



ORIGINAL ARTICLE

Utility of colonoscopy in detection of early lower gastrointestinal bleeding at a tertiary care hospital.

Seema Nayab¹, Riaz Hussain Awan², Ameet Jesrani³, Nazim Arain⁴, Aneela⁵, Nida Amin Khan⁶

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ABSTRACT... Objective: To determine the prevalence of the common causes of lower gastrointestinal bleeding by Colonoscopy as a diagnostic modality in patients with gastrointestinal bleeding. **Study Design:** Cross Sectional Descriptive study. **Setting:** Department of Gastroenterology, Liaquat University of Medical and Health Sciences, Jamshoro. **Period:** March 2021 to August 2021. **Material & Methods:** This study was performed in Liaquat University of Medical and Health Sciences, Jamshoro in patients presenting with lower gastrointestinal bleeding. History, examination and investigations were carried out. After stabilizing the patient lower gastrointestinal endoscopy was performed. **Results:** Total 139 patients were included in this study. Intermittent bleeding per rectum was the main presenting complaint followed by continuous bleeding per rectum. The average age of the patients was 45.61 ± 16.40 years. Out of 139 patients, 94(67.6%) males and 45(32.4%) females. Bleeding related to internal hemorrhoids was present in 40(28.8 %) patients 30(21.6%) male and 10(7.2%) females as the most common cause of lower GI bleed followed by rectal ulcers 14(10.1%) and polyps in 9(6.5%) patients. infective colitis, proctitis and colonic ulcers were noted in 8(5.8%), 6(4.3%) and 5(3.6%) patients respectively. Malignant lesions in colon and rectum were noted in 8(5.8%) and 3(2.2%) patients while ulcerative colitis, crhon's and diverticular disease were noted in 5(3.6%), 1(1.4%), 2(0.7%) patients respectively. 29(%) had normal clonosopic examination. **Conclusion:** In our population hemorrhoid bleed is the leading cause of lower gastrointestinal bleeding followed by bleeding due to rectal ulcer and polyps.

Key words: Hemorrhoids, Lower GI Bleeding, Lower GI Endoscopy, Ulcer Disease.

INTRODUCTION

The gastrointestinal (GI), or digestive, tract extends from mouth to anus. The division of the GI tract into upper and lower is a matter of some confusion and debate. The classification of upper and lower gastrointestinal tract is slightly different on endoscopy with the bleeder in the large bowel being classified as lower gastrointestinal bleed as opposed to the conventional anatomical demarcation between the upper and lower gastrointestinal bleed being the duodenojejunal flexure. Any bleeder beyond the terminal ileum is termed as lower gastrointestinal bleed. Bleeding from the upper tract is more common, however massive bleeding from large bowel can be a life threatening event. 20% of emergency alimentary canal bleeders are from lower gastrointestinal

tract. A recent US population-based study estimated an annual incidence rate of lower GI bleeding at 20.5/100,000.¹ The most common diagnoses were diverticulosis, colorectal cancer and ischemic colitis.² Factors associated with the development of acute lower GI bleeding include advanced age and use of non-steroidal anti-inflammatory medication.³ The patients presenting with lower gastrointestinal bleeds are usually elderly with average age range of 66-77 years. Generally the mortality is between 2 to 4% of total cases that present but the chances of mortality soars to 23.1% with comorbids. The increase in the rate of large bowel bleeders with older age groups is due to increased incidence of angiodysplasia and diverticulosis among the elderly.¹

1. FCPS, Assistant Professor Radiology, Liaquat University of Medical and Health Sciences, Jamshoro.
2. FCPS, Assistant Professor Gastroenterology, Liaquat University of Medical and Health Sciences, Jamshoro.
3. FCPS, Associate Professor Radiology, Sindh Institute of Urology and Transplantation, Karachi.
4. FCPS, Consultant Gastroenterologist, Liaquat University of Medical and Health Sciences, Jamshoro.
5. FCPS, Medicine Resident, Liaquat University of Medical and Health Sciences, Jamshoro.
6. FCPS, Lecturer Radiology, Sindh Institute of Urology and Transplantation, Karachi.

Correspondence Address:

Dr. Riaz Hussain Awan
Department of Gastroenterology
Liaquat University of Medical and Health Sciences, Jamshoro.
dr.awan.riaz@gmail.com

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However studies conducted in Pakistan have demonstrated that there were differences in frequencies of etiologies in their population compared to Western one. The per annum incidence of lower gastrointestinal bleeding in the US is 0.03% that is 20- 27 cases per 100 000 of adult people.¹ In our country, lot of work has been done on etiology and treatment of upper gastrointestinal bleeding but lower tract remains deficient that is why we don't have comparable statistics. In a study done in Pakistan showed that the annual incidence of LGIB has been estimated to be 20% and mortality as 11%.² The frequency of Crohn's disease 2.2%, Hemorrhoids 10.7%, polyps 6.2%, and diverticulae 2.3% show that these causes are rare in this region whereas ulcerative colitis seen in 19.3% was the leading cause of bleeding per rectum in this study.² Researches have shown that the causes of lower tract bleed are different from those studied in western population.²

