Switching To and From Various Anticoagulants

From	To	Conversion Recommendation
DOACs*		
Apixaban[1] **Eliquis**	heparin, bivalirudin, or argatroban infusion	■ Stop apixaban ■ Begin infusion at time when next dose of apixaban is due
	LMWH/subcutaneous agents (enoxaparin, fondaparinux, dalteparin)	■ Stop apixaban ■ Begin agent at time when next dose of apixaban is due
	warfarin	■ Stop apixaban ■ Start warfarin and consider bridging agent at next apixaban due time ■ Start INR monitoring 2 days after stopping apixaban (INR values drawn sooner may be falsely elevated by apixaban) ■ Stop bridging agent when INR is at goal
	dabigatran	■ Stop apixaban ■ Begin dabigatran when next dose of apixaban is due
	edoxaban	■ Stop apixaban ■ Begin edoxaban when next dose of apixaban is due
	rivaroxaban	■ Stop apixaban ■ Begin rivaroxaban when next dose of apixaban is due
Dabigatran[2] **Pradaxa**	heparin, bivalirudin, or argatroban infusion	■ Stop dabigatran ■ CrCl ≥ 30 mL/min – start infusion 12 hours after last dose of dabigatran ■ CrCl < 30 mL/min – start infusion 24 hours after last dose of dabigatran
	LMWH/subcutaneous agents (enoxaparin, fondaparinux, dalteparin)	■ Stop dabigatran ■ CrCl ≥ 30 mL/min – start agent 12 hours after last dose of dabigatran ■ CrCl < 30 mL/min – start agent 24 hours after last dose of dabigatran

From	To	Conversion Recommendation
DOACs*, *continued*		
Dabigatran[2]** **Pradaxa**	warfarin	■ CrCl ≥ 50 mL/min, start warfarin 3 days before stopping dabigatran ■ CrCl 30-49 mL/min, start warfarin 2 days before stopping dabigatran ■ CrCl 15-29 mL/min, start warfarin 1 day before stopping dabigatran ■ CrCl < 15 mL/min, not recommended ■ Start INR monitoring 2 days after stopping dabigatran (INR values drawn sooner may be falsely elevated by dabigatran)
	apixaban	■ Stop dabigatran ■ Initiate apixaban at the time of the next regularly scheduled dose of dabigatran
	edoxaban	■ Stop dabigatran ■ Initiate edoxaban at the time of the next regularly scheduled dose of dabigatran
	rivaroxaban	■ Stop dabigatran ■ Initiate rivaroxaban ≤2 hours prior to the next regularly scheduled dose of dabigatran
Edoxaban[3]** **Savaysa**	heparin, argatroban, or bivalirudin infusion	■ Stop edoxaban ■ Begin infusion at time when next dose of edoxaban is due
	LMWH/subcutaneous agents (dalteparin, enoxaparin, fondaparinux)	■ Stop edoxaban ■ Begin agent at time when next dose of edoxaban is due
	warfarin	■ If taking 60 mg daily Edoxaban – reduce dose to 30 mg daily and begin warfarin concomitantly. Discontinue when INR is at goal ■ If taking 30 mg daily Edoxaban – reduce dose to 15 mg daily and begin warfarin concomitantly. Discontinue when INR is at goal **OR** ■ Begin parenteral anticoagulant (bridge therapy) and warfarin at the time the next dose of edoxaban is due. When INR is at goal, discontinue parenteral anticoagulant.
	apixaban	■ Stop edoxaban ■ Begin DOAC at time when next dose of edoxaban is due
	dabigatran	
	rivaroxaban	

From	To	Conversion Recommendation
DOACs*, *continued*		
Rivaroxaban[4]** **Xarelto**	heparin, bivalirudin, or argatroban infusion	■ Stop rivaroxaban ■ Begin infusion at time when next dose of rivaroxaban is due
	LMWH/subcutaneous agents (enoxaparin, fondaparinux, dalteparin)	■ Stop rivaroxaban ■ Begin agent at time when next dose of rivaroxaban is due
	warfarin	■ Stop rivaroxaban ■ Start warfarin ■ Start INR monitoring 2 days after stopping rivaroxaban (INR values drawn sooner may be falsely elevated by rivaroxaban)
	apixaban	■ Stop rivaroxaban ■ Begin DOAC at time when next dose of rivaroxaban is due
	dabigatran	
	edoxaban	
Heparinoids/SC Agents		
Heparin Infusion	LMWH, subcutaneous	■ Stop heparin ■ Start agent at time heparin infusion is stopped ■ If more conservative strategy is preferred, start LMWH/SC agent 2 hours after heparin infusion is stopped
	dabigatran	■ Stop heparin ■ Start DOAC at the time of stopping heparin infusion
	apixaban	
	rivaroxaban	
	edoxaban	■ Stop heparin ■ Start edoxaban 4 hours after stopping heparin infusion
	warfarin	■ Begin when clinically indicated ■ Can overlap therapy to achieve therapeutic INR ■ Heparin dosage should decrease as INR increases
	argatroban/bivalirudin infusion	■ Stop heparin ■ Start infusion immediately after heparin infusion is stopped.

