



Etiological Profile of Patients with Lower Gastrointestinal Bleed Undergoing Colonoscopy in a Tertiary Care Center

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Abstract

Introduction: Lower gastrointestinal (GI) bleed is defined as the blood loss from gastrointestinal tract distal to the ligament of Treitz. Studies reporting etiology of lower GI bleed is limited from India, more so from northern India. **Purpose:** This study was conducted with the aim to look at the causes of lower GI bleed found during colonoscopy, in a tertiary care centre (located in rural area) of Northern India. **Material and Methods:** In this hospital-based study, 120 patients (age more than 18 years) who underwent colonoscopy for evaluation of overt lower GI bleed between September 2019 to April 2020, were included. **Results:** The overall mean age of the study group was 41.46 ± 15.53 years. Male to female ratio was 1.6:1. The most common cause of bleeding per rectum was found to be ulcerative colitis (40%) and it was followed by the second most common cause – hemorrhoids (30.83%). Malignancy of the colon was found in 8.33%. Results were analyzed separately for the patients above ≥ 60 years (N=8) of age. It was observed that colon cancer (37.5%) was the commonest cause of lower GI bleed in this age group. **Conclusion:** In this study, the commonest cause of lower gastrointestinal bleed varied as per the age and gender i.e. while ulcerative colitis was the commonest cause overall and among females but hemorrhoids and colonic malignancy were the predominant cause among males and elderly (≥ 60 years) age group respectively.

Key Words

Lower Gastrointestinal Bleed, Colonoscopy, Haemorrhoids, Ulcerative Colitis

Introduction

Lower gastrointestinal (GI) bleed is defined as the blood loss from gastrointestinal tract distal to the ligament of Treitz (1). In the Western world, diverticular bleed is a common cause of lower GI bleed (1). However, the scenario in India is different. As such the prevalence of colonic diverticulosis in India is less when compared to the western world (2). Diet and lifestyle factors play an important role in the pathogenesis of diverticulosis (3).

The severity of lower GI bleed may vary from mild

intermittent bleed to life threatening massive bleeding. The causes of lower GI bleed, varies according to the age group. As per the few reports, young patients commonly have hemorrhoids as the cause of lower GI bleed while elderly patients have malignancy and diverticular bleed (1). Also, the etiology of lower GI bleed varies as per the age and the commonest cause of lower GI bleed is different in pediatric age group, adults and

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elderly population (1,4).

Colonoscopy is a useful investigation for evaluation of lower GI bleed. It is an invasive procedure with few serious complications like perforation. Few studies have reported that early colonoscopy may result in increased detection of the definitive sources of bleeding and shorter length of stay (5). It is known that up to 80 percent of lower GI bleed will stop spontaneously (6). However, knowing the patient's etiology is important for prognosis purpose and to rule out the possibility of rebleed and for therapeutic management if needed.

Studies reporting etiology of lower GI bleed is limited from India, more so from northern India. Furthermore, there are no studies depicting etiology of lower GI bleed from rural India. This study was conducted with the aim to look at the causes of lower GI bleed found during colonoscopy in a tertiary care centre (located in rural area) of Northern India.

Material and Methods

This hospital-based study was conducted in the Department of Gastroenterology of a tertiary care center in rural area of the northern India. All patients (age more than 18 years) who underwent colonoscopy for evaluation of overt lower GI bleed between September 2019 to April 2020, were included in the study. Patients with a known history of bowel disease, past history of lower GI bleed and / or those with normal colonoscopy but source found in upper GI endoscopy were not included in this study.

A total of 120 patients were included in this study. Symptoms of the patients, examination findings, investigations and colonoscopy findings were collected from the data records. Patients in whom colonoscopy could not be performed completely due to inadequate preparation or any other reason were also not included in this study. Ethical clearance was obtained from the institutional ethical committee for this study.

Results for continuous variables were expressed as mean and standard deviation. Variables with non-normal distribution were described by a median. Categorical variables were expressed as number and percentage.

Results

The overall mean age of the study group was 41.46 ± 15.53 years. Male to female ratio was 1.6:1. The most common cause of bleeding per rectum was found to be ulcerative colitis (40%) and it was followed by the second most common cause – hemorrhoids (30.83%). Malignancy of the colon was found in 8.33% (Table 1).

