

To Determine the Frequency of the Common Causes of Lower Gastrointestinal Bleeding after Colonoscopy

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ABSTRACT.

Introduction: Lower Gastrointestinal Bleeding (LGIB) is defined as bleeding from distal to the ligament of Treitz at the duodeno-jejunal flexure and it accounts for 30-40% of all gastrointestinal bleeding. Although it is less common than the upper gastrointestinal bleeding yet considered as medical and surgical emergency particularly when massive. The leading causes of LGIB are hemorrhoids, rectal ulcers, rectal polyps and colitis; while less frequent causes include ulcerative colitis, Crohn's disease and diverticulitis. This is apparently in contrast to the western literature where inflammatory bowel diseases and diverticulitis are the common cause of LGIB. Presently Colonoscopy is the diagnostic and therapeutic procedure of choice in LGIB.

Objective: To determine the frequency of the common causes of lower gastrointestinal bleeding (LGIB) after Colonoscopic examination in a tertiary care hospital of Lahore.

Methodology: This cross-sectional descriptive study was conducted at Department of Gastroenterology, Services institute of Medical Sciences Lahore (SIMS) from April 2016 to March 2017.

Results: A total of 277 patients were included in this study, 181(65.34%) were males and 96(34.65%) were females. The average age of the patients was 45.5 years. Colonoscopy showed abnormal findings in 219 (79.06%) patients. The internal hemorrhoids were the most common cause of LGIB while least common cause of LGIB after Colonoscopic examination was malignant lesions of colon and rectum.

Conclusion: In our study bleeding from internal hemorrhoids was the leading cause of lower gastrointestinal bleeding followed by rectal ulcers and polyps.

Keywords: Lower GI Bleeding, Hemorrhoids, Rectal Ulcer, Rectal polyps, Colonoscopy.

Introduction: Lower Gastrointestinal Bleeding (LGIB) is defined as bleeding distal to the ligament of Treitz at the duodeno-jejunal flexure¹. It is a common medical and surgical emergency and remains a major cause of morbidity and mortality. It is less common than upper GI bleeding, but if it is massive, it can be a serious clinical condition². LGIB accounts for 30-40% of all gastrointestinal bleeding and is less common than upper gastrointestinal bleeding (UGIB)³. It is estimated that UGIB accounts for 100-200 per 100,000 cases versus 20-27 per 100,000 cases for LGIB⁴. Approximately 85% of lower gastrointestinal bleeding involves the colon, in 10% of cases bleeding is in fact from upper gastrointestinal, while in 3-5% it is from small intestines⁵.

Factors associated with acute lower GI bleeding include advanced age and use of non-steroidal anti-inflammatory medication⁶. The mean age of patients with lower gastrointestinal bleeding ranges from 55-70 years with a reported mortality rate of 5-7% among patients admitted with lower GI bleeding as compared to 29.6% in patients who developed lower GI bleeding while hospitalized for some other reason. The incidence of lower gastrointestinal bleeding increases with a >200-fold increase from the age of 15-80 years. However, studies conducted in Pakistan have demonstrated that there were differences in frequencies of etiologies in our population compared to Western ones. In our country, a lot of work has been done on etiology and treatment of upper gastrointestinal bleeding, but lower tract remains deficient, a reason of deficient comparable statistics. In a study done in Pakistan the annual incidence of LGIB was estimated to be 20% and mortality was

11%⁷. Furthermore, the leading causes of LGIB is Hemorrhoids, rectal ulcers, rectal polyps, colitis ulcerative colitis, these are the common causes. While infrequent causes are Crohn's disease, diverticulitis, indicate that these are uncommon in this region. In Western studies shows that the causes of LGIB is different from our studies⁷.

Colonoscopy is the diagnostic and therapeutic procedure of choice in LGIB⁸. It has a very high diagnostic yield. Colonoscopy is a very useful modality for diagnosis in most patients with severe acute LGIB requiring hospitalization. Furthermore, it is now being used more effectively for hemostasis resulting in less operative intervention to control bleeding⁹.

Therefore, the aim of this study was to determine the frequency of the common causes of Lower Gastrointestinal Bleeding (LGIB) by Colonoscopic examination at tertiary care hospital in Lahore.

Methodology: This was a Cross-sectional Descriptive Study carried out at the Department of Gastroenterology, Services institute of Medical Sciences Lahore (SIMS), from April 2016 to March 2017 including 277 patients selected according to following inclusion and exclusion criteria;

Inclusion criteria:

1. Male and female patients with age 15-70 years.
2. Patients presenting with active rectal bleeding as their main complaint, and the duration of bleeding not more than 6 months.

Exclusion criteria:

1. Patient below the age of 15 years.
2. Bleeding secondary to trauma.

3. Suspected upper gastrointestinal source of bleeding, i.e., history of hematemesis/ melena or gastric aspirates containing coffee-ground material or bright red blood.

