

Non-variceal upper GI bleeding

Platelet transfusion for life-threatening bleeding

- ▶ APAGE-APSDE: not recommended
- ▶ ASGE: an option for patients on antiplatelet agents
- ▶ BSG-ESGE: an option for patients on DOACs

Patient on DAPT

- ▶ APAGE-APSDE: continue aspirin, withhold second antiplatelet agent for up to 5 days after endoscopic haemostasis
- ▶ ASGE: discuss with cardiologist
- ▶ ESGE: continue aspirin, consult cardiologist for resumption of second antiplatelet agent

Patients on warfarin

- ▶ APAGE-APSDE: low-dose vitamin K (1–2.5 mg) for warfarin reversal
- ▶ ESGE and ACCP: 5–10 mg of vitamin K for warfarin reversal

Resumption of warfarin

- ▶ APAGE-APSDE: resume warfarin by day 3 once adequate haemostasis is achieved; consider bridging with unfractionated heparin if high thrombotic risk (box 2)
- ▶ ESGE: resume warfarin between 7 and 15 days following the bleeding event for most patients; no mention about bridging

Resumption of DOACs

- ▶ APAGE-APSDE: resume DOACs by day 3 once adequate haemostasis is achieved; no heparin bridging
- ▶ ASGE/ESGE/BSG-ESGE: not specified

Elective endoscopic procedures

Procedures with high bleeding risks

- ▶ APAGE-APSDE: special attention to ultra-high risk procedures
- ▶ ASGE: ultra-high procedures not covered
- ▶ BSG-ESGE: recognise certain procedures carry very high bleeding risk

Timing of elective procedures in patients with coronary stents or ACS

- ▶ APAGE-APSDE: defer procedures within first 6 weeks, high risk from 6 weeks to 6 months, risk is independent of type of coronary stents
- ▶ ASGE: defer procedures possibly up to 12 months in patients with DES on DAPT
- ▶ BSG-ESGE: risky to discontinue second antiplatelet agent in patients with DES within 12 months or BMS within 1 month of placement

Bridge therapy

- ▶ APAGE-APSDE: non-valvular atrial fibrillation with CHA₂DS₂-VASC score >5
- ▶ ASGE: non-valvular atrial fibrillation with CHA₂DS₂-VASC score >2
- ▶ BSG-ESGE: non-valvular atrial fibrillation not indicated regardless of CHA₂DS₂-VASC score

DOACs

- ▶ APAGE-APSDE: no need to omit DOACs before low-risk procedures; resume DOACs when adequate haemostasis is achieved after high-risk procedures; no heparin bridging
- ▶ ASGE: no need to omit DOACs before low-risk procedures; resume DOACs until adequate haemostasis is ensured after high-risk procedures; consider heparin bridging if DOACs cannot be resumed within 12–24 hours
- ▶ BSG-ESGE: omit morning dose of DOACs on the day of low-risk procedures; delay the resumption of DOACs for at least 24–48 hours after high-risk procedures; no heparin bridging

欧米との違いを表しています。

Table 1 Stratification of elective endoscopic procedures based on the risk of haemorrhage

Low risk*	High risk	Ultra-high risk†
Diagnostic endoscopy with biopsy	Polypectomy	Endoscopic submucosal dissection
Endoscopic ultrasound without fine needle aspiration	ERCP with sphincterotomy±balloon sphincteroplasty	Endoscopic mucosal resection of large (>2 cm) polyps
ERCP with biliary or pancreatic stenting	Dilatation of strictures	
Diagnostic push or device-assisted enteroscopy	Injection or banding of varices	
Video capsule endoscopy	Percutaneous endoscopic gastrostomy or jejunostomy	
Oesophageal, enteral and colonic stenting	Endoscopic ultrasound with fine needle aspiration	
Argon plasma coagulation	Ampullectomy	

*We recommend continuation of antiplatelet agents and/or anticoagulants.

†We recommend discontinuation of all antiplatelet agents and/or anticoagulants.

ERCP, endoscopic retrograde cholangiopancreatography.

内視鏡的処置のリスク分類です

Table 2 Management of antithrombotic therapy in elective endoscopic procedures with high bleeding risks

Thrombotic risk category	Cardiac events*	Antithrombotic therapy in high bleeding risk elective procedures
Very high	ACS or PCI <6 weeks	▶ Defer procedure
High	ACS or PCI 6 weeks–6 months ago	▶ Defer procedure until >6 months after cardiac event if possible ▶ If elective procedure is deemed necessary within 6 months: DAPT ▶ Continue aspirin ▶ Withhold P2Y12 receptor inhibitors 5 days before ▶ Resume P2Y12 receptor inhibitors after adequate haemostasis Warfarin ▶ Withhold warfarin 5 days before ▶ Resume warfarin after adequate haemostasis ▶ Heparin bridging DOACs ▶ Withhold DOACs 2 days before ▶ Resume DOACs after adequate haemostasis ▶ No heparin bridging
Moderate to low	▶ ACS or PCI >6 months ago; ▶ stable coronary artery disease	Antiplatelet agents ▶ Continue aspirin ▶ Withhold P2Y12 receptor inhibitors 5 days before ▶ Resume P2Y12 receptor inhibitors after adequate haemostasis Warfarin ▶ Withhold warfarin 5 days before ▶ Resume warfarin after adequate haemostasis ▶ No heparin bridging DOACs ▶ Withhold DOACs 2 days before ▶ Resume DOACs after adequate haemostasis ▶ No heparin bridging

*Current evidence indicates that new generation drug-eluting stents and bare metal stents carry similar thrombotic risks. The risk is highest within the first 6 weeks of PCI. The risk remains high from 6 weeks to 6 months, then remains constant thereafter.^{88,89}

ACS, acute coronary syndrome; DAPT, dual antiplatelet therapy; DOACs, direct oral anticoagulants; PCI, percutaneous coronary intervention.

血栓症発症のリスク分類です。

Box 2 Indications of heparin bridging for temporary discontinuation of warfarin

- ▶ Non-valvular atrial fibrillation with a CHA₂DS₂-VASc score >5*
- ▶ Metallic mitral valve
- ▶ Prosthetic valve with atrial fibrillation
- ▶ <3 months after VTE
- ▶ Severe thrombophilia (protein C or protein S deficiency, antiphospholipid syndrome)

*CHA₂DS₂-VASc, congestive heart failure (1 point), hypertension (1 point), age ≥75 years (2 points), diabetes mellitus (1 point), stroke, TIA or thromboembolism (2 points), vascular disease (1 point), age 65–74 years (1 point), female sex (1 point).^{92 93}

VTE, venous thromboembolism.

Table 3 Timing of discontinuing DOACs before high-risk endoscopic procedures according to creatinine clearance¹⁰⁰

Creatinine clearance (mL/min)	Timing of discontinuing DOACs before high-risk endoscopic procedures (days)	
	Dabigatran	Apixaban/rivaroxaban/edoxaban
>80	2	2
50–80	3	2
30–50	4	2
15–30	Contraindicated	2
<15	Contraindicated	Not recommended

リスクの高い内視鏡検査の場合はDOACの中止期間は腎機能に関係する。