

Table 1. Listing of several relatively new anticoagulant and antithrombotic agents along with relevant pharmacologic data.

Generic	Brand	Year	Mechanism	Indications	Route	Half-life	Regional Timing	Metabolism	Excretion	Monitoring	Antidote
Rivaroxaban	XARELTO	2011	Selective, non-AT-III dependent Factor Xa inhibitor	Prevention of VTE and stroke	PO	5-9 hrs	None listed.	Hepatic; CYP450 drug interactions	Renal and GI	None required. Rivaroxaban-calibrated PT or anti-Factor Xa assay can be used.	None officially. Possible value of Prothrombin complex concentrate infusion
Tricagrelor	BRILINTA	2011	P2Y ₁₂ ADP receptor platelet inhibitor	Reduce risk of thrombotic events in patients with Acute coronary syndrome	PO	7 hrs for tricagrelor; 9 hrs for active metabolite	Recommended to stop more than 5 days before surgery	Hepatic; CYP3A4/5 drug interactions	Hepatic metabolism; no renal excretion	None.	None.
Dabigatran	PRADAXA	2010	Direct thrombin Inhibitor	Prevention of VTE and stroke	PO	12-17 hrs	None officially. Typically wait 2-3 half-lives to allow drug to be cleared.	Minimal	Renal	None required. aPTT and thrombin time can provide qualitative information. INR is not useful.	None. Combination of charcoal and dialysis to reduce drug content; blood transfusions to control bleeding.
Prasugrel	EFFIENT	2009	P2Y ₁₂ ADP receptor platelet inhibitor	Reduce risk of thrombotic events in patients with Acute Coronary Syndrome managed by PCI	PO	7 hrs (2-15 hrs)	Recommended to stop 7-10 days before surgery (irreversible platelet inhibition)	Hepatic	Renal and GI	None.	Platelet transfusions
Desirudin	IPRIVASK	2003	Thrombin inhibitor	Prophylaxis for VTE in hip replacement	SQ BID	2-4 hrs	Initiate after regional anesthesia; Typically wait 2-3 half-lives prior to pulling catheter; confirm aPTT	Renal	Renal	aPTT	No specific antidote; Blood transfusions are appropriate; thrombin rich plasma concentrates and DDAVP may be helpful
Fondaparinux	ARIXTRA	2001	Selective AT-III mediated Factor Xa inhibitor	Prevention and treatment of VTE	SQ Qday	17-21 hrs	Remove catheter 36 hrs after last dose; restart 12 hrs after pulling catheter	Minimal	Renal	None required. Anti-Xa levels can measure activity. PT and PTT are not useful.	None officially. Possible value of recombinant Factor VIIa (with tranexamic acid)
Tinzaparin	INNOHEP	2000	Low molecular weight heparin	Treatment of VTE	SQ Qday	3-4 hrs	Not listed.	Desulphation and depolymerization	Renal	None required. aPTT and PT are NOT useful for monitoring	Blood transfusions; protamine
Lepirudin	REFLUDAN	1998	Thrombin inhibitor	Prophylaxis for VTE in patients with Heparin-induced thrombocytopenia	IV	1-2 hrs	Initiate after regional anesthesia; Typically wait 2-3 half-lives prior to pulling catheter; confirm aPTT	Catabolic hydrolysis	Renal	aPTT	No specific antidote; Blood transfusions recommended; hemodialysis may help
Anagrelide	AGRYLIN	1997	Platelet reducing agent; cAMP PDEIII inhibitor	Thrombocythemia, reduce risk of thrombosis	PO	1.3 hrs	Increased Platelet count in 4 days; check Platelet count before procedure	Hepatic; CYP1A2	Renal	Platelet count	Platelet transfusions