Other less common cause of bleeding per rectum included coexisting hemorrhoids with proctitis, infective colitis and Solitary Rectal Ulcer Syndrome (SRUS) etc. 4.16 % patients had evidence of both hemorrhoids and proctitis. In six patients, colonoscopy did not reveal any source of bleed. The median value of hemoglobin was 9.4 g/dl (range 4-13.3 g/dl).

Among patients with ulcerative colitis (Figure 1), 54.16% had left limited colitis, 29.16% had pancolitis and 16.68% had proctitis. Also, 41.66 % presented with severe ulcerative colitis while remaining 58.34% had mild to moderate disease (as per mayo endoscopic score). Of all the patients with bleeding per rectum, 63.33 % patients complained of frank bleeding per rectum (hematochezia) while the rest 36.67% had maroon color blood or malena.

Results were analyzed separately for the patients above ≥ 60 years (N=8) of age. The mean age of this group was 67.25 ± 6.36 years and male to female ratio was 1:1. It was observed that colon cancer (37.5%) was the commonest cause of lower GI bleed in this age group. It was closely followed by hemorrhoids and ulcerative colitis (Table 2).

Table 1: Causes of Lower GI Bleed Among Patients (n=120)

Causes of Lower GI Bleed	No (%)
Ulcerative Colitis	48 (40)
Haemorrhoids	37 (30.83)
Colonic Cancer	10 (8.33)
Proctitis and Haemorrhoids Coexisting	5 (4.16)
Infective Colitis	3 (2.5)
Solitary Rectal Ulcer Syndrome	2 (1.66)
Crohn's Colitis	3 (2.5)
Fecoliths with Stercoral Ulcers	2 (1.66)
Pouchitis	1 (0.83)
Rectal Polyp	1 (0.83)
Diverticular Bleed	1 (0.83)
Rectal Varices	1 (0.83)
Source not Identified in Colon	6 (5)
Total	120 (100)

Table 2: Causes of Lower GI Bleed Among Patients ≥ 60 Yrs. of Age (n=8)

Causes of Lower GI Bleed	No (%)
Colonic Cancer	3 (37.5)
Haemorrhoids	2 (25)
Ulcerative Colitis	2 (25)
Source not Identified in Colon	1 (12.5)
Total	8 (100)

In male group (N=75), the commonest cause of lower GI bleed was hemorrhoids (38.66%), followed by ulcerative colitis (32%). SRUS, rectal polyp, pouchitis, diverticular bleed and pouchitis were among the least common causes, each constituting 1.3% each. The female group (n=45) followed the trend seen in the overall study group with ulcerative colitis (53.33%) as the commonest cause. SRUS, Infective colitis, Crohn's disease (Figure 2) and coexisting hemorrhoids with proctitis constituted least, each contributing 2.2 % respectively.



Figure 1: Colonoscopic View of Ulcerative Colitis - Showing Diffuse Circumferential Erythema, Erosions and Superficial Ulcerations



Figure 2: Colonoscopic View of Crohn's Colitis - Showing Multiple Deep Ulcers with Normal Intervening Mucosa

Discussion

Lower GI Bleed is frequently seen in clinical practice by the gastroenterologists. In a study by Hajare *et al.* (7), the mean age of the patients was 43.82 ± 17.96 years. In this study, males constituted 62% of the total population.

The mean age of the study population and male dominance is in accordance with our results. In a study from Kashmir, the mean age of patients was 40.8 years and males constituted 59% of the total population (8).

In the Study by Hajare *et al.* (7), hemorrhoids constituted 48% of all the causes of lower GI bleed. It was followed by ulcerative colitis (24%) and carcinoma of colon (10%). Another study from Saudi Arabia, by Alruzug *et al.* (9), concluded that hemorrhoids (38.5%), diverticulosis (12.1%) and malignant neoplasm (9.9%) were the most common colonoscopy finding of lower GI bleeding. The colonoscopy finding of lower GI bleed in our study differed from above cited studies, as ulcerative colitis (40%) was found to be the commonest cause in our study, followed by hemorrhoids (30.83%) and carcinoma of colon (8.33%). This pattern of ulcerative colitis being the commonest finding was also seen among female group. However, among the male only group, it was seen that hemorrhoids were the commonest finding during colonoscopy. In six patients, colonoscopy did not reveal any source of bleed. Probably, either had some minor source of bleed or the source was in small bowel.

