

Periprocedural Management (DOAC) v1.3

Procedure bleed risk	DOAC	Interruption/bridging recommendation
Minimal	apixaban, edoxaban, rivaroxaban	Do Not interrupt (time procedure at DOAC trough level, if possible ¹)
	dabigatran	Do Not interrupt (time procedure at DOAC trough level, if possible ¹)
Low/moderate	apixaban, edoxaban, rivaroxaban	-Interrupt for 1 day * -Do not bridge
	dabigatran	-Interrupt for 1 day (CrCl≥50 mL/min)* -interrupt for 2 days (CrCl<50 mL/min)* -Do not bridge
High	apixaban, edoxaban, rivaroxaban	-Interrupt for 2 days * -Do not bridge
	dabigatran	-Interrupt for 2 days (CrCl≥50 mL/min)* -interrupt for 4 days (CrCl<50 mL/min)* -Do not bridge

* A longer duration of interruption may be required in some special cases, irrespective of the DOAC used. This may include patients with severe renal insufficiency (CrCl < 30 mL/min), impaired hepatic function, or patients taking CYP3A4 or P-glycoprotein inhibitors which may interfere with DOAC clearance.

Estimate Procedure Bleed Risk (examples)			
Minimal	Low/Moderate		High
<ul style="list-style-type: none"> -Minor dermatologic procedures -Ophthalmologic (cataract) procedures -Minor dental procedures -Pacemaker or cardioverter-defibrillator device implantation 	<ul style="list-style-type: none"> -Arthroscopy -Cutaneous/lymph node biopsies -Foot/hand surgery -Coronary angiography -GI endoscopy ± biopsy -Colonoscopy ± biopsy 	<ul style="list-style-type: none"> -Abdominal hysterectomy -Laparoscopic cholecystectomy -Abdominal hernia repair -Hemorrhoidal surgery -Bronchoscopy ± biopsy 	<ul style="list-style-type: none"> -Major surgery with extensive tissue injury -Cancer surgery, especially solid tumor resection -Major orthopedic surgery, including shoulder replacement surgery -Reconstructive plastic surgery -Major thoracic surgery -Urologic or GI surgery, especially anastomosis surgery -Transurethral prostate resection, bladder resection, or tumor ablation
			<ul style="list-style-type: none"> -Colonic polyp resection -Bowel resection -Percutaneous endoscopic gastrostomy placement, endoscopic -Retrograde cholangiopancreatography -Surgery in highly vascular organs (kidneys, liver, spleen) -Cardiac, intracranial, or spinal surgery -Any major operation (procedure duration > 45 minutes) -Neuraxial anesthesia -Epidural injections

DOAC Interruption and Restart¹

DOAC	Procedure Bleed Risk (see next page for examples)	Peri-Procedural DOAC use									
		Day -5	Day -4	Day -3	Day -2	Day -1	Day of proc.	Day +1	Day +2	Day +3	Day +4
Rivaroxaban, apixaban, edoxaban	High									Resume day 2 or 3 (1 st dose 48-72 hrs post-procedure)	
	Low/Mod							1 st dose ≥24 hrs post-procedure			
Dabigatran (CrCl≥50 mL/min ³)	High									Resume day 2 or 3 (1 st dose 48-72 hrs post-procedure)	
	Low/Mod							1 st dose ≥24 hrs post-procedure			
Dabigatran (CrCl<50 mL/min ³)	High									Resume day 2 or 3 (1 st dose ≥48 hrs post-procedure)	
	Low/Mod							1 st dose ≥24 hrs post-procedure			

³CrCl calculated using Cockcroft-Gault and actual body weight

Decisions about DOAC management should only be made after assessing patient and procedure-specific factors and discussions with patient, management team, and proceduralist. If possible, delay procedure until any patient risk factors can be addressed. Longer hold times may be required in some special cases, irrespective of the DOAC used. This may include patients with severe renal insufficiency (CrCl < 30 mL/min), impaired hepatic function, or patients taking CYP3A4 or P-glycoprotein inhibitors which may interfere with DOAC clearance. In addition, some patients undergoing spinal procedures/anesthesia may require longer DOAC hold times (3-5 days) as per ASRA guidelines^{2,3}

¹Douketis et al. Perioperative Management of Antithrombotic Therapy: An American College of Chest Physicians Clinical Practice Guideline, Chest, Volume 162, Issue 5, 2022, Pages e207-e243, ISSN 0012-3692, <https://doi.org/10.1016/j.chest.2022.07.025>

²Interventional Spine and Pain Procedures in Patients on Antiplatelet and Anticoagulant Medications. Regional Anesthesia & Pain Medicine: May/June 2015 - Volume 40 - Issue 3 - p 182-212. doi: 10.1097/AAP.0000000000000223

³Regional Anesthesia in the Patient Receiving Antithrombotic or Thrombolytic Therapy: American Society of Regional Anesthesia and Pain Medicine Evidence-Based Guidelines (Fourth Edition). Regional Anesthesia and Pain Medicine. 2018 Apr;43(3):263-309. DOI: 10.1097/aap.0000000000000763. PMID: 29561531.

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