5. Known case of infectious bloody diarrhea, inflammatory bowel disease, internal hemorrhoids and GI malignancy.

6. Known case of advanced cardiac, renal and liver disease.

Patients presented to medical emergency department or admitted in ward via out patients' department were included in this study after fulfilling inclusion/exclusion criteria. All patients were examined by a gastroenterologist. After discussing risks and benefits of colonoscopy with the patients and relatives, informed part of data was collected from the register of the endoscopy suite. Colonoscopy was performed by a resident or by a consultant. Bowel preparation (poor/adequate) was observed by the endoscopist. Colonoscopy findings were documented by the resident/consultant after the procedure. All relevant data was collected on a proforma.

Results: A total of 277 patients who presented with lower gastrointestinal bleeding were included in the study. Age ranged from 15 years to 70 years with the mean age of 45.5 years. Out of 277 patients, there were 181(65.34%) males and 96(34.65%) females, with male to female ratio of 2:1. Intermittent bleeding was the most common presenting complaint (67.8%); continuous bleeding was seen in 21.5% and spontaneous bleeding was present in 10.7% of patients.

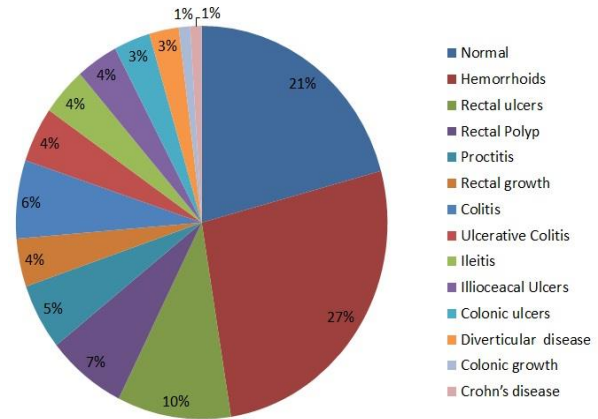
Table 1. Causes of lower gastrointestinal bleeding (n- 277)

Causes.	Number of Patients.	Percentage
Normal	58	20.93%
Rectal Causes. n= 145 (52.34%)		
Hemorrhoids	74	26.71%
Rectal ulcers	26	9.38%
Rectal Polyp	19	6.85%
Proctitis	15	5.41%
Rectal growth	11	3.97%
Colonic Causes. n=74 (26.71%)		
Colitis	18	6.49%
Ulcerative Colitis	13	4.69%
Ileitis	11	3.97%
Ileocecal Ulcers	10	3.61%
Colonic ulcers	9	3.24%
Diverticular disease	7	2.52%
Colonic growth	3	1.08%
Crohn's disease	3	1.08%

On Colonoscopic examination the cause of bleeding related to rectal causes were found in 145 (52.34%) patients. Internal hemorrhoids were seen in 74(26.71%) patients, rectal ulcers were present in 26(9.38%) patients, rectal polyp in 19(6.85%), Proctitis in 15(5.41%) and rectal growth in 11(3.97%) patients. Bleeding related to colonic causes were noted in 74(26.71%) patients, among whom colitis was

present in 18(6.49%) patients, ulcerative colitis in 13(4.69%) patients, ileitis in 11(3.97%),Ileocecal ulcers in 10(3.61%) patients, colonic ulcers in 9(3.24%) patients, diverticular disease in 7(2.52%), colonic growth in 3(1.08%) patients, and Crohn's disease in 3(1.08%) patient. (Table and Chart 1 show the causes of LGIB).

Chart No. 1 CAUSES OF LGB (N- 277)



Discussion:

Lower gastrointestinal bleeding is a common medical emergency and remains a major cause of morbidity and mortality. Though less common than upper GI bleed, yet frequently encountered problem in general medical practice, especially in tertiary care hospital. This clinically significant condition has important implications for health care costs worldwide. Lower GI bleeding (LGIB) may be due to self-limiting local anorectal conditions; on the other hand, it may be the only sign of colorectal neoplasia. The management of LGIB is challenging because of the diverse range of bleeding sources, the large extent of bowel involved, the intermittent nature of bleeding, and the various complicated and often invasive investigative modalities. Colonoscopy is the first choice of investigation nowadays; questions about its timing and the need for bowel preparation remain unanswered. While some authors advocate early colonoscopy in an unprepared bowel, others advise a more expectant approach. Advances in endoscopic technology have brought colonoscopy to the forefront of the management of LGIB.

