



Table 1
Procedural Bleeding Risk Stratification

Minimal Risk	Low Risk	High Risk
<ul style="list-style-type: none"> Minor dermatologic procedures (basal cell carcinoma/squamous cell carcinoma excisions, excision of actinic keratoses, excision of premalignant or cancerous nevi) Cataract surgery Minor dental procedures (dental extractions, restorations, prosthetics, endodontics), dental cleanings, fillings Pacemaker or ICD implantation Arthrocentesis or joint injection 	<ul style="list-style-type: none"> Arthroscopy Cutaneous biopsies Lymph node biopsies Foot/hand surgery Coronary angiography Gastrointestinal endoscopy ≠ biopsy Colonoscopy ≠ biopsy Abdominal hysterectomy Laparoscopic cholecystectomy Abdominal hernia repair Hemorrhoidal surgery Bronchoscopy ≠ biopsy Epidural injections 	<ul style="list-style-type: none"> Any major surgery >45 min in duration Any surgery involving neuraxial anesthesia Major surgery with planned extensive tissue injury Cancer surgery, especially solid tumor resection Major orthopedic surgery, including shoulder replacement surgery Reconstructive plastic surgery Urologic surgery (including TURP, TURBT, or tumor ablation, nephrectomy, kidney biopsy) Gastrointestinal surgery, especially involving bowel anastomoses (including bowel resection) Colonic polyp resection (if unknown at the time of periprocedural planning, colonoscopies should be considered high risk) PEG placement, ERCP Surgery/biopsies involving highly vascular organs (kidneys, liver, spleen) Cardiac surgery Neurosurgery Spinal surgery

Table 2
Suggested Risk Stratification for Patient-specific Periprocedural Thromboembolism

Risk Category	Mechanical Heart Valve	Atrial Fibrillation	VTE
High (> 10%/y risk of ATE or > 10%/mo risk of VTE)	Mitral valve <i>with</i> major risk factors for stroke ^b Caged ball or tilting-disc valve in mitral/aortic position Recent (< 3 mo) stroke or TIA	CHA ₂ DS ₂ VASc score ≥ 7 or CHADS ₂ score of 5 or 6 Recent (< 3 mo) stroke or TIA Rheumatic valvular heart disease	Recent (< 3 mo and especially 1 mo) VTE Severe thrombophilia (deficiency of protein C, protein S or antithrombin; homozygous factor V Leiden or prothrombin gene G20210A mutation or double heterozygous for each mutation, multiple thrombophilias) Antiphospholipid antibodies Active cancer associated with high VTE risk ^c
Moderate (4% - 10%/y risk of ATE or 4% - 10%/mo risk of VTE)	Mitral valve <i>without</i> major risk factors for stroke ^b Bileaflet AVR <i>with</i> major risk factors for stroke ^b	CHA ₂ DS ₂ VASc score of 5 or 6 or CHADS ₂ score of 3 or 4	VTE within past 3-12 mo Recurrent VTE Non-severe thrombophilia (heterozygous factor V Leiden or prothrombin gene G20210A mutation)
Low (< 4%/y risk of ATE or < 2%/mo risk of VTE)	Bileaflet AVR <i>without</i> major risk factors for stroke ^b	CHA ₂ DS ₂ VASc score of 1-4 or CHADS ₂ score of 0-2 (and no prior stroke or TIA)	VTE > 12 mo ago

LEGEND: ATE - arterial thromboembolism TIA - transient ischemic attack
 CHAD₂ - congestive heart failure, hypertension, age ≥ 75 years, diabetes mellitus, prior stroke or transient ischemic attack
 CHA₂DS₂VASc - congestive heart failure, hypertension, age ≥ 75 years, diabetes mellitus, prior stroke or transient ischemic attack, vascular disease history, age ≥ 65 years, female sex

Adapted with permission from Douketis et al.¹⁴

^a Empiric risk stratification that is a starting point for assessing perioperative thromboembolism risk; should be combined with clinical judgment that incorporates individual patient-and surgery/procedure-related factors.

^b Includes: AF, prior stroke/TIA during anticoagulant interruption or other prior stroke/TIA, prior valve thrombosis, rheumatic heart disease, hypertension, diabetes, congestive heart failure, age ≥ 75 years.

^c Includes pancreatic cancer, myeloproliferative disorders, primary brain cancer, gastric cancer, and esophageal cancer.

Table 3

ANTICOAGULANT	SURGERY BLEEDING RISK	PRE-OPERATIVE INTERRUPTION						SURGERY/PROCEDURAL INTERVENTION	POST-OPERATIVE RESUMPTION			
		Day-6	Day-5	Day-4	Day-3	Day-2	Day-1		Day 1	Day 2	Day 3	Day 4
Dabigatran (CrCl ≥50 mL/min)	High				→			SURGERY/PROCEDURAL INTERVENTION				
	Low				→							
Dabigatran (CrCl 50 mL/min)	High		→									
	Low		→									
Rivaroxaban	High				→							
	Low				→							
Apixaban	High				→							
	Low				→							
Warfarin (no bridging)	High	→										
	Low	→										
Warfarin (bridging)	High	→										
	Low	→										

- No Anticoagulant
- ▒ Bridging LMWH = Dalteparin 200 IU/kg OD, tinzaparin 175 IU/kg OD or enoxaparin 1 mg/kg BID
- Bridging LMWH = Pre-op day -1: Dalteparin 100 IU/kg, tinzaparin ~ 90 IU/kg or enoxaparin 1 mg/kg in AM only

*** The above interruption guidelines are based on Thrombosis Canada Guidelines
If Neuraxial techniques are planned, please consult ASRA guidelines***

REFERENCE: Shaw J, Kaplovitch E, and Douketis J. Perioperative Management of Oral Anticoagulation. Medical Clinics of North America. July 2020. Pgs. 709-26.