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Evaluation and management of lower gastrointestinal bleeding

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ABSTRACT

Lower gastrointestinal bleeding (LGIB) is a common cause of presentation to the emergency department and hospital admissions. The incidence of LGIB increases with age and the most common etiologies are diverticulosis, angiodysplasia, malignancy and anorectal diseases. Foremost modality for evaluation and treatment of LGIB is colonosopy. Other diagnostic tools such as nuclear scintigraphy, computed tomography, angiography and capsule endoscopy are also frequently used in the workup of LGIB. Choice of treatment modality depends on the hemodynamic status of the patient, rate of bleeding, expertise and available resources. We present a comprehensive review of the evaluation and management of LGIB.

Introduction

Lower gastrointestinal bleeding (LGIB) has been historically differentiated from upper gastrointestinal bleeding (UGIB) as any bleed originating distal to the ligament of Treitz. Clinical

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presentations can vary from minor hematochezia to massive hemorrhage with fatal outcomes. LGIB continues to be a common cause of morbidity and mortality in hospitalized patients, especially amongst the elderly.[1,2] Incidence of LGIB ranges from 20 to 30 per 100,000, surmounting to almost 30% of all episodes of gastrointestinal hemorrhage.[1–3] This incidence continues to rise and is postulated to be even higher than reported as a large proportion of patients do not seek medical attention.[3,4]

Endoscopy, radionuclide scintigraphy, and angiography are the mainstays for evaluation of LGIB. However numerous advancements have been made in recent times to improve diagnostic capabilities including capsule endoscopy, double-balloon enteroscopy, and computed tomographic angiography (CTA). On the other hand, endoscopic interventions, endovascular embolization, and surgery continue to be the cornerstone for treatment. Advancements in endoscopic techniques, interventional angiography and minimally invasive procedures have reduced the need for surgery.[5,6] The development of these modalities has also resulted in less healthcare expenditures as well as improved patient outcomes.[4,7,8]

Mortality rates for LGIB vary.[9] Patients requiring transfusion of greater than 5 units of packed cells or surgery or those with multiple co-morbid conditions or multi-organ system disease are at higher risk for increased morbidity and mortality. Age >60 years, hemodynamic instability, low hematocrit ($<35\%$) and elevated serum creatinine levels have been identified as risk factors for increased morbidity and mortality.[9] However, with aggressive supportive care 75–85% of LGIB will resolve without any complications.[6,10]

Pathophysiology

LGIB can occur due to a wide variety of causes. The most common causes of LGIB include diverticular bleeding, anorectal disorders including hemorrhoids, colorectal malignancies, inflammatory bowel disease, arteriovenous malformations, colitis (ischemic, radiation, and infectious) and iatrogenic (Table).[11]

Retrospective reviews of hospital admission data have consistently showed diverticulosis to be the most common cause of LGIB in adults, followed by anorectal disease, colitis, carcinoma and arteriovenous malformations.[12,13] Gayer et al. evaluated the etiologies of 1112 patients hospitalized with LGIB, and found diverticulosis (33.5%) as the most common cause hospitalizations due to LGIB, followed by hemorrhoids (22.5%), and malignancy (12.7%). They also determined that most common presenting symptom was hematochezia (55.5%) in contrast to melena which was the presenting symptom in only 11% of patients.[14] Studies done by Vernava et al. and Longstreth also yielded similar results.[15,16]

Other less common causes include post-polypectomy bleeding, nonsteroidal anti-inflammatory drug (NSAID) related ulcers, diversion colitis, history of radiation therapy, solitary rectal ulcer, stercoral ulcers, and genetic/iatrogenic bleeding diatheses.[11]

Table
Etiology of lower gastrointestinal bleeding.

Etiology	Frequency (%)
Diverticulosis	23.3
Others	18.9
Ischemic colitis	16.0
IBD	11.7
Hemorrhoids	10.4
Unknown	9.2
Colorectal cancer	7.4
AVMs	3.1

IBD: inflammatory bowel disease; AVMs; arteriovenous malformations.