Therefore, the aim of this study is to update and re-evaluate the findings of previous studies, along with identification of common pathologies of LGIB, by Colonoscopy, so we have the current magnitude of various causes of LGIB as it is associated with significant mortality. It has a very high diagnostic yield.^{1-5,7,9} Colonoscopy makes a definitive diagnosis of the bleeding point in majority of patients presenting in severe active large bowel bleeds and also has a therapeutic role, avoiding the burden of, and associated complications of open surgery.^{1,10}

MATERIAL & METHODS

This descriptive cross sectional study was conducted at Liaquat University of Medical and Health Sciences, Jamshoro for five months from 10th March 2021 to 9th august 2021 after approval from ethical committee department (NO. LUMHS/REC/-42) along with informed and written consents were taken from patients. Sample size is 139 with 95% confidence Interval and 5% margin of error, calculated by using the WHO's sample size calculator(version 2.0) for Health Sciences with reference of the study² by considering the vascular causes as the lowest

proportion of common causes of LGIB i.e. 10.7%. Sample was calculated by non probability purposive sampling. Total 139 patients of both genders with age > 15 years, having visible rectal bleeding as their chief complaint and bleeding of not > 6 months duration were included in this study. Patients with known cause of lower GI bleeding, bleeding secondary to trauma, those with high suspicious of upper GI bleeding (having history of hematemesis/ melena or aspirates from stomach of coffee ground colour material or bright red colour bleed) presenting as source of lower GI bleeding and patients who are having bleeding from hemorrhoids which are diagnosed by per rectal examination or by proctoscopy were excluded from the study. Also patients with known GI malignancy and inflammatory bowel diseases, with advanced cardiac, renal and liver diseases, pregnant patients and those unfit for lower GI endoscopy were also excluded from the study.

One hundred and thirty nine patients of lower gastrointestinal bleed will be evaluated admitted through the Emergency or Out Patient department, by Colonoscopy. All patients will be included by keeping in view the inclusion and exclusion criteria. Risk and benefit of colonoscopy will be discussed with the patient and relatives. All data will be collected on the proforma attached. Statistical package for social sciences (SPSS-15) will be used to analyze the data. Mean + Standard deviation will be calculated for quantitative variables. Age, gender, endoscopists (resident/consultant), bowel prep will be taken as confounders and will be controlled in the study. Frequencies and percentages will be calculated for qualitative variables like gender. Subjects will be inducted from endoscopy suite fulfilling the inclusion and exclusion criteria. Informed and written consent will be taken. Patient's demographic data, comorbid conditions and drugs history will be taken. Colonoscopy conducted by a resident year 1, 2, 3, or by a consultant will also be notified. Bowel preparation (poor/adequate) will be recorded by the endoscopist and will be entered in the proforma. Colonoscopy findings will be recorded by the investigator himself after the procedure.

RESULTS

A total of 139 patients were included in the study. The average age of the patients was 45.61 ± 16.40 years (95%CI; 42.86 to 48.36). The age range of participants in our study sample was 16-84 years. Of 139 patients, there were 94 (67.6 %) males and 45 (32.4%) females, with 2.08:1 male to female ratio. Regarding presenting complain, hematemesis was the most common presentation that is present in 68%, melena in 30% and mixed presentation in 2% of patients. Pattern of lower gastrointestinal bleed in patients presenting with lower gastrointestinal bleeding is presented in Table-I. Bleeding related to hemorrhoids was present in 40 (28.8 %) patients as the most common cause of lower GI bleed. Bleeding related to rectum was present in 32 (23.1%) among which rectal ulcers were present in 14 (10.1%) patients, rectal polyp in 9 (6.5%) patients, proctitis in 6 (4.3%) and rectal growth in 3 (2.2%) patients. Bleeding related to colon was present in 38 (27.3%) patients, among which colitis was present in 8 (5.8%) patients, ileitis was present in 6 (4.3%) patients, ileocecal ulcers in 6 (4.3%) patients, colonic ulcers in 5 (3.6%) patients, ulcerative colitis 5 (3.6%) patients, colonic growth in 5 (3.6%) patients, diverticular disease in 2 (1.4%) and crohn's disease in 1 (0.7%) patient.

Pattern / Causes	No. of Patients (%)
Hemorrhoids	40 (28.8%)
Normal	29 (20.9%)
Rectal ulcers	14 (10.1%)
Rectal polyp	9 (6.5%)
Proctitis	6 (4.3%)
Rectal growth	3 (2.2%)
colitis	8 (5.8%)
ileitis	6 (4.3%)
Ileocecal ulcers	6 (4.3%)
colonic ulcers	5 (3.6%)
Ulcerative colitis 5(3.6%)	5 (3.6%)
Colonic growth in 5(3.6%)	5 (3.6%)
Diverticular disease	2 (1.4%)
Crohn's disease in	1 (0.7%)
Total	139 (100%)

**Table-I. Causes of lower gastrointestinal bleeding.
(N= 139)**

DISCUSSION

Active small bowel bleeding is a clinically significant condition has important implications for health care costs worldwide.