In a study by Goenka *et al.* (10), the major causes of lower GI bleed included idiopathic ulcerative colitis (19.3%), acute colitis (12%) and colonic polyps (10.2%). In another study by Zia *et al.* (11), the commonest diagnosis was ulcerative colitis, found in 46% patients followed by colorectal carcinoma (10%) and nonspecific colitis (8%). However, in this study, hemorrhoidal bleed and acute infectious diarrhea were excluded from the study. Both of the studies have commonest cause as ulcerative colitis which well coincides with our findings. In a study from Spain, the more frequent endoscopic findings included polyps (25.1%) and diverticular bleed (24%). This finding is drastically different from our experience. They also concluded that clinical data are of little value in predicting a normal examination. Further they concluded that colonoscopy should be the first procedure of choice in all patients with lower GI bleed, irrespective of presence of anal pathology (12).

In one recent study, major causes of lower GI bleed included hemorrhoids and inflammatory bowel disease (Ulcerative colitis and Crohn's disease). In the same study, carcinoma colon was the commonest cause among elderly (age >60 years) (13). In a study by Bansal *et al.* (14), the most common etiology of Lower GI bleed seen was hemorrhoids (35.3%), followed by inflammatory bowel disease, malignancy and radiation proctosigmoiditis. The



high percentage of radiation proctitis has been attributed by the authors to the high prevalence of carcinoma cervix and their referral to the radiotherapy center in author's hospital.

Jehangiri *et al.* (15) emphasized that hemorrhoids have shown to coexist with other pathologies of rectal bleeding including malignancy. Hence, focusing on the importance of sigmoidoscopy in patients who present with simple condition like haemorrhoids. In our study, 4.16 % patients had evidence of both hemorrhoids and proctitis coexisting in patients. This group is important because evaluating them with proctoscopy and diagnosing them with hemorrhoids would have missed the evidence of colitis. Author advocate that colonoscopy should always be done in patients with evaluation for bleeding per rectum even if proctoscopy reveals hemorrhoids. Evidence of colitis/proctitis can be missed with proctoscopy on several occasions.

Pouchitis was seen in only one patient in this study. Author believe that frequency of pouchitis being seen in gastroenterology clinics depend upon two main factors. First being the prevalence of ulcerative colitis in the region and second being the performance of colectomy with pouch surgery in Gastrosurgery Department in the hospital. Prevalence of diverticular bleed is also low in the region, likely due to regional difference as diverticulosis is low in our region. Infectious colitis has also decreased, could be attributed to better hygiene, safe hand practices and cleanliness.

In one study of causes of lower GI bleed in geriatric patients, mean age among patient was 67.5 years and carcinoma was the most common cause for per rectal bleed. Ulcerative colitis constituted 17.7% while diverticulosis was found in 4.4% cases (16). In a study by Dar *et al.* (8) on lower GI bleed, elderly population constituted 40% of the study population. Growth/ polyp (29.3 %) was found to be the most common finding on colonoscopic examination followed by Inflammatory bowel disease (17.7%) and hemorrhoids 5.3% respectively. In this study, around 3.7 % of patients remained undiagnosed despite various investigations used to look at the cause. Carcinoma was found to be the commonest finding among elderly patients (≥ 60 years) in our study too but elderly patients constituted only 6.6.% of the total population. A systematic analysis of Chinese literature concluded that colorectal cancer (24.4%), colorectal polyps (24.1%), colitis (16.8%) and anorectal disease (9.8%) are the four most common causes of

lower GI bleed among Chinese population (17). They also concluded that diverticulum is uncommon in china.

Author suggests that a prospective longer duration study with larger study subject should be done to confirm these findings. Also, in this study no differentiation was done between etiology of acute and chronic / intermittent lower GI bleed. Ulcerative Colitis was once considered as the disease of west. Nonetheless, this study clearly depicts the predominance of ulcerative colitis in our region. This study bears an important place as it was conducted in a tertiary care center located in rural India.

Conclusion

In this study, the commonest cause of lower gastrointestinal bleed varied as per the age and gender i.e. while ulcerative colitis was the commonest cause overall and among females but hemorrhoids and colonic malignancy were the predominant cause among males and elderly (≥ 60 years) age group. Also, coexisting hemorrhoids and proctitis diagnosed on colonoscopy further emphasis on use of colonoscopy among all patients with lower GI bleed.

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Conflicts of Interest

There are no conflicts of interest.

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