Acute Lower Gastrointestinal Bleeding (LGIB): An Evidence-based Practical Approach

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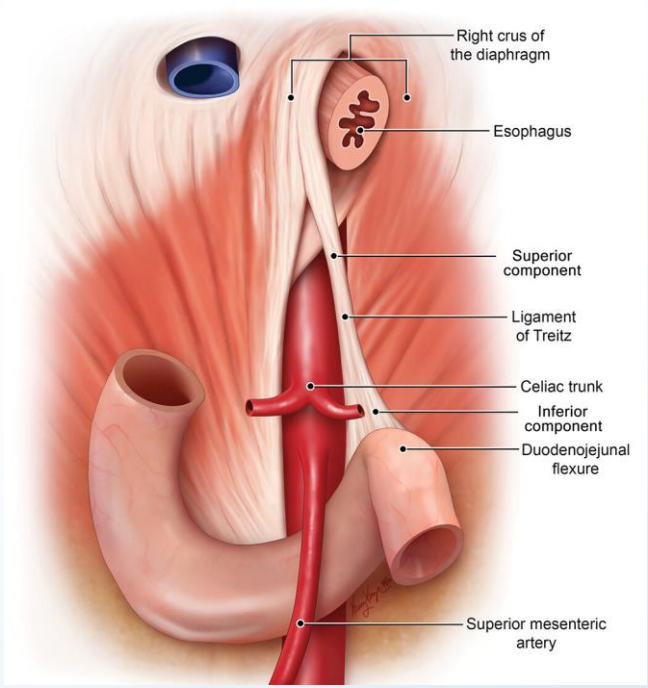
Outline

- Definition and etiologies of LGIB
- Clinical Assessment
- Management

Etiologies

Definition: Bleeding from a source distal to the ligament of Treitz (Mainly Colon, Rectum)



Common Etiologies

- Diverticular Bleeding
- Angioectasias
- Ischemic Colitis
- Neoplasms (Colon cancer, Polyps)
- Colitis (Inflammatory Bowel Disease, Infection, Radiation)

Clinical Assessment

Resuscitation: IV crystalloids

History &Physical Examination:

- Bleeding: Pattern and amount
- Comorbidities(Cardiac, Renal), Prior GI Bleed, Medication(NSAIDs, Anti-Platelet, Anti-coagulant)
- Vital signs (Tachycardia, Orthostatic hypotension)

Labs: CBC, Coagulation profile, Renal function

Risk scores: Oakland Score, SHA2PE score

Oakland K, Gut 2019
Sengupta N, AJG,2024
Konstantinos T, Endoscopy, 2021

Clinical Assessment

Risk score

Low risk triage to discharge and treated as outpatient

- Oakland score ≤ 8
- $SHA_2PE \leq 1$

Adverse outcomes prediction

- ABC score
- NOBLADS score
- Sengupta score
- Birmingham score
- Severe Acute LGIB(SALGIB) score

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Clinical Assessment

Oakland score for predicting the safe discharge of patients presented with acute LGIB

Variables	Score
Age(years)	
< 40 40-69 >70	0 1 2
Sex	
Female Male	0 1
Previous LGIB admission	
No Yes	0 1
DRE	
No blood Blood	0 1

Variables	Score
SBP(mmHg)	
50-89 90-119 120-129 130-159 >160	5 4 3 2 0
Hemoglobin, g/dL	
36-69 70-89 90-109 110-129 130-159 >160	22 17 13 8 4 0

Oakland score ≤ 8:

(ESGE2023, ACG2024, BSG2019)

Discharge and treated as Outpatient

Oakland, Lancet Gastroenterol Hepatol, 2017

Clinical Assessment

Original Investigation | Gastroenterology and Hepatology

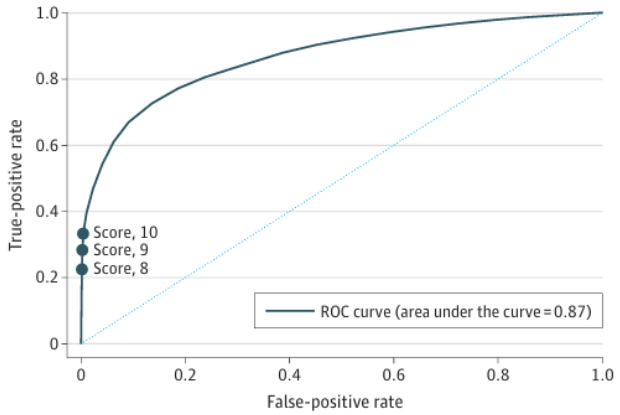
External Validation of the Oakland Score to Assess Safe Hospital Discharge Among Adult Patients With Acute Lower Gastrointestinal Bleeding in the US

