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**Original Research Article**

# Etiological profile of patients presenting with lower gastrointestinal bleeding at tertiary care hospital at Belagavi: a cross sectional study

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## ABSTRACT

**Background:** Lower gastrointestinal bleeding (LGIB) is bleeding arising below the ligament of Treitz. Hemorrhage from the lower gastrointestinal (GI) tract accounts for about 20% of all cases of acute GI bleeding. Lower GI bleeding is that which occurs from the colon, rectum, or anus, and presenting as either hematochezia (bright red blood or red wine color stools) or malena, blood streaking of the stool. The objective of this study was to evaluate the etiological profile of patients presenting with lower gastrointestinal bleeding.
**Methods:** This one-year cross-sectional study was conducted in the Department of Medicine, KLES Dr. Prabhakar Kore Hospital and Medical Research Centre, Belagavi from January 2015 to December 2015. The study design was a cross-sectional study. This study was carried out from January 2015 to December 2015. Patients with lower gastro-intestinal bleeding presenting at Department of Medicine and Department of Gastro-enterology, KLES Dr. Prabhakar Kore Hospital and Medical Research Centre, Belagavi were studied.
**Results:** In the present study majority of the patients were males with the mean age was 43.82±17.96 years and majority of the patients were married with moderate built and nourishment. As per the occupation majority were housewives followed by students. In the present study diabetes mellitus was the most common medical history reported. Internal haemorrhoids was significantly associated with male sex, student's profession followed by housewife with mixed diet consumption, the clinical presentations significantly associated with internal haemorrhoids were haematochezia, loss of appetite, tenesmus, passage of mucus in stools, constipation, abdominal pain and vomiting.
**Conclusions:** Internal hemorrhoids is the most common cause followed by ulcerative colitis. Though not common, carcinoma colon, solitary rectal ulcer syndrome, polyp, colonic diverticulosis, ischaemic colitis, non-specific proctitis, and radiation proctitis are the other causes of LGIB.

**Keywords:** Hematochezia, Internal haemorrhoids, Lower gastro intestinal bleeding, LGI scopy

## INTRODUCTION

Lower gastrointestinal bleeding (LGIB) is bleeding arising below the ligament of Treitz.[1] Hemorrhage from the lower gastrointestinal (GI) tract accounts for about 20% of all cases of acute GI bleeding.[2-5] Lower GI bleeding is that which occurs from the colon, rectum, or anus, and presenting as either hematochezia (bright red blood or red wine color stools) or malena, blood streaking of the stool.

The lower gastrointestinal bleeding (LGIB) is has an annual incidence of hospitalization of approximately 36/100,000 population. The rate of hospitalization is even

higher in the elderly.[6,7] Patients usually present with painless hematochezia and a decrease in hematocrit value, but without orthostasis.[7]

The incidence of LGIB ranges from 20.5 to 27 cases/100,000 adults. In comparison with the west, in India, patients are younger, localization is possible in a majority of patients, mortality is lower and re-bleed rate is 4%.[8] Compared with acute upper GI (UGI) bleeding, patients with acute LGIB are significantly less likely to experience shock (35% versus 19%, respectively), require fewer blood transfusions (64% versus 36%) and have a significantly higher hemoglobin level (61% versus 84%).[9] Colonic bleeding necessitates fewer blood transfusions compared with bleeding from the small intestine. The overall mortality rate ranges from 2% to 4%.[5]

The etiology and the epidemiology of LGIB varies according to the environmental conditions depending upon the life style, dietary habits, the prevalence of smoking, history of drug intake, age, longevity of the population, etc. Most of the data from the west suggests that colonic diverticula are the most frequent source of LGIB followed by angiodysplasias (angiectasias), colitis [ischemic, infectious, chronic inflammatory bowel disease (IBD)], neoplasms, small bowel bleeding and post-polypectomy bleeding. However, in the India, the etiology differs significantly.[5,10] Colonoscopy is the most convenient and effective preliminary investigation. Actual visualization during the acute episode is uncommon because the view is poor. While some authors advocate early colonoscopy in an unprepared bowel, others advise a more expectant approach.[5,11]

Clinical factors predictive of severe colonic bleeding include aspirin use, at least two co-morbid illnesses, pulse greater than 100/minute, and systolic blood pressure <115 mmHg.[14] The overall mortality rate from colonic bleeding is 2.4-3.9 %.6,15 Independent predictors of in hospital mortality are age over 70 years, intestinal ischemia, and two or more comorbidities.[12]

However, the data regarding etiology of LGIB remains unexplored as is scarce in the Indian subcontinent as most of the studies of LGIB have been reported in Western populations and there has been limited number of reports of etiological profile of LGIB from Indian population till date. Hence this study was undertaken to evaluate the etiological profile of patients presenting with lower gastrointestinal bleeding.

