Management of Anticoagulants and Antiplatelets During the Peri-Endoscopic Period *(update per ACG 04/22)*

Who is the target population?

- Patients at low risk for thromboembolism who are receiving anticoagulants or antiplatelet medications and undergoing inpatient or outpatient elective GI endoscopic procedures

Which types of procedures are "high risk" for bleeding?

- See Table 3 below in Appendix
- There is a lack of consensus regarding what is considered high versus low baseline risk of bleeding for endoscopic procedures.

Which patients are considered "high risk" for thromboembolism?

- See Table 1 in Appendix

Additional high-risk factors for thromboembolism from the American College of Gastroenterology (ACG) include patients who:

- Are within 6 months of a drug-eluting stent OR 1 month of bare metal coronary stent placement without acute coronary syndrome (ACS) history
- Are s/p an ACS event within 12 months of a drug eluting stent placement OR 2 months of bare metal stent placement
- Are within 3 months of ACS events
- Have a history of previous thromboembolism during interruption of vitamin K antagonists (VKAs)
- Have a history of certain types of surgery (cardiac valve replacement, carotid endarterectomy, major valvular surgery)

What are the updated recommendations regarding management of antithrombotic agents in the elective endoscopy setting for patients?

Drug	ACG	UW	Notes
Warfarin	Continue instead of temporarily interrupting (1-7 days) when undergoing elective/planned endoscopic GI procedures If warfarin is to be held in the periprocedural period for elective/planned endoscopic GI procedures, bridging anticoagulation is not recommended in most cases (unless high thromboembolic risk)	Low Thromboembolism Risk: Hold day -5 to -1 of procedure High/Moderate Thromboembolism Risk: • Hold day -5 to -1 of procedure • Bridge with LMWH starting day -3 (or when INR < lower limit of range) • Last dose of LMWH on day -1 or day -2 depending on renal function	In many patients with AF and in some patients with mechanical heart valves, forgoing bridging anticoagulation was shown to be non-inferior to perioperative bridging with LMWH for arterial thromboembolism prevention AND showed decreased risk of major bleeding (per BRIDGE and PERIOP-2 trial*) – if there is uncertainty about the need for bridging, consultation with Cardiology is advised. **not statistically significant in PERIOP-2*
Direct Oral Anticoagulants (DOACs)	Hold for 1-2 days, excluding day of procedure Temporarily interrupt rather than continue prior to procedure	Generally, hold 1-3 days prior to procedure See UW Medicine Anticoagulation Services website for details • Based on agent, risk of bleeding, and renal function	Limited data available for favoring to continue DOAC therapy Bridging with LMWH or other parenteral therapy is not necessary

Management of Anticoagulants and Antiplatelets During the Peri-Endoscopic Period *(update per ACG 04/22)*

Drug	ACG	UW*	Notes
Single Antiplatelet	ASA: Continue ASA (81-325mg) for patients undergoing elective/GI procedures unless high risk of bleeding $P2Y_{12}$ inhibitors: No recommendation for or against temporary interruption of $P2Y_{12}$ for patients on single $P2Y_{12}$ agent	*Not separated by single vs dual, but rather by recent PCI, secondary prevention, primary prevention ASA: Generally, continue ASA (81-325mg) without interruption for GI endoscopy/colonoscopy $P2Y_{12}$ inhibitors: Suggest 7-days temporary interruption of the $P2Y_{12}$ inhibitor (clopidogrel, ticagrelor, prasugrel) if approved by prescriber from Cardiology/Vascular/Neurology	
Dual Antiplatelet Therapy (DAPT)	Suggest temporary interruption of the $P2Y_{12}$ inhibitors while continuing ASA • Per US FDA recommendation, consider 7-days interruption for prasugrel or 5-days interruption for clopidogrel/ticagrelor	ASA: Continue without interruption $P2Y_{12}$ inhibitors: Suggest 7-days temporary interruption of the $P2Y_{12}$ inhibitor (clopidogrel, ticagrelor, prasugrel) prior to procedure) if approved by prescriber from Cardiology/Vascular/Neurology	

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APPENDIX:

TABLE 1

Table 1. Empiric peri-procedural thromboembolic risk stratification for patients receiving anticoagulant therapy (1)

