

COMPARISON OF ANTICOAGULANTS BY DRUG CLASS

Variable	Warfarin	Unfractionated Heparin	Low Molecular Weight Heparin	Direct Xa Inhibitor	Direct Thrombin Inhibitor
Medications	Coumadin, Jantoven	Heparin sodium	Dalteparin Enoxaparin	Fondaparinux Apixaban Edoxaban Rivaroxaban	Argatroban Bivalirudin Desirudin Dabigatran
MW	308	3,000-30,000	2,000-10,000	1,728 / 435	500-7,000
Route Given	PO; IV (rare)	SC, IV	SC, IV	F: SUBQ; A/E/R: PO	SC, IV; D: PO
Mechanism of Action	Inhibits activation of II, VII, IX, & X	Binds to AT and inhibits factors Xa:IIa at 1:1 ratio	Binds to AT and inhibits factors Xa:IIa at >1:1 ratio	F: Binds to AT to inhibit factor Xa only; others bind directly to Xa	Directly inhibits factor II only
Needs Titration	Yes++	Yes++	No	+/-	No
Onset of Action	Delayed, 5-7 days	Acute; immediate	Acute; 1-2 hours	Acute; 1-2 hours	Acute; Immediate
Duration of Action	Days	IV: 2-3 hours	SC: 12 hours	24 hours	N/A; D: >12 hours
Affected by Food	Yes (Vit K containing)	No	No	No	N/A; D: Negligible
Monitoring	PT/INR	aPTT, anti-Xe, ACT	Anti-Xe levels	none	aPTT/ACT; D: None
Renal Adjustments	No	No	Yes	Yes	Yes
CYP450 Enzymes	2C9 » 3A4	None	None	F: No, A/E/R: 3A4	None
Transporters	None	None	None	P-gp, +/- BCRP	P-gp
Precipitates Emboli	Yes (early on)	+/- (during HIT)	+/- (during HIT)	No	No
Cause HIT	No	Yes; 0.5-5%	Yes; 0.1-1.3%	F: -/+, A/E/R: No	No
Cross Placenta	Yes	No	No	Maybe	No
Antidote	Vitamin K, aPCC	Protamine, FFP	Protamine, FFP	aPCC	Idarucizumab, FFP