Kathryn Oakland, MD; Sandeepkumar Kothiwale, PhD; Tyler Forehand; Edmund Jackson, PhD; Cliff Bucknall, MD; Michael S. L. Sey, MD, MPH; Siddharth Singh, MD, MS
Vipul Jairath, MD, PhD; Jonathan Perlin, MD

Table 3. Adverse Outcomes Among Patients With Low-Risk Oakland Scores

Outcome	Oakland Score, No. (%)		
	≤8 Points (n = 3305)	≤9 Points (n = 4888)	≤10 Points (n = 6770)
RBC transfusion	132 (4.0)	236 (4.8)	383 (5.7)
Endoscopic hemostasis	11 (0.3)	16 (0.3)	21 (0.3)
Mesenteric embolization	0	0	0
Surgery	0	0	0
In-hospital rebleeding	153 (4.6)	223 (4.6)	344 (5.1)
In-hospital death	37 (1.1)	60 (1.2)	96 (1.4)
Readmission with subsequent bleeding within 28 d	7 (0.2)	19 (0.4)	39 (0.6)
Any adverse outcome	182 (5.5)	316 (6.5)	507 (7.5)
Safe discharge sensitivity, %	98.4	97.5	96.0
Safe discharge specificity, %	16.0	23.42	31.9

Figure 1. Receiver Operating Characteristic Curve for Safe Discharge



Oakland score ≤ 8:

Safe discharge sensitivity 98.4%

Identify population of 8.7%

AUROC 0.87(Safe discharge)

Score 8-10

: No embolization and surgery needed

Oakland, JAMA, 2020

Management

Medication management

Nonaspirin- NSAIDs

No benefit of changing NSAIDs to selective COX-2 inhibitors (Unlike UGIB !!)

Antiplatelets

Aspirin

ASA for Primary prevention: Consider Discontinuation

ASA for Secondary prevention: Generally, continue or reintroduce early

P2Y12 inhibitor

Hold temporarily in the case of severe bleeding

Multidisciplinary team approach (Cardiologist and Gastroenterologist) especially in the case with recent cardiac stent within 1 year

Should be resume within a maximum of 5 days

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Management

Medication management

Anticoagulants

Vitamin K Antagonists

- Generally hold, except for low risk patients
- In high thrombotic risk: LMWH should be considered at 48 hours
- In life-threatening LGIB and INR exceeding therapeutic range: Consider Reversal
- Reversal Agents:

  4-factor prothrombin complex concentration, PCC: Factor II, VII, IX, X

  Vitamin K

  FFP
- For effective endoscopic hemostasis (INR should be less than or equal to 2.5)

Sengupta N, AJG,2024
Konstantinos T, Endoscopy, 2021

Management

Medication management

Anticoagulants

DOAC (Direct Oral Anticoagulants)

- Generally hold, except for low risk patients
- Life-threatening LGIB and DOACs taken within the past 24 hours: Consider Reversal
- Agents: Idarucizumab for dabigatran

  Andexanet alfa for apixaban and rivaroxaban

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Management

Transfusion management

Blood transfusion:

Restrictive strategies (Hemodynamically stable with no history of CVD)

Threshold Hb ≤ 7 g/dl, with target of post-transfusion at 7-9 g/dl

More liberal strategy (Hemodynamically stable with known CVD)

Threshold Hb ≤ 8 g/dl, with target of post-transfusion at 10 g/dl

Platelet transfusion:

Severe LGIB keep Platelet count > 30x 10^9/L and

higher threshold of > 50 x10^9/L in case with planned endoscopic procedures

Antifibrinolytics (Tranexamic acid): No significant benefit

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Konstantinos T, Endoscopy, 2021

Diagnostic Strategy

CT Angiography VS Colonoscopy

Diagnostic Strategy

CT Angiography

When to perform CTA

- Severe, ongoing bleeding, *hemodynamic instability*
  Shock index (Heart rate / Systolic BP) > 1

