR ≥ 50 • 3–5 d if GFR ≤ 50 Reinitiation – 24 h
Direct Thrombin Inhibitors		
Argatroban	Do not hold	Defer procedure until off medication. If procedure is emergent, hold 2-4 h before procedure Reinitiation – 4-6 h
Bilvalirudin (Angiomax)	Do not hold	Defer procedure until off medication. If procedure is emergent, withhold 2-4 h before procedure Reinitiation – 4-6 h
Antiplatelet drugs *(post-coronary intervention patients coordinate with cardiology)*		
Aspirin	Do not hold	Hold for 5 days before procedure Reinitiation – day after procedure
Clopidogrel (Plavix)	Do not hold	Hold for 5 d before procedure Reinitiation – 6 h for 75 mg, 24 h for 300-600 mg
Prasugrel (Effient)	Do not hold	Hold for 7 d before procedure Reinitiation – day after procedure
Ticagrelor (Brilinta)	Do not hold	Hold for 5 d before procedure Reinitiation – day after procedure

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Ticlopidine (Ticlid)	Do not hold	Hold for 14d before procedure (no 2019 SIR recommendation)
Aggrenox	Do not hold	Hold for 5 d before procedure Reinitiation – day after procedure
Dipyridamole	Do not hold	Hold for 3 d before procedure (no 2019 SIR recommendation)
Glycoprotein IIb/IIIa Inhibitors *(coordinate with HBS/cardiology)*		
Eptifibatide (Integrilin) **Tirofiban (Aggrastat)**	Hold immediately before procedure	Hold 4-8 h before procedure
Abciximab (ReoPro)	Do not hold	Hold 24 h before procedure aPTT ≤ 50 s , ACT ≤ 150 s
Non-Steroidal Anti-inflammatory Drugs (NSAIDs) *Weak antiplatelet effects – no recommendation from SIR*		
Short-acting-(1/2 L 2–6h) Ibuprofen, Diclofenac, Ketoprofen, Indomethacin	Do not hold	Hold 24 h before procedure if possible
Intermediate(1/2 L 7–15h) Naproxen, Sulindac, Diflunisal, Celecoxib	Do not hold	Hold 2-3 d before procedure if possible
Long-acting(1/2 L 4 20 h) Meloxicam, Nabumetone, Piroxicam	Do not hold	Hold 5 d before procedure if possible
Direct Oral anticoagulants (DOACs) *Manage according to GFR as indicated below, coordinate with regional DOAC services*		
GFR ≥ 50 (ml/min)		
Dabigatran (BID) =Pradaxa t1/2 = 12-17 h	Do not hold	Hold 4 doses Reinitiation – 24 h

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Rivaroxaban =Xarelto (Once daily) t1/2 = 5 -9 h	Do not hold	Hold 2 doses Reinitiation – 24 h
Apixaban =Eliquis (BID) t1/2 = 11-12 h	Do not hold	Hold 4 doses Reinitiation – 24 h
Edoxaban (Once daily) = Sayasa $t_{1/2}$ = 8-10 h	Do not hold	Hold 2 doses Reinitiation – 24 h
GFR = 30-50 (ml/min)		
Dabigatran (BID) t1/2 = 12-17 h	Do not hold	Hold 6-8 doses Reinitiation – 24 h
Rivaroxaban (Once daily) t1/2 = 5 -9 h	Do not hold	Hold 2 doses Reinitiation – 24 h
Apixaban (BID) t1/2 = 11-12 h	Do not hold	Hold 6 doses Reinitiation – 24 h
Edoxaban (Once daily) $t_{1/2}$ = 8-10 h	Do not hold	Hold 2 doses Reinitiation – 24 h
GFR = 15-29 (ml/min)**		
Dabigatran (BID) t1/2 = 12-17 h	Do not hold	Hold 6-8 doses Reinitiation – 24 h
Rivaroxaban (Once daily) t1/2 = 5 -9 h	Do not hold	Hold 3 doses Reinitiation – 24 h

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Apixaban (BID) $t_{1/2}$ = 11-12 h	Do not hold	Hold 6 doses Reinitiation – 24 h
Edoxaban (Once daily) $t_{1/2}$ = 8-10 h	Do not hold	Hold 2 doses Reinitiation – 24 h