In our study the diagnostic yield of colonoscopy was 79.1p%. Similar results were found in other studies; Chaudhry V et al¹⁰, reported 95% yield in cases of LGIB while Jensen et al¹¹ documented 74% yield of colonoscopy. In our study, out of 277 patients, 181(65.34%) were male and 96 (34.65%) were female with a male to female ratio of 2: 1. Male predominance in the studies of LGIB was also observed in other studies. Saira S et al¹² reported male to female ratio 2: 1 and in another study Zia N et al⁷ also found male predominance. In our study the mean age of patients was 45.5 years; this is almost identical to the study by Zia N et al⁷ who documented mean age

of 41.04 years in patients presenting with LGIB. Patients presenting with LGIB in our country were younger than the patients reported from the Western countries where LGIB is thought to be more common in elderly people as supported by study of Longstreth GF et al¹³ who reported mean age above 60 years. The exact reason of this age difference between our population and the Western population is unknown but it could be due to difference in life span which is higher in Western countries as compared to our population, lifestyle differences between these two parts of the world may account for as well. We found internal hemorrhoids as the most common cause (26.71%) of lower gastrointestinal bleeding. This finding is contrast to international published literature where diverticulosis is reported as the commonest cause of LGIB. Longstreth GF et al¹³ in a series of 219 patients has reported diverticulosis (41.6%) as the most common cause of LGIB. Almost identical figures are reported by other researchers^{10,14}. In our study diverticulosis was the cause of bleeding in only 2.52% of the patients. Diverticulosis is common in western population; this may be due to low fiber in the western diet which leads to chronic constipation and ultimately formation of diverticula. In our study rectal ulcers were the second commonest cause of LGIB, identified in 26(9.38%) patients and colonic ulcers in 9(3.24%) patients. Lin CC et al¹⁵ found rectal ulcers in 16.4% patients as cause of LGIB. In a national study, Zia N et al⁷ reported that 4.5% of LGIB was due to rectal ulcers. This high incidence of rectal ulcers in Western populations is thought to be due to chronic constipation. In our study polyps were noted in 19 (6.85%) patients. A study by Zia N et al⁷ found colonic polyps in 2.5% of their study patients whereas in an international study by Forsberg AM et al¹⁶ found colonic polyps in 27% of their study population. This increased prevalence of colonic polyps may also account for higher incidence of colorectal carcinoma and also better awareness of population for screening colonoscopy. In this study colitis was noted in 18(6.49%) patients, among whom ulcerative colitis was found in 4.96% of patients, Non-specific colitis in 6.49% and Crohn's disease in 1.08% of patients. Saira S et al¹² found nonspecific colitis in up to 46% of patients and ulcerative colitis in 16% of patients. An international study by Molodecky NA et al¹⁷ reported highest incidence of ulcerative colitis up to 24.3 per 100,000 and Crohn's disease up to 12.7 per 100,000 persons per years in Europe. The annual incidence of UC and CD in North America is reported as 19.2 per 100,000-person years and 20.2 per 100,000 person-years respectively. Colonic and rectal growth was noted in 3 (1.08%) & 11 (3.97%) respectively. One patient with rectal growth was diagnosed as gastrointestinal tumor (GIST) and rest of the growths were reported as adenocarcinoma of colon or rectum. The incidence of colorectal cancers in the United States is reported to be 3.6 to 4% in white and blacks respectively¹⁸. The

average annual crude incidence of colorectal cancer (CRC) in Pakistan has been reported to be 3.6% in males and 3.1% in females by Bhurgri Yet al¹⁹. The lower incidence of colorectal cancer in our population may be due to consumption of high fiber diet and low use of carcinogenic diet. During current study terminal ileum was successfully intubated in 89.6% cases. Internationally, this rate is reported to be 87.1% by Jeong SH et al²⁰. In our study ileitis and ileocecal ulcers were noted in 21(58%) patients and histopathological analysis showed mild chronic non-specific inflammation in all patients. During this study successful intubation of terminal ileum during colonoscopy identified significant pathology in 7.58% of patients. As its diagnostic yield is very low therefore the decision to perform or not to perform ileoscopy during colonoscopy should be made on a case-by-case basis. A study by Kennedy G et al²¹ concluded that intubation of the terminal ileum should not be a part of routine screening colonoscopy. In our study the exact cause of lower gastrointestinal bleeding remained unidentified in 20.9% of patients even after visualizing the whole colon and terminal ileum. Clinical evidence of obscure gastrointestinal hemorrhage ranges from 5-20% in different studies²². A lesion higher up in the small intestine or stomach may cause it, and other specialized techniques should be employed for a definite diagnosis.

Lower gastrointestinal bleed is associated with significant morbidity and mortality and colonoscopy has a very high diagnostic yield and should be considered the investigation of choice in patients presenting with bleeding per rectum. It is a safe procedure in experienced hands. Common colorectal pathologies prevalent in our population include internal hemorrhoids, rectal ulcers and polyps, nonspecific colitis and ulcerative colitis, while colorectal growth, diverticulosis, Crohn's disease and angiodysplasia are found less frequently.

Conclusion: We concluded that colonoscopy has a very high yield in cases of LGIB. The LGIB is more prevalent among younger population in our part of the world. Internal hemorrhoids are the most common cause while inflammatory bowel diseases and diverticulitis are least common cause in our part of the world.

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