- Rapid test, no bowel prep needed
- If extravasation found Possible Embolization by Interventional Radiologist

Oakland K, Gut 2019

Diagnostic Strategy

CT Angiography

Factor associated with Positive CTA

- Within 4 hours of hematochezia
- Shock index > 1
- Recent bowel resection or endoscopic intervention
- Transfusion of 3 unit of PRBC per day
- Use of Antiplatelet

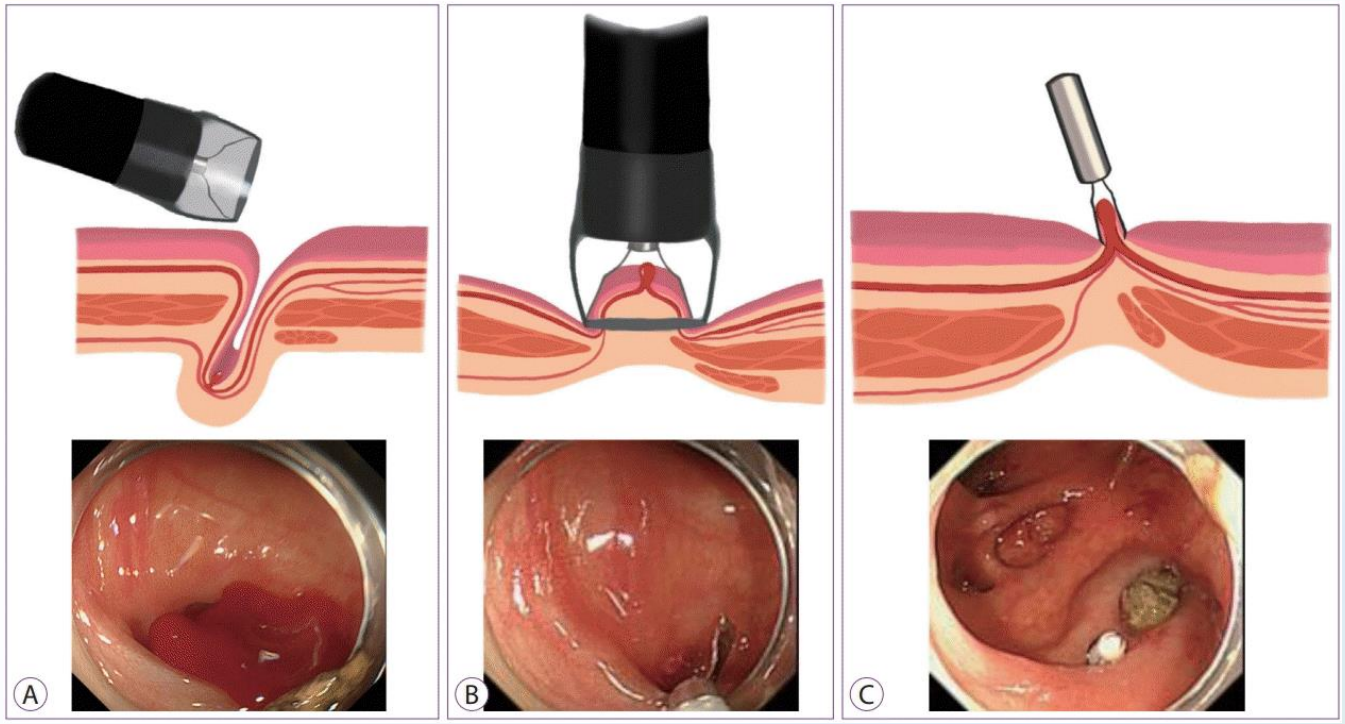
Oakland K, Gut 2019
Sengupta N, AJG,2024

