Role of Endoscopy in Anticoagulation Planning

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No Disclosure

Take Home Points

1. Anticoagulation decisions before and after endoscopies
   - Routine low or high risk outpatient endoscopies
     - VKA/NOAC/ASA
   - Emergent inpatient endoscopeis
2. Active bleeding in high risk patients
   - AVR/MVR/Hx CVA
   - Revent MI
   - Reversal agents available, risk/benefit

Objectives

1. Understand NEW approaches to anticoagulation
   - Guidelines in outpatient LOW/HIGH risk endoscopy
2. Understanding NEW reversal agents for GI hemorrhage patients on anticoagulation

Role of Endoscopic Evaluation to Assist in Anticoagulation Therapy

- High Risk Procedures
  - Polypectomy
  - Biliary sphincterotomy
  - Treatment of varices
  - PEG placement/ PEJ
  - Balloon enteroscopy
  - Enteroscopic hemostasis
  - Tumor ablation
  - EUS/EMR

Role of Endoscopic Evaluation to Assist in Anticoagulation Therapy – cont.

- Low risk
  - Diagnostic EGD/colonoscopy
  - ERCP with stent
  - Push enteroscopy
  - APC
  - Barretts ablation

Inherent Risk of Bleeding with VKA and NOAC's

A. Warfarin
   - Incidence major bleeding 1-3%
   - GI bleeding represents common bleeding site
   - Upper greater than lower GIB

B. NOAC's
   - Risk of bleeding uncertain
   - No significant difference between VKA& NOAC's
   - Experience shows more complications with Coumadin than DOAC's

Acute GI Bleeding with Patients on Anticoagulation

A. Risk of thrombotic events and hemorrhagic risk

B. Pre-endoscopic evaluation of anticoagulation reversal

Timing of Endoscopy

1. Optimal Target INR
   - INR 1.5 - 2.5
2. Treatment Options VKA Reversal
   a. Vit K 1 – 5 mg over 30
   b. FFP – few hours effect
   c. PPC work in 2
   d. FVIIa rapid reversal has a higher risk of thromboembolism

Types of Anticoagulation

1. VKA
   - Vit K / FFP / PCC
2. NOAC’s
   - Clearance 12 – 24 hours
   - No reversal agent
   - Defer endoscopy 12 – 24 hours

Post-Endoscopic Management

1. VKA resumption
   - Resume after 7 days

2. DOAC’s resumption

Antithrombic drugs: duration of action and approach to reversal when indicated

Drug class	Specific agent(s)	Duration of action	Approach to reversal based on procedural urgency	
			Elective	Urgent
APAs	Aspirin	7-10 days	NA	Hold, can give platelets
	NSAIDs	Varies	NA	Hold
	Dipyridamole (Persantine)	2-3 days	Hold	Hold
	Thienopyridines: clopidrogrel (Plavix) prasugrel (Effient) ticlodipine (Ticlid) ticagrelor (Brilinta)	5-7 days: clopidogrel, 3-5 days: ticagrelor 5-7 days: prasugrel 10-14 days: ticlopidine	Hold	Hold
	GPIIb/IIIa inhibitors: tirofiban (Aggrastat) abciximab (ReoPro) eptifibatide (Integrilin)	tirofiban: 1-2 seconds abciximab: 24 hours eptifibitide: 4 hours	NA	Hold HD: tirofiban
	PAR-1 inhibitor: vorapaxar (Zontivity)	5-13 days	Hold	Hold
Anticoagulants	Warfarin (Coumadin)	5 days	Hold	Vitamin K, PCC
	UFH	IV 2-6 hours SQ 12-24 hours	Hold	Protamine sulfate∗ (partial)
	LMWH: enoxaparin (Lovenox) dalteparin (Fragmin, Pfizer Inc, New York, NY, USA)	24 hours	Hold	Protamine sulfate, consider rVIIa
	Fondaparinux (Arixtra)	36-48 hours		Protamine sulfate, consider rVIIa
	Direct factor Xa Inhibitor: rivaroxaban (Xarelto) apixaban (Eliquis) edoxaban (Savaysa)	See Tables 7 and 8 (next slide)	Hold	Charcoal (if last intake within 2-3 hours); nonactivated PCC or activated PCC
	Direct thrombin inhibitor, oral: dabigatran (Pradaxa) IV: Desirudin (Iprivask, Aventis Pharmaceuticals Inc., Bridgewater, NJ, USA)	See Table 9 (next slide)	Hold	Charcoal (if last intake within 2-3 hours); nonactivated PCC or activated PCC; HD

Management of Direct factor Xa Inhibitors

Table 7. Periprocedural management of apixaban (Eliquis)

Creatinine clearance (mL/min)	Time to onset of action (h)	Timing of discontinuation before high-risk endoscopic procedure (day)
>60	1-3	1 or 2
30-59	1-3	3
15-29	1-3	4

Table 8. Periprocedural management of rivaroxaban (Xarelto)

Creatinine clearance (mL/min)	Time to onset of action (h)	Timing of discontinuation before high-risk endoscopic procedure (day)
>90	2-4	≥1
60-90	2-4	2
30-59	2-4	3
15-29	2-4	4

Management of Direct Thrombin Inhibitor

Table 9. Perioperative management of edoxaban (Savaysa)

Creatinine clearance (mL/min)	Time to onset of action (h)	Timing of discontinuation before high-risk endoscopic procedure (day)
>90	2-4	≥1
60-90	2-4	2
30-59	2-4	3
15-29	2-4	4

Patients MHV

1. Vitamin K 1 – 2.5 mg IV & FFP was recommended
2. Higher Risk
   - Mitral MHV, Multiple MHV
   - History of prior CVA or AF on MHV <6 months old
   - Heparin within 72 hours

References

1. The management of antithrombin agents for patients undergoing GI endoscopy. ASGE, Vol 83; Nov 2016
2. When should antiplatelet agents and anticoagulation be restored after GI bleed? The Hospitalist 12/2013
3. Management of anticoagulation in patients with acute Gibleeding. Digestive & Liver Disease, Vol 4 Issue 8; Aug 2015