Journal Watch

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1. Sengupta N, Feuerstein JD, Jairath V, et al. Management of patients with acute LGIB: an updated ACG guideline. Am J Gastroenterol 2023;118(2):208–231. DOI: 10.14309/ajg.0000000000002130

These guidelines are updated to the previously published 2016 ACG LGIB guidelines. LGIB in this refers to hematochezia or bright red blood per rectum originating from a colorectal source.

Salient features are as follows:

- In the case of hematochezia with hemodynamic instability, an upper endoscopy should be performed to exclude a proximal source of bleeding.
- Urgent colonoscopy within 24 hours has not been shown to improve clinical outcomes such as rebleeding and mortality. Hence, a nonemergent inpatient colonoscopy is recommended in hospitalized patients with LGIB.
- Advocate restrictive strategy of pure RBC transfusion (hemoglobin level of 7 gm/dL) in hemodynamically stable.
- Endoscopic hemostasis can be considered safe at an INR of ≤2. INR at the onset of LGIB or immediately before endoscopy has no association with rebleeding risk.
- Most patients with LGIB on VKA do not require reversal. Only consider when life-threatening LGIB and INR are substantially high.
- In patients on VKAs who require reversal, four-factor PCC is preferred to FFP because of the rapidity of INR reduction.
- Platelets should be administered if <30,000. If an endoscopic procedure is planned, then the threshold of 50,000 is recommended.
- There is no benefit of routine platelet transfusion for patients on antiplatelets.
- Strongly recommend against the administration of antifibrinolytics (tranexamic acid) in LGIB.
- The use of a clear cap is recommended to assist in the detection and treatment of bleeding.
- For patients on DOAC, reversal is to be considered only in cases with life-threatening LGIB that do not respond to initial resuscitation and cessation of the anticoagulant alone. Targeted reversal agents (idarucizumab for dabigatran and andexanet alfa for apixaban and rivaroxaban) should be used if the DOAC has been taken within the last 24 hours.
    - For patients with LGIB on cardiac aspirin for secondary prevention, aspirin should be continued if possible.
    - Nonaspirin antiplatelets should be held only if severe hematochezia.
    - Computed tomography angiography (CTA) is of low yield in patients with minor bleeding or those in whom bleeding has subsided. Positive predictive factors for CTA are CTA done within 4 hours, recent bowel resection/intervention; >3 PRBC transfusions; antiplatelets use; hypotension, or tachycardia.
    - Computed tomography angiography (CTA) should be an initial diagnostic test in patients with ongoing hemodynamically significant hematochezia. If CTA demonstrates extravasation, prompt referral to an interventional radiologist for transcatheter arteriography and possible embolization should be considered. For specialized centers endoscopic hemostasis can also be considered after a positive CTA.
    - A 99m technetium-labeled RBC scintigraphy has significant limitations—the long duration of the study and the inability to precisely localize the site of bleeding. CTA has greater utility in assessing LGIB in active stable and hemodynamically unstable LGIB.
    - Red blood cell (RBC) scintigraphy has a diminishing role in the diagnosis and may be used in rare circumstances where CTA is unavailable or contraindicated because of a high concern for contrast-induced nephropathy.
    - Anticoagulation should be resumed as soon as LGIB subsides, as the early resumption of anticoagulation has been shown to decrease the risks of postbleeding thromboembolism and mortality.
    - The preferred treatment option for postpolypectomy bleed is clipped; colonic angioectasias is APC; diverticular hemorrhage-endosopic band ligation/clips/coagulation.

2. Shahein AR, Krasaelap A, Ng K, et al. Esophageal dilation in children: a state of the art review. J Pediatr Gastroenterol Nutr 2023;76(1):1–8. DOI: 10.1097/MPG.0000000000003614

In this review, the North American Society of Pediatric Gastroenterology, Hepatology and Nutrition Endoscopy and Procedures Committee has done a comprehensive literature review till February 2022 of novel techniques for evaluating and treating esophageal stenosis in children.

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Salient features are as follows:

- Strictures may be missed during endoscopy if the stricture diameter is larger than the scope diameter. Need to have knowledge of age-appropriate diameter of esophagus and high-index of suspicion, especially in children with complaints of dysphagia or eosinophilic esophagitis.
- Esophageal dilatation may be done empirically after tracheoesophageal fistula repair due to the high incidence of postoperative esophageal strictures.
- Intraprocedural carbon dioxide insufflation minimizes luminal distension and adverse events if perforation occurs.
- Endotracheal intubation is preferable to reduce the risk of aspiration.
- In complex strictures, wire-guided dilatation helps reduce the risk of perforation.
- If stricture allows, advancement of the balloon to the stomach under direct vision and pulling it retrograde across stricture is safer than pushing the dilator blindly through the stenosis. Balloon inflation time is variable (generally 1 minute).
  - Bougie cap has a value of visual and tactile sensation during dilatation. Efficacy data is not available.
  - The schedule of dilation sessions is dependent on the degree of dilatation's success and the child's symptoms. Typically, a repeat session is performed after 1 week, followed by 2–4 weeks. Refractory stricture is defined as an inability to achieve the age-appropriate esophageal lumen with five dilations performed within 5 months. An alternate definition is a requirement of ≥7 dilations, regardless of time, with an inability to maintain an age-appropriate esophageal lumen.
  - Dilation alone in an asymmetric stricture tends to tear the stricture at areas of thinner scar tissue and thus may lead to a less effective dilation. Endoscopic incisional therapy (EIT) targets stricture incision to the most scarred site. The current is generated by ERBE ICC 200 or ERBE VIO 300 D electrosurgical generator (ERBE, Tübingen, Germany) with settings of 100 W (effect two or three) or Endo Cut I (effect two, cut duration two, cut interval three), respectively. Modifications of the effect to control the depth of cutting can be made by the endoscopist. For those utilizing monopolar circuit output with blend current, the setting recommendation is duty cycle 50–75%, crest factor 2–5, and power setting 20–40 W. Adverse events include contained leaks (3%) and noncontained leaks (2.3%).
  - The EIT has a higher adverse event rate than balloon dilation; hence it should be performed by highly skilled endoscopists.
  - Timely diagnosis of iatrogenic perforation is critical as a delay of >24 hours can double mortality. Endoscopic therapeutic options should immediately be taken up. An endoscopic vacuum-assisted closure device (EVAC) can be used in case of fresh perforations or in perforations where significant soiling of the chest cavity has occurred. It uses negative pressure wound therapy.
  - Predictors of dilatation failure requiring stricture resection are long gap esophageal atresia, stricture length ≥10 mm, prior anastomotic leak, and requirement for ≥7 balloon dilatations.
  - Functional lumen imaging probe for dilatation (EsoFLIP)—the EsoFLIP (Medtronic) integrates the EndoFLIP impedance planimetry system into a balloon dilation catheter and allows real-time measurement of luminal diameter while doing dilation. The advantage is the ability to dilate over a larger range of diameters (6–30 mm) with one balloon while assessing esophageal dimensions before and after treatment without fluoroscopy.
  - EsoFLIP has been effective and safe in several pediatric cases with esophageal stenosis; however, at present, EsoFLIP is only approved for use in adult patients.
  - Endoscopic ultrasonography is the best modality to differentiate tracheobronchial remnants from other congenital esophageal strictures. A miniprobe is preferable to an echoendoscope in pediatric esophageal strictures as it can be introduced through the biopsy channel of the standard gastroscope and it provides high-resolution images with a limited depth of penetration.
  - Topical mitomycin C application—a systematic review that included 190 pediatric patients with caustic esophageal strictures concluded that topical mitomycin C application was safe and effective in the resolution of dysphagia and reducing the number of subsequent esophageal dilations. However, several studies failed to exhibit a benefit. There is a hypothetical risk of secondary malignancy. Two of six patients in a study developed *de novo* gastric metaplasia at the stricture on receiving topical mitomycin C. Mitomycin C dose ranges from 1 to 3 mL with a concentration of r, 0.1–1 mg/mL. The application is with a topical cotton swab technique. The endoscope is withdrawn, and a transparent cap is attached to the tip of an adult-sized gastroscope. A 2×2 cm mitomycin-soaked cotton pledget is held with biopsy forceps and pulled into the transparent cap before the endoscope is reintroduced to reach the stricture level. The pledget remains in contact for 30 seconds to a few minutes. As an alternative, a spray catheter may be used for the local application of a few drops of mitomycin C solution for younger children. No suction or irrigation of the area where the mitomycin has been applied should be done.
  - Mitomycin C injection is not recommended as it may cause deep esophageal ulcers.
  - Esophageal stents—most commonly, esophageal stents are self-expandable plastic stents or fully covered self-expandable metal stents (FCSEMSs). Due to size limits in children, the use of airway or biliary FCSEMSs is common rather than dedicated esophageal stents. Biodegradable stents are composed of polydioxanone and breakdown by hydrolysis with low inflammatory response. Evaluation for an aberrant right subclavian artery with CTA or echocardiogram is recommended prior to stent placement, especially in patients with a history of the tracheoesophageal fistula, to reduce the risk of associated complications. Dilation is not needed prior to stent deployment unless the stent cannot safely traverse the stenosis. A systematic review including 94 children with refractory esophageal strictures from various etiologies showed a pooled success rate of 40% with pooled adverse events of stent migration of 24%, mucosal hypertrophy of 28%, respiratory distress of 4%, and poor stent tolerance necessitating early removal of 4%. While the utility of stenting to treat strictures is still debatable, its main role currently appears to be in treating esophageal perforations or decreasing intervention while awaiting definitive therapy.