

Determining Need for Anticoagulation	<ul style="list-style-type: none"> The need to anticoagulate is primarily based on ischemic stroke risk CHA₂DS₂-VASc is the recommended ischemic stroke risk tool DOACs are now recommended over warfarin except in patients with mod-to severe mitral stenosis or a mechanical heart valve Anti-platelets alone are NOT recommended for stroke prevention. 	CHA₂DS₂-VASc Scoring Tool		CHA₂DS₂-VASc Score		Yearly Stroke Risk (%)			
		Condition		Points		No treatment		With anticoagulant	
		Congestive heart failure		1		0		0	
		Hypertension		1		1		1.3	
		Age > 75 years		2		2		2.2	
		Diabetes mellitus		1		3		3.2	
		Stroke/TIA or thromboembolism (prior)		2		4		4.0	
		Vascular disease (MI, PAD, or aortic plaque)		1		5		6.7	
		Age 65-74 years		1		6		9.8	
		Sex Category (Female)		1					
		Score	Stroke Risk	2019 AHA /ACC Recommendation		For additional information about anticoagulation in Atrial Fibrillation, visit www.anticoagulationtoolkit.org			
		≥3	High	Anticoagulate (men and women)					
		2	High/Interm.	Anticoagulate (men) Consider (women)					
		1	Interm./Low	Consider oral anticoagulant in men					
		0	Low	Reasonable to omit anticoagulation					

Anticoagulant Selection	Pros		Cons		Dosing (see package inserts for full info)		Contraindications/Precautions		Assessment/Monitoring																																							
	DOACs		Warfarin (Coumadin®)		All		Apixaban (Eliquis®)		Dabigatran (Pradaxa®)		Edoxaban (Savaysa®)		Rivaroxaban (Xarelto®)																																			
			DOACs												All		Apixaban (Eliquis®)		Dabigatran (Pradaxa®)		Edoxaban (Savaysa®)		Rivaroxaban (Xarelto®)																									
																									DOACs		All		Apixaban (Eliquis®)		Dabigatran (Pradaxa®)		Edoxaban (Savaysa®)		Rivaroxaban (Xarelto®)													
																																					DOACs		All		Apixaban (Eliquis®)		Dabigatran (Pradaxa®)		Edoxaban (Savaysa®)		Rivaroxaban (Xarelto®)	
DOACs		All		Apixaban (Eliquis®)		Dabigatran (Pradaxa®)		Edoxaban (Savaysa®)		Rivaroxaban (Xarelto®)																																						

Patient Education	Anticoagulation			Warfarin-specific			DOAC-specific		
	<ul style="list-style-type: none"> Watch for s/sx of bleeding (especially intracranial) Notify healthcare provider if any s/sx of bleeding but seek immediate medical care if serious bleeding Notify clinic before starting any new med (including OTC) or having proc. ASA/NSAIDs ↑ bldg. Avoid NSAIDs and only use ASA if clear indication. Avoid dangerous activities that could lead to injuries (use protective gear) Notify dentist or physician that you are on anticoagulant prior to procedure Don't stop without consulting healthcare provider Provide written materials covering the above topics 			<ul style="list-style-type: none"> Maintain stable Vitamin K intake (eg. green leafy vegetables, broccoli, brussel sprouts, green tea) Notify if illness or change in health status (may effect INR) Alcohol can increase INR Visit www.anticoagulationtoolkit.org for patient handouts 			<ul style="list-style-type: none"> Very important not to miss a dose (since short half life) Dabigatran must be kept in original packaging Rivaroxaban should be taken with largest meal of the day Visit www.anticoagulationtoolkit.org for patient handouts 		