From	To	Conversion Recommendation
Heparinoids/SC Agents, *continued*		
LMWH/ subcutaneous (Enoxaparin, Dalteparin, Fondaparinux)	heparin infusion	■ Stop LMWH/SC agent ■ Start heparin infusion at time when next dose of LMWH/SC agent is due
	dabigatran	■ Stop LMWH/SC agent ■ Start DOAC ≤2 hours prior to the time of the next scheduled dose of LMWH/SC agent
	rivaroxaban	
	apixaban	■ Stop LMWH/SC agent ■ Start DOAC at time when next dose of LMWH/SC agent is due
	edoxaban	
	warfarin	■ Begin when clinically indicated ■ Can overlap therapy to achieve goal INR
	argatroban/bivalirudin infusion	■ Stop LMWH/SC agent ■ Start bivalirudin infusion at time when next dose of LMWH/SC agent is due
Vitamin K Antagonists		
Warfarin	heparin, argatroban, or bivalirudin infusion	■ Stop warfarin ■ Initiate infusion when INR < 2
	LMWH/subcutaneous agents (enoxaparin, fondaparinux, dalteparin)	■ Stop warfarin ■ Initiate agent when INR is 2
	dabigatran	■ Stop warfarin ■ Start dabigatran when INR < 2
	rivaroxaban	■ Stop warfarin ■ Start rivaroxaban when INR < 3
	apixaban	■ Stop warfarin ■ Start apixaban when INR < 2
	edoxaban	■ Stop warfarin ■ Start edoxaban when INR ≤ 2.5

From	To	Conversion Recommendation
IV Direct Thrombin Inhibitors		
Bivalirudin **Angiomax**	heparin infusion	■ If HIT has been ruled out, stop bivalirudin ■ Start heparin infusion immediately after bivalirudin infusion is stopped. Consider renal function in making decision.
	LMWH/subcutaneous agents (enoxaparin, fondaparinux, dalteparin)	■ If HIT has been ruled out, stop bivalirudin ■ Administer agent immediately after bivalirudin infusion is stopped. Consider renal function when making decision.
	warfarin	■ Begin when clinically indicated ■ Can overlap therapy to achieve therapeutic CFX ■ Bivalirudin dosage should decrease as CFX decreases
	dabigatran	■ Stop bivalirudin ■ Start dabigatran at the time of stopping bivalirudin
	apixaban	■ Stop bivalirudin ■ Start apixaban at the time of stopping bivalirudin
	edoxaban	■ Stop bivalirudin ■ Start edoxaban at the time of stopping bivalirudin
	rivaroxaban	■ Stop bivalirudin ■ Start rivaroxaban 4 hours after stopping bivalirudin
Argatroban	heparin infusion	■ If HIT has been ruled out, stop argatroban ■ Start heparin infusion immediately after argatroban is stopped. Consider hepatic function in making decision.
	LMWH, subcutaneous	■ If HIT has been ruled out, stop argatroban ■ Administer LMWH immediately after argatroban infusion is stopped. Consider hepatic function in making decision.
	warfarin	■ Begin when clinically indicated ■ Can overlap therapy to achieve therapeutic CFX ■ Argatroban needs should decrease as CFX decreases
	dabigatran	■ Stop argatroban ■ Start dabigatran at the time of stopping argatroban

From	To	Conversion Recommendation
IV Direct Thrombin Inhibitors, *continued*		
Argatroban	apixaban	■ Stop argatroban ■ Start apixaban at the time of stopping argatroban
	edoxaban	■ Stop argatroban ■ Start edoxaban at the time of stopping argatroban
	rivaroxaban	■ Stop argatroban ■ Start rivaroxaban 4 hours after stopping argatroban

* Direct Oral Anticoagulant

** For patients with end-stage renal disease or on intermittent or chronic hemodialysis it is recommended to use warfarin instead of a Direct Oral Anticoagulant (i.e. dabigatran, apixaban, edoxaban, rivaroxaban)

Dosing Information for DOACs
For detailed prescription information, refer to the manufacturer's package insert for each medication.

Disclaimer

Guidelines are not meant to replace clinical judgment or professional standards of care. Clinical judgment must take into consideration all the facts in each individual and particular case, including individual patient circumstances and patient preferences. They serve to inform clinical judgment, not act as a substitute for it. These guidelines were developed by a Review Organization under Minn. Statutes §145.64 et. seq., and are subject to the limitations described as Minn. Statues §145.65.

References

1. Apixaban (Eliquis) Package Insert. Product Information: ELIQUIS(R) oral tablets, apixaban oral tablets. Bristol-Myers Squibb Company and Pfizer Inc., Princeton, NJ, 2015.
2. Dabigatran Etaxilate (Pradaxa) Package Insert. Product Information: PRADAXA(R) oral capsules, dabigatran etexilate mesylate oral capsules. Boehringer Ingelheim Pharmaceuticals, Inc., Ridgefield, CT, 2014.
3. Edoxaban (Savaysa) Package Insert. Product Information: SAVAYSA(TM) oral tablets, edoxaban oral tablets. Daiichi Sankyo, Inc., Parsippany, NJ, 2015.
4. Rivaroxaban (Xarelto) Package Insert. Product Information: XARELTO(R) oral tablets, rivaroxaban oral tablets. Janssen Pharmaceuticals, Inc. (per FDA), Titusville, NJ, 2013.