Diagnostic Strategy

Colonoscopy

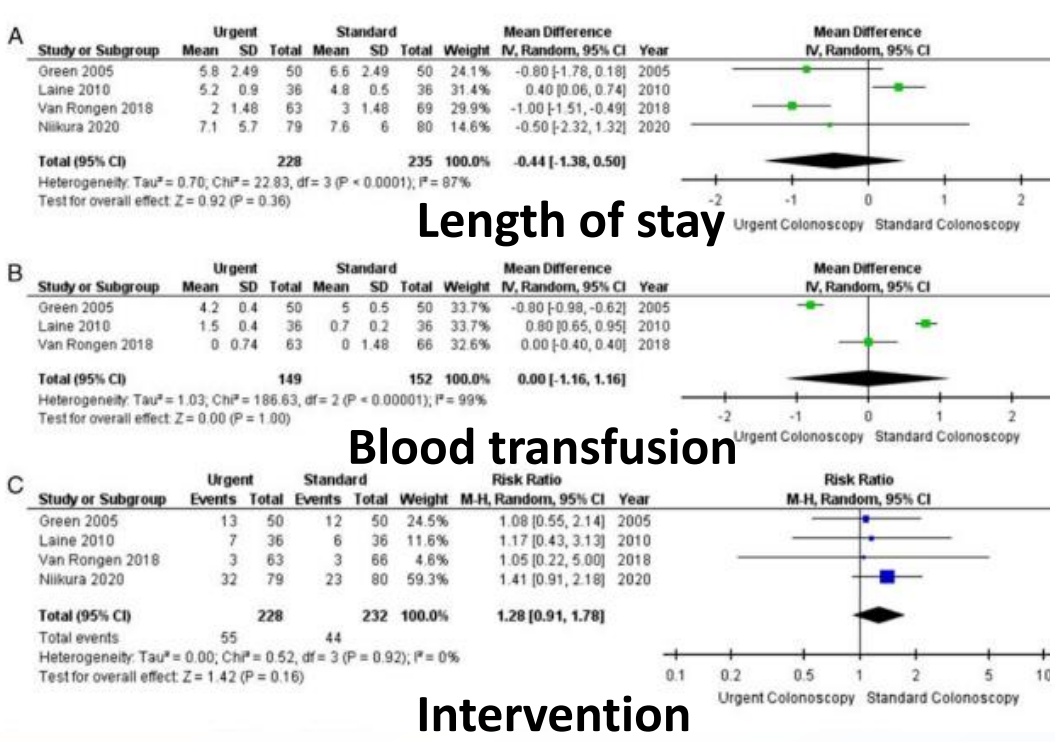
When to use colonoscopy

- Stable or slowed bleeding
- Highest yield after adequate bowel prep
- Therapeutic potential: Clipping, banding, APC
- Timing:
  Within 24-72 hours is acceptable ,
  No mortality benefit to < 24 hours