Long-term Management	<ul style="list-style-type: none"> Follow-up: at each f/u, assess for compliance, s/sx of bleeding or thromboembolism, interacting medication, and reinforce patient education. Bleeding <ul style="list-style-type: none"> Nuisance: minor bleeding common (epistaxis, bleeding gums, etc.) Not reason to d/c anticoagulant. Teach how to prevent/manage. Major bleeds: In most cases, resuming anticoagulation after bleeding controlled is best (~14 days after GI, within 1 mo. for intracranial) Periprocedural: Most pts don't need to have anticoag. interrupted for low bleed risk proc. unless pt has high bleed risk.(see table below) See warfarin and DOAC-specific peri-procedural info if interruption necessary. 					
	High risk pt.		Eg. major bleed <3 mos, platelet abnormalities (including ASA use), hx of bleeding during prior bridging		<ul style="list-style-type: none"> Follow-up: <ul style="list-style-type: none"> INRs 3-5 days after re-starting or any changes that can effect INR (ex. med or diet change) and approx. 7 days after any dose changes INRs can gradually be spaced out to monthly Dose changes per a standardized protocol Periprocedural: If high-risk proc. or high-risk pt. (see table bottom left), stop 5 days before. DO NOT bridge unless CHA₂DS₂-VASc ≥7 or stroke <3 mos. If bridging, start LMWH (UFH if CrCl<30) 3 days before proc. and stop 24 hrs before proc. (at least 4 hrs if UFH). Restart warfarin within 24 hrs of proc. at previous dose. Restart LMWH or UFH 24 hrs after low-risk proc. or 48-72 hours after high-risk proc. Stop LMWH/UFH when INR is therapeutic Switching to DOAC: stop warfarin and start DOAC when INR<2 (apixaban, dabigatran), ≤2.5 (edoxaban), <3 (rivaroxaban) 	
	Low risk proc.		Eg. minor dental and dermatological, cataract/glaucoma, diagnostic endoscopies			
	High risk proc.		Eg. major surgeries, procedures in highly vascularized organs (eg. kidneys), spinal procedures			
<ul style="list-style-type: none"> Follow-up: annually assess CBC, liver function, renal function (more frequently if renal insufficiency), weight, and age. Adjust dose per package insert dosing instructions (above), if necessary. Periprocedural: If DOAC is to be interrupted, most pts should stop one day before low risk procedures and 2 days before high risk procedures. For dabigatran pts with CrCl<50, stop 3 days before low risk procedures and 4 days before high risk procedures. Bridging is rarely needed. DOAC can be restarted 24 hours after low risk procedure and 48-72 hours after higher risk procedure. Switching to another DOAC: discontinue current DOAC and start new one at next scheduled dose. Switching to warfarin: see DOAC package insert for instructions. 						

References

- January CT, Wall S, Alpert JS, et al. 2014 AHA/ACC/HRS Guideline for the Management of Patients With Atrial Fibrillation. *Circulation*. 2014;130:e199-e267.
- January C, Wann L, et al. 2019 AHA/ACC/HRS Focused Update of the 2014 AHA/ACC/HRS Guideline for the Management of Patients With Atrial Fibrillation. *Journal of the American College of Cardiology* (2019)
- Holbrook A, Schulman S, Witt D, et al. Antithrombotic Therapy and Prevention of Thrombosis, 9th ed: American College of Chest Physicians Evidence-Based Clinical Practice Guidelines. *CHEST* 2012; 141(2)(Suppl):e152S–e184S
- Lip GY, Banerjee A, et al. Antithrombotic Therapy for Atrial Fibrillation: CHEST Guideline and Expert Panel Report. *CHEST* 2018; 154(5):1121-1201
- Lip GY, Nieuwlaat R, Pisters R, Lane DA, Crijns HJ. Refining clinical risk stratification for predicting stroke and thromboembolism in atrial fibrillation using a novel risk factor-based approach: the euro heart survey on atrial fibrillation. *Chest*. 2010 Feb;137(2):263-72.
- Doherty J, Gluckman TJ, Hucker WJ, et al. 2017 ACC Expert Consensus Decision Pathway for Periprocedural Management of Anticoagulation in Patients With Nonvalvular Atrial Fibrillation. *Journal of the American College of Cardiology* Jan 2017, 23217.
- Drug package inserts
 - Warfarin: https://packageinserts.bms.com/pi/pi_coumadin.pdf
 - Apixaban: https://packageinserts.bms.com/pi/pi_eliquis.pdf
 - Dabigatran: <http://docs.boehringer-ingenelheim.com/Prescribing%20Information/Pis/Pradaxa/Pradaxa.pdf>
 - Edoxaban: <http://dsi.com/prescribing-information-portlet/getPIContent?productName=Savaysa&inline=true>
 - Rivaroxaban: <https://www.xareltohcp.com/shared/product/xarelto/prescribing-information.pdf>

Disclaimer: This document is for informational purposes only and does not, itself, constitute medical advice. This document is not a replacement for careful medical judgments by qualified medical personnel. There may be information in this document that does not apply to or may be inappropriate for the medical situation at hand.