The objective of this study was to evaluate the etiological profile of patients presenting with lower gastrointestinal bleeding.

## METHODS

This one-year cross-sectional study was conducted in the Department of Medicine, KLES Dr. Prabhakar Kore Hospital and Medical Research Centre, Belagavi from January 2015 to December 2015. The study design was a cross-sectional study. Patients with lower gastro-intestinal bleeding presenting at Department of Medicine and Department of Gastro-enterology, KLES Dr. Prabhakar Kore Hospital and Medical Research Centre, Belagavi were studied.

A total of 50 patients with Lower gastro-intestinal bleeding were included in the study. As the data regarding the prevalence of lower gastrointestinal bleeding is not available previously, the sample size was determined considering 80% of the average three-year hospital statistics on patients presenting with lower GI bleed. Hence the sample size of 50 was considered. Patients presenting with lower gastrointestinal bleeding and Patients aged 18 years and above were included in the study. Patients unfit for lower Gastrointestinal video endoscopy were excluded from the study.

Prior to the commencement the study was approved by the Ethical and Research Committee of Jawaharlal Nehru Medical College, Belagavi.

After taking informed consent patients were interviewed and demographic data, history of present illness, other co-morbid conditions, personal history and diet pattern were obtained. Further these patients underwent clinical examination. The findings were noted on a predesigned and pretested proforma. Patients were subjected to lower gastrointestinal video endoscopy. Endoscopy was performed in all patients within 24 h of admission depending upon the urgency of the condition by using an Olympus forward viewing flexible video endoscope. Endoscopy was performed by placing the patients in a left lateral position by standard technique.

### *Statistical analysis*

The data obtained was coded and entered into the Microsoft Excel Spreadsheet). The categorical data was expressed in terms of rates, ratios and percentages and continuous data was expressed as mean ± standard deviation.

## RESULTS

In the present study majority of the patients were males (62%). The male to female ratio was 63:1. 34% of the patients presented with age between 18 to 30 years. The mean age was 43.82±17.96 years and majority of the patients were married (82%) 98% were moderately built and moderately nourished. As per the occupation majority were housewives (32%) while 22% of the patients were students. In the present study diabetes mellitus was the most common medical history reported by 12% of the patients. In this study, the most common clinical symptom was bleeding per rectum (40%) followed by constipation (76%), loss of weight (56%), blood mixed with stools (50%).

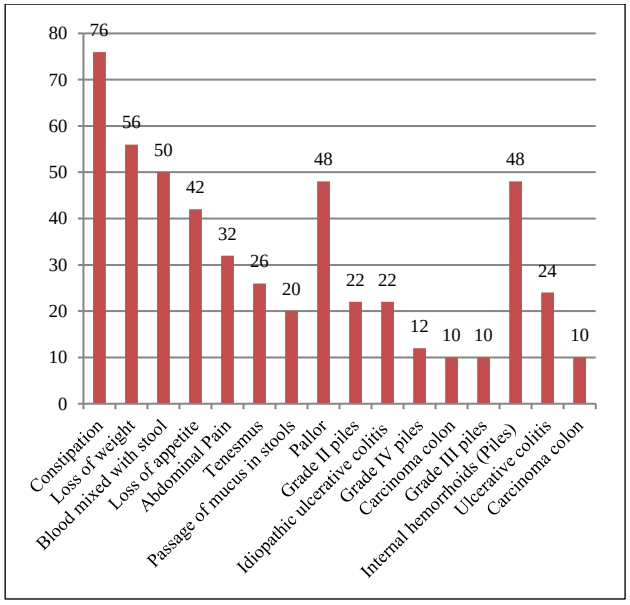


**Figure 1: Manifestation of clinical symptoms among patients with lower gastro intestinal bleeding.**

In the present study, personal history of smoking was noted in 20% of the patients and alcohol consumption in 18% of the patients. In the present study 90% of the patients reported history of mixed diet and none of the patients reported family history. In this study on examination, the most common clinical sign was pallor noted among 48% of the patients.

In the present study, the LGIscopy revealed internal haemorroids (Grade 1, 2, 3 and 4 piles) in 48% of the patients followed by ulcerative colitis in 24% of the patients. In the present study, the most common diagnosis was internal hemorrhoids (Piles) noted (48%) followed by ulcerarative colitis (10%) (Figure 1).

The present study shows a positive association of internal haemorrhoids with Male sex (P=0.05), Students (p=0.000) with mixed diet (0.017), the clinical presentations significantly associated with internal haemorrhoids are haematochezia, loss of appetite, tenesmus, passage of mucus in stools, constipation, abdominal pain and vomiting (Table 1).