Diagnostic Strategy

Urgent vs Standard Colonoscopy



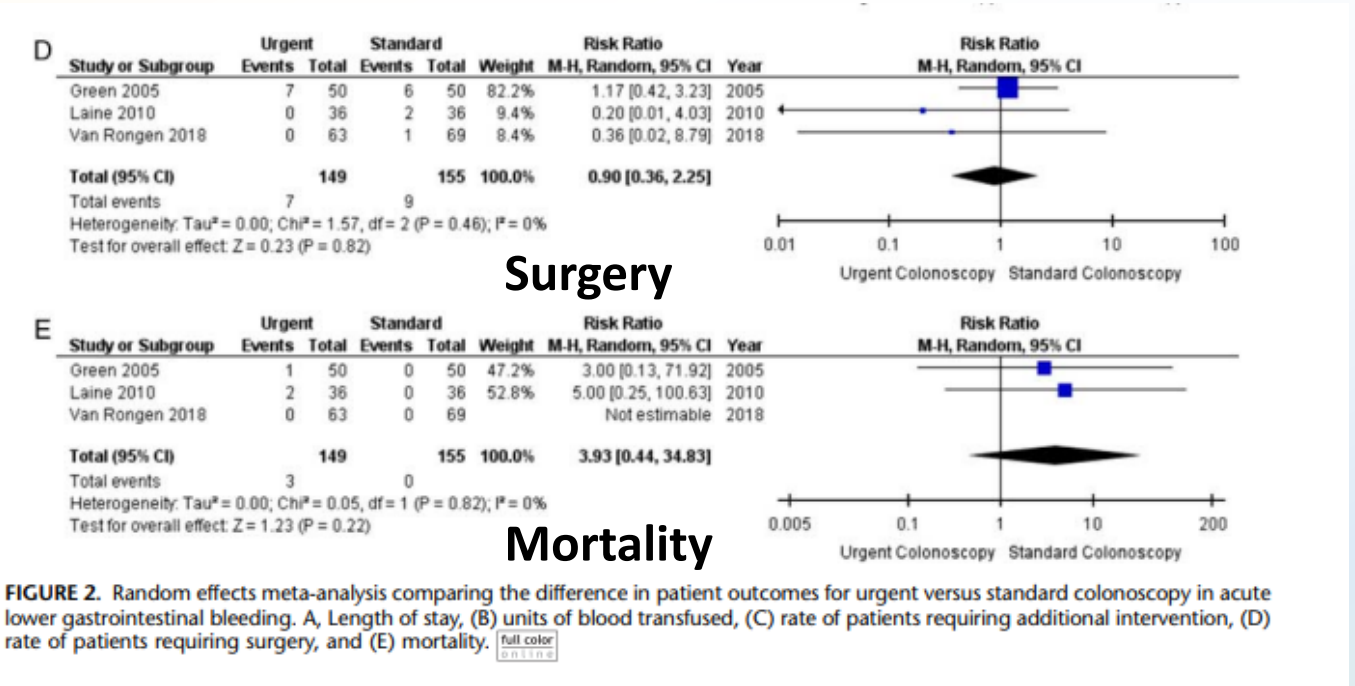


FIGURE 2. Random effects meta-analysis comparing the difference in patient outcomes for urgent versus standard colonoscopy in acute lower gastrointestinal bleeding. A, Length of stay, (B) units of blood transfused, (C) rate of patients requiring additional intervention, (D) rate of patients requiring surgery, and (E) mortality. full color online

No different in outcomes

Anvari S, J Clin Gastroenterol, 2020

Diagnostic Strategy

Colonoscopy:

- Carefully inspection during insertion and withdrawal including terminal ileal intubation
- Clear cap assisted
- In patient with high quality colonoscopy within 12 months showing diverticulosis and bleeding subsided: No colonoscopy needed
- 4-6 L of PEG over 3-4 hours (Alternatively, Split-dose and/or the use of 1 L low-vol prep)
- Unprepared evaluation or routine flexible sigmoidoscopy: NOT RECOMMENDED

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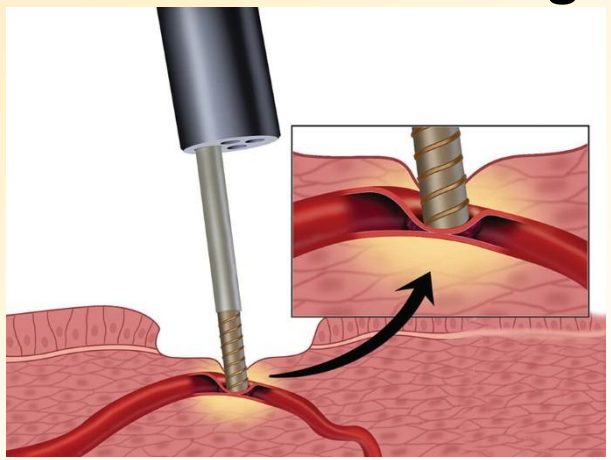
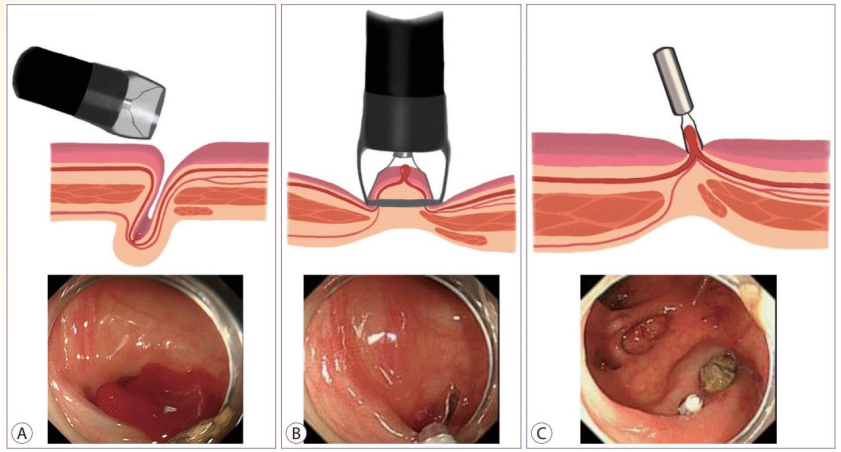
Diagnostic Strategy

