

MANAGEMENT OF ANTICOAGULANTS INTERRUPTION FOR ELECTIVE PROCEDURES

Seek specialist consultation for patients with the following: mechanical heart valves, cardiac stent within 6 months, ischemic stroke or venous thrombosis within 12 weeks. (For such patients on warfarin, consider "therapeutic bridging" - see separate guideline).

****NOTE** The times below indicate the latest a patient should take their last dose of an anticoagulant prior to elective surgery if axial (spinal/epidural) anesthesia may be used (see Page 2 if use of general or MAC anesthesia is certain)**

Medication	High bleeding risk*	Low bleeding risk**
Apixaban (Eliquis)	72 hours (3d)	48 hours (2d)
Dabigatran (Pradaxa) (Creat. Clear. \geq 50 mL/min)	72 hours (3d)	48 hours (2d)
Dabigatran (Pradaxa) (Creat. Clear. <50 mL/min)	120 hours (5d)	72 hours (3d)
Rivaroxaban (Xarelto)	72 hours (3d)	48 hours (2d)
Clopidogrel (Plavix)	168 hours (7d)	120 hours (5d)
Prasugrel (Effient)	168 hours (7d)	
Ticagrelor (Brilinta)	120 hours (5d)	
Aspirin 81mg or 325mg daily	No interruption in patients using for secondary prevention	
Enoxaparin (Lovenox) prophylactic	12 hours	
Enoxaparin (Lovenox) therapeutic	24 hours	
Heparin IV	Normal PTT	
Heparin – subcutaneous	6 hours	
Warfarin (Coumadin)	5d, target INR<1.4 morning of procedure	

These medications can restart once hemostasis is assured. Generally, this is 24 hours after a low bleeding risk procedure and 24-48 hours after a high bleeding risk procedure. An exception to this is Warfarin (Coumadin) which can be restarted at the patient's usual dose on the evening of the day of procedure.

Examples of VERY LOW risk procedures

(Continue anticoagulants w/o interruption)
Cataract surgery
Cutaneous
Dental
Endovascular
Upper GI endoscopy (EGD) without dilation

*Examples of HIGH bleeding risk procedures

Planned or potential REGIONAL ANESTHETICS (spinal, epidural, deep nerve block)
Kidney biopsy
Laminectomy and most neurosurgical procedures
Major Joint Replacement (knee, hip, shoulder)
Most cancer surgeries
Transurethral resection of the prostate
Surgeries expected to take >45 minutes

**Examples of LOW bleeding risk procedures

Abdominal hernia repair
Abdominal hysterectomy
Axillary lymph node dissection
Bronchoscopy without biopsy
Carpal tunnel release
Ophthalmologic surgery (except cataract surgery)
Central venous catheter removal
Cholecystectomy
Joint arthroscopy
Hydrocele Repair
Pacemaker and cardiac defibrillator insertion
Colonoscopy (consider bleed risk if polypectomy)
Upper GI endoscopy (EGD) if dilation is possible

MANAGEMENT OF ANTICOAGULANTS INTERRUPTION FOR ELECTIVE PROCEDURES

Page 2

For procedures known to use general or MAC sedation, the following protocol may be used as an alternative to the table on Page 1

DOAC DOSING REGIMEN	PREOPERATIVE DOAC INTERRUPTION SCHEDULE					SURGERY DAY Day 0	POSTOPERATIVE DOAC RESUMPTION SCHEDULE		
	Day -5	Day -4	Day -3	Day -2	Day -1		Day +1	Day +2	Day +3
Procedures associated with low or moderate bleeding risk									
Rivaroxaban Once a day	●	●	●	●	■	■	●	●	●
Edoxaban Once a day	●	●	●	●	■	■	●	●	●
Apixaban Twice a day	●●	●●	●●	●●	■	■	●●	●●	●●
Dabigatran Twice a day CrCl ≥50 mL/min	●●	●●	●●	●●	■	■	●●	●●	●●
Dabigatran Twice a day CrCl <50 mL/min	●●	●●	●●	■	■	■	●●	●●	●●
Procedures associated with high bleeding risk									
Rivaroxaban Once a day	●	●	●	■	■	■	■	●	●
Edoxaban Once a day	●	●	●	■	■	■	■	●	●
Apixaban Twice a day	●●	●●	●●	■	■	■	■	●●	●●
Dabigatran Twice a day CrCl ≥50 mL/min	●●	●●	●●	■	■	■	■	●●	●●
Dabigatran Twice a day CrCl <50 mL/min	●	■	■	■	■	■	■	●●	●●

● DOAC dose taken ● DOAC dose taken if hemostasis secured ■ DOAC not taken

Source: Douketis JD, Spyropoulos AC. Perioperative Management of Patients Taking Direct Oral Anticoagulants: A Review. *JAMA*. 2024;332(10):825-834. doi:10.1001/jama.2024.12708