Appendix 1: DOAC Dosing and Conversion from Other Anticoagulants

Direct Oral Anticoagulants (DOACs)

	APIXABAN (ELIQUIS)	RIVAROXABAN (XARELTO)	DABIGATRAN (PRADAXA)	EDOXABAN (SAVAYSA)
Dosing by indication and renal function	**Non-valvular Atrial Fibrillation** *ARISTOTLE* - 5 mg PO twice daily Dosing adjustment: - 2.5 mg PO twice daily if patient has two of the following: Age ≥ 80, weight ≤ 60kg, SCr ≥ 1.5mg/dL ESRD requiring hemodialysis: - 5 mg PO twice daily; reduce to 2.5 mg twice daily if age ≥ 80 years or body weight ≤ 60 kg **Treatment of DVT/PE** *AMPLIFY* - 10 mg PO twice daily x7 days, then 5 mg PO twice daily for at least 6 months ESRD requiring hemodialysis: No dosage adjustment necessary; however, patients with a serum creatinine > 2.5 mg/dL or CrCl < 25 mL/min were excluded from the clinical trials **DVT/PE Prophylaxis** *AMPLIFY-EXT*	**Non-valvular Atrial Fibrillation** *ROCKET-AF* - 20 mg PO daily with evening meal Renal dosing: - CrCl 15 - 50 ml/min: 15 mg PO daily with evening meal - CrCl < 15 ml/min: avoid use **Treatment of DVT/PE** *EINSTEIN-VTE & EINSTEIN-PE* - 15 mg PO twice daily with food for the first 21 days followed by 20 mg PO once daily with food - CrCl < 30 ml/min: avoid use **DVT/PE Prophylaxis** *EINSTEIN CHOICE* After completion of new VTE treatment course: - Rivaroxaban 10 mg daily with food - CrCl < 30 ml/min: avoid use Hip replacement - 10 mg PO once daily x35 days	**Non-valvular Atrial Fibrillation** *RE-LY* - 150mg PO twice daily Renal dosing: - CrCl 15 - 30 ml/min: 75 mg PO twice daily - CrCl < 15 ml/min: avoid use **Treatment of DVT/PE** *RE-COVER* Treat with parenteral anticoagulant for 5-10 days, then begin 150 mg PO twice daily - CrCl < 30ml/min: avoid use - CrCl < 50ml/min AND on a P-gp Inhibitor*: avoid use **DVT/PE Prophylaxis** *RE-MEDY & RE-SONATE* After completion of new VTE treatment course: 150 mg PO twice daily - CrCl < 50ml/min AND on a P-gp Inhibitor*: avoid use Hip replacement: 110 mg PO on day 1 then 220 mg PO daily x 28 – 35 days	**Non-valvular Atrial Fibrillation** *ENGAGE AF-TIMI 48* - 60 mg PO daily Renal dosing: - CrCl > 95 ml/min: avoid use - CrCl 15-50 ml/min: 30 mg PO daily - CrCl < 15 ml/min: avoid use **Treatment of DVT/PE** *HOKUSAI-VTE* Treat with parenteral anticoagulant for 5-10 days, then begin 60 mg PO daily if > 60 kg - For CrCl 15-50 ml/min, body weight ≤ 60 kg, or use of a P-gp inhibitor*: 30 mg PO daily - CrCl < 15 ml/min: avoid use

	After completion of new VTE treatment course: - 2.5 mg PO twice daily after 6 months of full dose treatment Hip replacement: - 2.5 mg PO twice daily x35 days Knee replacement: - 2.5 mg PO twice daily x12 days	- CrCl < 30 ml/min: avoid use Knee replacement - 10 mg PO once daily x12 days - CrCl < 30 ml/min: avoid use **ESRD requiring hemodialysis** Avoid use for all indications	Knee replacement: 150mg – 220mg PO daily x 6-10 days **ESRD requiring hemodialysis** Avoid use for all indications	
Prescribing factors to consider & reversal agents	- Verify insurance / copay and determine patient affordability - Check drug interactions, renal and hepatic function, and risk for bleed - Verify dose per indication - May be taken without regard to food - Tablets may be crushed, mixed with water, D5W or apple juice and given orally or via NG tube -No specific reversal agent. See HFH anticoagulation reversal guidelines	- Verify insurance / co-pay and determine patient affordability - Check drug interactions, renal and hepatic function, and risk for bleed - Verify dose (different dosing for DVT/PE vs. Afib) - To be taken with food - Can be crushed and given via NG/PEG tube – see package insert for more info -No specific reversal agent. See HFH anticoagulation reversal guidelines	- Verify insurance / co-pay and determine patient affordability - Check drug interactions, renal function, and risk for bleed - Can cause significant GI upset and reflux; avoid in patients with severe GERD - May be taken without regard to food - Cannot crush or open capsules - Must store in original container and discard 4 months after opening - reversal agent Idarucizumab FDA approved and available on HFH formulary *(RE-VERSE AD)*	- Verify insurance / copay and determine patient affordability - Check drug interactions, renal and hepatic function, and risk for bleed - Verify dose per indication - May be taken without regard to food - Information regarding crushed, suspended tablets is not available -No specific reversal agent. See HFH anticoagulation reversal guidelines
Drug interactions (Please refer to package insert for specific medications)	- Reduce dose to 2.5 mg twice daily if administered with strong inhibitors of both P-glycoprotein & CYP3A4 - Avoid use with drugs that are strong inducers of both P-glycoprotein and CYP3A4	- Avoid concomitant use with combined P-gp and strong CYP3A4 inhibitors - Avoid concomitant use with combined P-gp and strong CYP3A4 inducers	P-glycoprotein inhibitors - CrCl 30-50mL/min: 75 mg twice daily - ClCr <30 ml/min: avoid	P-glycoprotein inhibitors and inducers