**Table 1: Association of internal haemorrhoids with socio demographic and etiological factors.**

| Variables | Number | Percentage | Chi square | DF | P value |
|---|---|---|---|---|---|
| **Sex** | | | | | |
| Male | 11 | 46 | 77.093[a] | 48 | 0.005 |
| Female | 6 | 25 | | | |
| **Age** | | | | | |
| 18 to 30 | 4 | 17 | 505.192[a] | 464 | 0.091 |
| 31 to 40 | 2 | 8 | | | |
| 41 to 50 | 3 | 13 | | | |
| >50 years | 15 | 63 | | | |
| **Clinical presentations** | | | | | |
| Haematochezia (bleeding per rectum) | 17 | 71 | 109.556[a] | 48 | 0.000 |
| Loss of appetite | 10 | 42 | 80.237[a] | 48 | 0.002 |
| Nausea | 17 | 71 | 63.392[a] | 48 | 0.067 |
| Tenesmus | 16 | 67 | 92.406[a] | 48 | 0.000 |
| Passage of mucus in stools | 17 | 71 | 104.722[a] | 48 | 0.000 |
| Constipation | 16 | 67 | 95.882[a] | 48 | 0.000 |
| Abdominal Pain | 17 | 71 | 101.340[a] | 48 | 0.000 |
| Vomiting | 17 | 71 | 58.000[a] | 32 | 0.003 |
| **Occupation** | | | | | |
| House wife | 8 | 33 | 265.307[a] | 160 | 0.000 |
| Student | 11 | 46 | | | |
| Business | 4 | 17 | | | |
| Others | 2 | 8 | | | |
| **Diet** | | | | | |
| Mixed | 15 | 63 | 71.160[a] | 48 | 0.017 |
| Married | 16 | 67 | 86.149[a] | 48 | 0.001 |

## DISCUSSION

Lower gastrointestinal bleeding (LGIB) is a common clinical condition associated with significant morbidity and mortality.[13-15] The spectrum of severity ranges from mild per rectal bleeding to life-threatening, massive hemorrhage. The incidence of hospitalization due to LGIB is 20-30/100,000/year in the United States.[16]

Similarly the incidence of acute LGIB was 33/100,000 in Spain in 2005.[17] Diverticulosis was responsible for approximately 15 to 55 percent of LGIB in the most series which were conducted in western population.[16,18] A study conducted by Sakthivel S et al, reported that incidence of Diverticulosis in India is about 4.2%. However, hemorrhoids were the most common cause of rectal bleeding in patients under the age of 50 years in another study.[19]

Most of the studies have shown that, LGIB affects Men more commonly than women. Same was true in this study. In a study conducted by Shrestha UK et al, who reported male preponderance with 62.2% of the males and 37.8% of the females in a sample size of 415 patients.[13] In a study by Dar IA et al, LGIB was more commonly seen in men as compared to women (59% versus 41%).[5] Which was also consistent with the findings of this study. In a study conducted by Alruzug IM et al, from Saudi Arabia showed predominantly a higher percentage of males with male to female ratio 1.5:1.[20] In the present study LGIB was more prevalent among males as 62% of the patients were males and male to female ratio was 1.63:1. The male predominance observed in the present study and other studies can be explained by the fact that males often suffer from chronic constipation due to low fibre diet, low intake of liquids especially water and fruit juices and ignorance of fresh vegetable usage, intake of tobacco and other abuses increase transit time in colon and retain faecal wastages, thereby enhancing risk of LGIB.[20]

In this study, the commonest clinical symptom was hematochezia (Bleeding per rectum) (80%) followed by constipation (76%), loss of weight (56%) and blood mixed with stools (50%). In a study conducted by Dar IA et al, from Jammu and Kashmir reported that most common mode of presentation of LGIB as hematochezia seen in 63.3% patients followed by bloody diarrhea (17%), anorectal bleed (12.33%), and malena (7%).[5] However, in the present study none of the patient presented with malena.