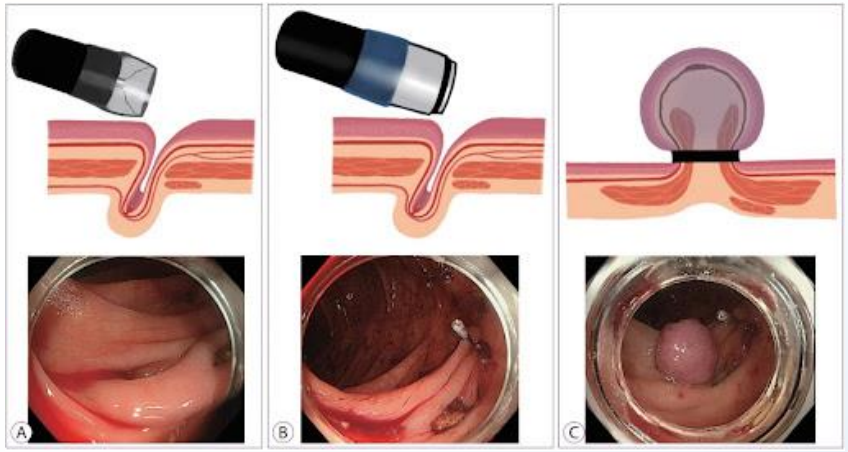
Diverticular bleeding



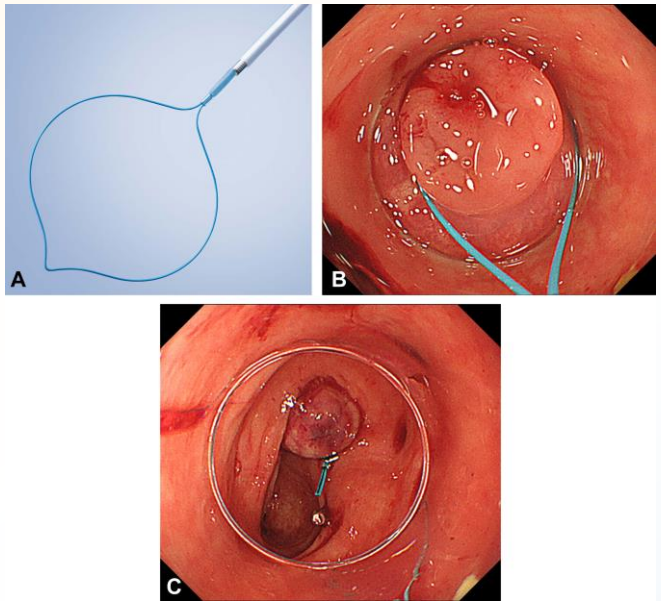
Combined adrenaline injection with contact thermal coagulation



Endoscopic clipping



Endoscopic ligation



Endoscopic detachable snare

Hemostatic topical agents

Diagnostic Strategy

Angioectasia

Argon plasma coagulation (APC)

Management Flow

LGIB

Bleeding severity assessment
Clinical judgement (History and Physical Exam

Hemodynamically unstable
Resuscitation

Diagnosis
CTA
UGI endoscopy unless bleeding site identified by CTA
Reserve emergency laparotomy in failed endoscopy and radiology

Treatment
Transcatheter embolization within 60 mins
Surgery if failed endoscopic or radiologic treatment

Management Flow

LGIB

Bleeding severity assessment
Clinical judgement (History and Physical Exam)

Hemodynamically unstable
Resuscitation

Diagnosis
CTA
UGI endoscopy unless bleeding site identified by CTA
Reserve emergency laparotomy in failed endoscopy and radiology

Treatment
Transcatheter embolization within 60 mins
Surgery if failed endoscopic or radiologic treatment

Hemodynamically stable
Safe discharge and outpatient treatment if
OAKLAND score ≤ 8

Diagnosis
Colonoscopy
Adequate bowel prep 4-6 L

Treatment
Diverticular bleeding: TTS/Cap-mounted clip, EBL
Angioectasia: APC
Delayed post-polypectomy bleeding
- Mechanical therapy (TTS/cap-mounted clip or EBL)
- Contact thermal treatment

Thank you for your attention