

Medication		Low Risk	High Risk
Anticoagulants			
UFH			
Withholding	Do not withhold		Withhold IV heparin for 4–6 h before procedure; check aPTT or anti-Xa level; for BID or TID dosing of SC heparin, procedure may be performed 6 h after last dose
Reinitiation	NA		6–8 h
LMWH: enoxaparin (Lovenox), dalteparin (Fragmin)			
Withholding	Do not withhold		Enoxaparin, withhold 1 dose if prophylactic dose is used; withhold 2 doses or 24 h before procedure if therapeutic dose is used; check anti-Xa level if renal function impaired; dalteparin, withhold 1 dose before procedure
Reinitiation	NA		12 h
Fondaparinux (Arixtra)			
Withholding	Do not withhold		Withhold 2/3 d (CrCl ≥ 50 mL/min) or 3–5 d (CrCl ≤ 50 mL/min)
Reinitiation	NA		24 h
Argatroban (Acova)			
Withholding	Do not withhold		Withhold 2–4 h before procedure <sup>†</sup> ; check aPTT
Reinitiation	NA		4–6 h
Bivalirudin (Angiomax)			
Withholding	Do not withhold		Withhold 2–4 h before procedure <sup>†</sup> ; check aPTT
Reinitiation	NA		4–6 h
Warfarin (Coumadin)			
Withholding	Target INR ≤ 3.0 <sup>†</sup> ; consider bridging for high thrombosis risk cases		Withhold 5 d until target INR ≤ 1.8; consider bridging for high thrombosis risk cases; if STAT or emergent, use reversal agent
Reinitiation	NA or same-day reinitiation for bridged patients		Resume day after procedure; high thrombosis risk cases may benefit from bridging with LMWH and multidisciplinary management especially if reversal agent used along with vitamin K
Apixaban (Eliquis)			
Withholding	Do not withhold <sup>‡</sup>		Withhold 4 doses (CrCl ≥ 50 mL/min) or 6 doses (CrCl < 30–50 mL/min); if procedure is STAT or emergent, use reversal agent (andexanet alfa); consider checking anti-Xa activity or apixaban level especially with impaired renal function
Reinitiation	NA		24 h
Betrixaban (Bevyxxa)			
Withholding	Do not withhold <sup>‡</sup>		Withhold for 3 doses (113); if procedure is STAT or emergent, use reversal agent (andexanet alfa); consider checking anti-Xa activity especially with impaired renal function
Reinitiation	NA		24 h
Dabigatran (Pradaxa)			
Withholding	Do not withhold <sup>‡</sup>		Withhold 4 doses (CrCl ≥ 50 mL/min) or 6–8 doses (CrCl < 30–50 mL/min); if procedure is STAT or emergent, use reversal agent (idarucizumab); consider checking thrombin time or dabigatran level with impaired renal function
Reinitiation	NA		24 h
Edoxaban (Savaysa)			
Withholding	Do not withhold <sup>‡</sup>		Withhold for 2 doses; if procedure is STAT or emergent, use reversal agent (andexanet alfa); consider checking anti-Xa activity especially with impaired renal function
Reinitiation	NA		24 h
Rivaroxaban (Xarelto)			
Withholding	Do not withhold <sup>‡</sup>		Defer procedure until off medication for 2 doses (CrCl ≥ 50 mL/min), 2 doses (CrCl < 30–50 mL/min), or 3 doses (CrCl < 15–30 mL/min); if procedure is STAT or emergent, use reversal agent (andexanet alfa); consider checking anti-Xa activity or rivaroxaban level especially with impaired renal function
Reinitiation	NA		24 h
Antiplatelet agents: thienopyridines			
Clopidogrel (Plavix)			
Withholding	Do not withhold		Withhold for 5 d before procedure <sup>§</sup>
Reinitiation	NA		Reinitiation can occur 6 h after procedure if using 75-mg dose but should occur 24 h after procedure if using a loading dose (300–600 mg) <sup>  </sup>
Ticagrelor (Brilinta)			
Withholding	Do not withhold		Withhold for 5 d before procedure
Reinitiation	NA		Resume the day after procedure
Prasugrel (Effient)			
Withholding	Do not withhold		Withhold for 7 d before procedure
Reinitiation	NA		Resume the day after procedure
Cangrelor (Kengreal)			
Withholding	Defer procedure until off medication; if procedure is emergent, withhold 1 h before procedure; multidisciplinary discussion with cardiology suggested (118)		
Reinitiation	Patients receiving cangrelor are undergoing PCI or are within immediate periprocedural period from cardiac intervention; multidisciplinary, shared decision making recommended		
Antiplatelet agents: NSAIDs <sup>#</sup>			
Aspirin			
Withholding	Do not withhold		Withhold 3–5 d before procedure <sup>¶</sup>
Reinitiation	NA		Resume the day after procedure
Aspirin/dipyridamole (Aggrenox) (119,120)			
Withholding	Do not withhold		Withhold 3–5 d before procedure <sup>¶</sup>
Reinitiation	NA		Resume the day after procedure
Short-acting NSAIDs (half-life 2–6 h): ibuprofen, diclofenac, ketoprofen, indomethacin, ketorolac			
Withholding	Do not withhold		No recommendation
Reinitiation	NA		NA
Intermediate-acting NSAID (half-life 7–15 h): naproxen, sulindac, diflunisal, celecoxib			
Withholding	Do not withhold		No recommendation
Reinitiation	NA		NA
Long-acting NSAIDs (half-life > 20 h): meloxicam, nabumetone, piroxicam			
Withholding	Do not withhold		No recommendation
Reinitiation	NA		NA
Antiplatelet agents: glycoprotein IIb/IIIa inhibitors			
Long-acting abciximab (ReoPro)			
Withholding	Withhold 24 h before procedure <sup>**</sup>		
Reinitiation	Patients receiving glycoprotein IIb/IIIa inhibitor are undergoing PCI or within immediate periprocedural period from cardiac intervention; multidisciplinary, shared decision making recommended		
Short-acting: eptifibatide (Integrilin), tirofiban (Aggrastat)			
Withholding	Withhold 4–8 h before procedure <sup>**</sup>		
Reinitiation	Patients receiving a glycoprotein IIb/IIIa inhibitor are undergoing PCI or within immediate periprocedural period from cardiac intervention; multidisciplinary, shared decision making recommended		
Other			
Cilostazol (Pletal) (127,128)			
Withholding	Do not withhold	Do not withhold	
Reinitiation	NA		NA