The cause of LGIB vary from one region of world to another. In a study conducted by Shreshta KU et al, from Jammu and Kashmir, India, reported the different etiologies of LGIB as hemorrhoids 35.2%, non-specific colitis 24.8%, colon polyp 18.3%, inflammatory bowel disease (IBD) 10.4%, colon cancer 6.5%, diverticulosis 1.7%, unknown 1.4%, upper gastrointestinal bleeding 1.2% and radiation colitis 0.5%. In a study by Dar IA et al, the most common cause of LGIB was colorectal polyps, which constituted 23.3% while as 17.7% cases could be attributed to IBD.[5] In one study conducted in Spain, it was shown that the most common etiology of LGIB was internal hemorrhoid, which was found in 35.0% cases.[21] In another study done in Singapore, the most common etiology of LGIB was hemorrhoid.[22] Similarly, a study conducted in Jordan with 701 patients also found that the most common cause for LGIB was hemorrhoids.[23]

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## REFERENCES

1. Zuccaro G. Management of the adult patient with acute lower gastrointestinal bleeding. American college of gastroenterology. Practice parameters committee. Am J Gastroenterol. 1998;93:1202-8.
2. Jensen DM, Machicado GA. Diagnosis and treatment of severe hematochezia. The role of urgent colonoscopy after purge. Gastroenterol. 1988;95:1569-74.
3. Zuckerman GR, Trellis DR, Sherman TM, Clouse RE. An objective measure of stool color for differentiating upper from lower gastrointestinal bleeding. Dig Dis Sci. 1995;40:1614-21.
4. Wilcox CM, Alexander LN, Cotsonis G. A prospective characterization of upper gastrointestinal hemorrhage presenting with hematochezia. Am J Gastroenterol. 1997;92:231-5.
5. Dar IA, Dar WR, Khan MA, Kasana BA, Sofi NU, Hussain M, et al. Etiology, clinical presentation, diagnosis and management of lower gastrointestinal bleed in a Tertiary Care Hospital in India: A retro-prospective study. J Dig Endosc. 2015;6:101-9.
6. Laine L, Yang H, Chang SC, Datto C. Trends for incidence of hospitalization and death due to GI complications in the United States from 2001 to 2009. Am J Gastroenterol. 2012;107:1190-5.
7. Ghassemi KA, Jensen DM. Lower GI bleeding: epidemiology and management. Curr Gastroenterol Rep. 2013;15(7):333.
8. Farrell JJ, Friedman LS. Review article: The management of lower gastrointestinal bleeding. Aliment Pharmacol Ther. 2005;21:1281-98.
9. Peura DA, Lanza FL, Gostout CJ, Foutch PG. The American college of gastroenterology bleeding registry: Preliminary findings. Am J Gastroenterol. 1997;92:924-8.
10. Zuckerman GR, Prakash C. Acute lower intestinal bleeding: Part I: Clinical presentation and diagnosis. Gastrointest Endosc.1998;48:606-17.
11. Richter JM, Christensen MR, Kaplan LM, Nishioka NS. Effectiveness of current technology in the diagnosis and management of lower gastrointestinal hemorrhage. Gastrointest Endosc. 1995;41:93-8.
12. Strate LL, Ayanian JZ, Kotler G, Syngal S. Risk factors for mortality in lower intestinal bleeding. Clin Gastroenterol Hepatol. 2008;6:1004-10.
13. Strate LL. Lower GI bleeding: epidemiology and diagnosis. Gastroenterol Clin North Am. 2005;34:643-64.
14. Lanas A, Garcia-Rodriguez LA, Polo-Tomas M, Ponce M, Alonso-Abreu I, Perez-Aisa MA, et al.

Time trends and impact of upper and lower gastrointestinal bleeding and perforation in clinical practice. Am J Gastroenterol. 2009;104:1633-41.
15. Zuckerman GR, Prakash C. Acute lower intestinal bleeding. Part II: etiology, therapy, and outcomes. Gastrointest Endosc. 1999;49:228.
16. Sakthivel S, Kannaiyan K, Thiagarajan S. Prevalence of duodenal diverticulum in South Indians: A Cadaveric Study. ISRN Anatomy. 2013;Article ID 767403.
17. Alruzug IM, Aldarsouny TA, Semaan T, AlMustafa A. Lower gastrointestinal bleeding in Saudi patients: a retrospective longitudinal study. J Gastrointest Dig Syst. 2016;6:410.
18. Govil D, Sahni P. Lower gastrointestinal haemorrhage. GI Surg Ann. 1994;1:93-103.
19. Fernández Alonso C, García Lamberechts EJ, Fuentes Ferrer M, Chaparro D, Pinto C, Elkipe V, et al. Management of lower gastro-intestinal bleeding in the emergency department short-stay unit. Emergencias. 2010;22:269-74.
20. Tan BK, Tsang CB, Nyam DC. Management of acute bleeding per rectum. Asian J Surg. 2004;27:32-8.
21. Strate LL, Syngal S. Timing of colonoscopy: impact on length of hospital stay in patients with acute lower intestinal bleeding. Am J Gastroenterol 2003;98:317-22.
22. Schmulewitz N, Fisher DA, Rockey DC. Early colonoscopy for acute lower GI bleeding predicts shorter hospital stay: a retrospective study of experience in a single centre. Gastrointest Endosc. 2003;58:841-6.

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