Patients with upper GI bleed are very sick; they require intensive monitoring and proper assessment. After stabilizing the patient hemodynamically urgent upper GI endoscopy should be performed, with the goal of both diagnosis, and in some circumstances, treatment of the specific disorder.¹ Variceal hemorrhages have much higher re-bleeding and mortality rates than other diagnosis. Mortality from variceal hemorrhage during initial hospitalization is about 30%, with re-bleeding rates of 50%-70%. Greater accuracy and therapeutic potential of endoscopy generally makes it the diagnostic procedure of choice. Multiple national and international studies are carried out to see the endoscopic findings in patients with acute upper gastrointestinal bleeding.

Participant sample size consisted of 200 patients with average age of 52.77 years, who presented with upper gastrointestinal bleeding in Liaquat University of Medical and Health Sciences, Jamshoro. The average age group of our study is similar to study by Fleisherher D,¹ in which 1000 patients were screened with a mean age of 52 years. Local study by Wajahat Hussain et al² also revealed age above 45 years. Mean age of my patients was younger than that mentioned by Rockall et al i.e. 66 and Golanova J. This difference in age could be due to difference in life span which is higher in western countries and development of cirrhosis at early age in our population. In this study out of 200 patients there were 134 (67%) males and 66 (33%) females with 2.03:1 male to female ratio, this is similar to study by Fleisherher D¹ in which male to female ratio was 2:1- and a local study by Wajahat Hussain et al² which revealed male to female ratio of 2.03:1.

Other local study conducted by Tull Bushra et al³ from Rawalpindi revealed male predominance and Masood-ur Rehman⁴ through a study conducted in Peshawar demonstrated that of the total sample of 432 patients, males were

roughly twice as common (61.5%) as compared to females (38.5%). Male dominance is because of the fact that males are probably more exposed to risk factors like barber shaves, getting I/V medication and tattooing. In this study ruptured collateral vessels is the cardinal cause of upper gastrointestinal hemorrhage which is present in 56% of patients.

The most common cause of upper GI hemorrhage i.e. variceal bleed was supported by majority of Pakistani studies by Chaudery et al⁵ i.e. 49% and Abbas Khan et al.⁶ The result of my study is also supported by local study by AW Chaudhary in which 892 patients were enrolled.

International studies which reported similar results are carried out by Lule GN et al⁷ in Kenya (35%) and Ahmed et al⁸ (30%) in KSA. In contrast to this study most of the international data reported peptic ulcer as the most common cause. A large study conducted by Silverstein FE et al⁹ in which 2097 patients were enrolled among which 55.7% had peptic ulcer.

Other international studies also encountered gastric ulcer as the prevailing cause of upper gastrointestinal hemorrhage were done by Banergee et al¹⁰ (66.6%), Mino Fugarlos¹¹ (54.3%), and Rockall TA et al¹² (29-40%). This difference is due to the fact hepatitis B and C related CLD is prevalent in our country therefore variceal bleeding is the common cause.

In this study upper GI neoplasms as cause of bleeding are present in 11(5.5%) patients. A study by Qureshi et al¹³ revealed that neoplasms especially gastric growth is present in 2% of patients. Another study conducted by Hamelmann H¹⁴ revealed neoplasms in 8% of patients. As upper GI bleed is less common presentation of GI neoplasms so prevalence is much higher than mentioned.

In this study main presentation of patient is hematemesis which is present in 68% of patients. Local study by Najam-un-Nasir et al¹⁵ revealed mixed presentation i.e. hematemesis and melena as the main presentation (69%), another study by

Ahmad A Banisalamah¹⁶ stated that hematemesis is the most common presentation. In contrast to my study Mino Fugarolos¹¹ reported 44% cases presenting with melena alone. This is because of the fact most people probably ignore melena and they do not take medical advice or present late. Diagnosis was established in all patients by endoscopy, this is similar to study by Tassawar Hussain¹⁷ in which diagnosis was established in all cases. Our hospital is a tertiary care hospital having endoscopy facility round the clock so endoscopic diagnosis was performed in all the cases.

CONCLUSION

There are many causes which can lead to life threatening lower gastrointestinal bleeding and endoscopy is the main tool to diagnose them early and prevent from possible mortality and morbidity.






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AUTHORSHIP AND CONTRIBUTION DECLARATION

No.	Author(s) Full Name	Contribution to the paper	Author(s) Signature
1	Seema Nayab	Contributed and conception and interpretation of data and gives its expert for manuscript designing.	
2	Riaz Hussain Awan	Contribution to conception and designing, acquisition and review of data.	
3	Ameeth Jesrani	Drafting of the article and shares expert reserach opinion and experience in finalizing the manuscript.	
4	Nazim Arain	Contributed and conception and interpretation of data and gives its expert for manuscript designing.	
5	Aneela	Revision and corresponding author data collection and analysis.	
6	Nida Amin Khan	Contributed to conception and designing, acquisition and review of data.	