	Indication for anticoagulation		
Risk stratum	**Mechanical heart valve**	**Atrial fibrillation**	**Venous thromboembolism**
High[a]	• Any mitral valve prosthesis • Any caged-ball or tilting disk aortic valve prosthesis • Recent (within 3 mo[b]) stroke or transient ischemic attack	• $CHADS_2$ score: 5 or 6 • CHA_2DS_2VaSc score: ≥7 • Recent (within 3 mo) stroke or transient ischemic attack • Rheumatic valvular heart disease	• Recent (within 3[b] mo) VTE • Severe thrombophilia (e.g., deficiency of protein C, protein S or antithrombin, antiphospholipid antibodies, multiple abnormalities)
Moderate	• Bileaflet aortic valve prosthesis and ≥1 of following: atrial fibrillation, previous stroke or transient ischemic attack, hypertension, diabetes, congestive heart failure, aged older than 75 yr	• $CHADS_2$ score: 2 to 4 (no previous stroke or transient ischemic attack) • CHA_2DS_2VaSc score: 5 or 6	• VTE within the past 3–12 mo • Nonsevere thrombophilia (e.g., heterozygous factor V leiden or prothrombin gene mutation) • Recurrent VTE • Active cancer (treated within 6 mo or palliative)
Low	• Bileaflet aortic valve prosthesis without atrial fibrillation and no other risk factors of stroke	• $CHADS_2$ score: 0 or 1 • CHA_2DS_2VaSc score: 1–4	• VTE more than 12 mo ago and no other risk factors

Sources used by Abraham et al. (1) for generating this empiric classification of procedures included the International Society on Thrombosis and Haemostasis Guidance statement (16), the BRIDGE trial (3), societal guidelines published before preparation of this table (10,11), and expert opinion by the authors.

Patients at a high risk of thromboembolic events in whom elective procedures should be deferred include those with *recent (within 3 mo) stroke or TIA* (for mechanical valve and atrial fibrillation indication groups) and *recent (within 3 mo) VTE* (comprising lower limb deep vein thrombosis or pulmonary embolism). Decisions regarding procedural timing and other clinical considerations (such as bridge anticoagulation) in high-risk patients for thromboembolic events should be determined on a case-by-case basis in a multidisciplinary fashion.

VTE, venous thromboembolism.

[a]High-risk patients may also include patients with previous thromboembolism during temporary interruption of VKA and patients undergoing certain types of surgery (e.g., cardiac valve replacement, carotid endarterectomy, and major vascular surgery).

Management of Anticoagulants and Antiplatelets During the Peri-Endoscopic Period *(update per ACG 04/22)*

TABLE 3

Table 3. Empiric endoscopic procedural bleeding risk stratification

High bleeding risk procedures (30-d risk of major bleed >2%)	Low/moderate bleeding risk procedures (30-d risk of major bleed ≤ 2%)
Polypectomy (≥1 cm)	EGD with/without biopsy
PEG/PEJ placement	Colonoscopy with/without biopsy
ERCP with biliary or pancreatic sphincterotomy	Flexible sigmoidoscopy with/without biopsy
EMR/ESD	ERCP with stent (biliary or pancreatic) placement or papillary balloon dilation without sphincterotomy
EUS-FNA	EUS without FNA
Endoscopic hemostasis (excluding APC)	Push enteroscopy and diagnostic balloon-assisted enteroscopy
Radiofrequency ablation	Enteral stent deployment
POEM	Argon plasma coagulation
Treatment of varices (including variceal band ligation)	Balloon dilation of luminal stenoses
Therapeutic balloon-assisted enteroscopy	Polypectomy (<1 cm)
Tumor ablation	ERCP without biliary or pancreatic sphincterotomy
Cystogastrostomy	Marking (including clipping, electrocoagulation, and tattooing)
Ampullary resection	Video capsule endoscopy
Pneumatic or bougie dilation	
Laser ablation and coagulation	

The sources used for the empiric classification of procedures included the International Society on Thrombosis and Haemostasis Guidance Statement, the BRIDGE trial, previously published guidelines, and expert opinion by the authors.
APC, argon plasma coagulation; EGD, esophagogastroduodenoscopy; EMR, endoscopic mucosal resection; ERCP, endoscopic retrograde cholangiopancreatography; ESD, endoscopic submucosal dissection; EUS, endoscopic ultrasound; FNA, fine-needle aspirate; PEG, percutaneous endoscopic gastrostomy; PEJ, percutaneous endoscopic jejunostomy; POEM, peroral endoscopic myotomy.

Management of Anticoagulants and Antiplatelets During the Peri-Endoscopic Period *(update per ACG 04/22)*

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