		- Avoid use in patients with CrCl 15-80 ml/min who are receiving concomitant combined P-gp and moderate CYP3A4 inhibitors, unless the benefit outweighs the risk		
Monitoring parameters	Renal and hepatic function and hemoglobin	Renal and hepatic function and hemoglobin	Renal function and hemoglobin	Renal and hepatic function and hemoglobin
Contraindications	Mechanical heart valves, moderate to severe mitral stenosis, moderate to severe hepatic impairment (Child-Pugh class B or C), hepatic disease w/ associated coagulopathy, severe hypersensitivity to any component of the formulation, active bleeding, see drug interactions	Mechanical heart valves, moderate to severe mitral stenosis, moderate to severe hepatic impairment (Child-Pugh class B or C), severe hypersensitivity to any component of the formulation, active bleeding, see drug interactions	Mechanical heart valves, moderate to severe mitral stenosis, severe hypersensitivity to any component of the formulation, active bleeding, see drug interactions	Mechanical heart valves, moderate to severe mitral stenosis, moderate to severe hepatic impairment (Child-Pugh class B or C), hepatic disease w/ associated coagulopathy, severe hypersensitivity to any component of the formulation, active bleeding, see drug interactions
Impact on coagulation lab tests	May raise PTT and INR	May raise PTT and INR	May raise Ecarin clotting Time (ECT), PTT, and thrombin time (TT)	May raise PTT
Conversion from warfarin	Discontinue warfarin and start apixaban when the INR is < 2	Discontinue warfarin and start rivaroxaban when the INR < 3	Discontinue warfarin and start dabigatran when the INR < 2	Discontinue warfarin and start edoxaban when the INR < 2.5
Conversion to warfarin	Discontinue apixaban and begin both a parental anticoagulant (if needed) and warfarin at the time the next dose of apixaban is due. *Apixaban affects the INR; initial INR measurements during the transition to warfarin may not be useful for determining the appropriate warfarin dose	Discontinue rivaroxaban and begin both a parenteral anticoagulant (if needed) and warfarin at the time the next dose of rivaroxaban is due. *Rivaroxaban affects the INR; initial INR measurements during the transition to warfarin may not be useful for determining	Based on CrCl: - CrCl > 50 mL/min, start warfarin 3 days before discontinuing dabigatran - CrCl 31 - 50 mL/min, start warfarin 2 days before discontinuing dabigatran - CrCl 15-30 mL/min, start warfarin 1 day before discontinuing dabigatran - CrCl <15 mL/min, no recommendations provided	Option 1: Reduce edoxaban dose by half and start warfarin at the time the next dose of edoxaban is due. Stop edoxaban once INR > 2. Option 2: Discontinue edoxaban and begin both a parenteral anticoagulant (if needed) and warfarin at the time the

		the appropriate warfarin dose		next dose of edoxaban is due.
Conversion between anticoagulants other than warfarin	UF heparin to apixaban: Initiate apixaban within 2 hours of discontinuing UF heparin infusion. Apixaban to other agents: Discontinue apixaban and administer the first dose of the other anticoagulant (oral or parenteral) at the time the next dose of apixaban would have been administered. Other agent to apixaban: Discontinue agent and initiate apixaban 0-2 hours before the next scheduled dose of the previous agent.	UF heparin to rivaroxaban: Initiate rivaroxaban within 2 hours of discontinuing UF heparin infusion. Rivaroxaban to other agents: Discontinue rivaroxaban and administer the first dose of the other anticoagulant (oral or parenteral) at the time that the next dose of rivaroxaban would have been administered Other agents to rivaroxaban: Discontinue agent and initiate rivaroxaban 0-2 hours before the next scheduled evening dose of the previous agent.	UF heparin to dabigatran: Initiate dabigatran within 2 hours of discontinuing UF heparin infusion. Dabigatran to UF heparin: CrCl ≥ 30 ml/min start drip 12 hrs after dose CrCl < 30 ml/min, start drip 24 hrs after dose, Dabigatran to other agents: Discontinue dabigatran and administer the first dose of the other anticoagulant (oral or parenteral) the time that the next dose of dabigatran would have been administered Other agents to dabigatran: Discontinue agent and initiate dabigatran 0-2 hours before the next scheduled evening dose of the previous agent.	UF heparin to edoxaban: Stop the infusion and initiate edoxaban 4 hours later. Edoxaban to other agents: Discontinue edoxaban and administer the first dose of the other anticoagulant (oral or parenteral) at the time that the next dose of edoxaban would have been administered

References

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