

Clinical profile and colonoscopic findings in patients with lower gastrointestinal haemorrhage: a descriptive cross-sectional study



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ABSTRACT

Background: Most of the bleeding in the lower gastrointestinal tract are usually located in the rectum, colon and terminal ileum. Colonoscopy is an invasive procedure used for both diagnostic and therapeutic purposes for detection of lower gastrointestinal (GI) tract pathologies and haemorrhage. **Aims and Objective:** The purpose of the study was to understand the clinical profile and colonoscopic findings in patients with lower gastrointestinal haemorrhage. **Materials and Methods:** Seventy-two patients presenting with lower GI haemorrhage were included in the study. All patients underwent colonoscopy after achieving hemodynamic stability and bowel preparation. Clinical profile and colonoscopic findings were studied. **Results:** The common aetiologies of lower GI haemorrhage were haemorrhoids followed by nonspecific colitis, colorectal polyp and carcinoma of colon. Rectum followed by sigmoid harbored majority of pathologies that presented with lower GI haemorrhage. **Conclusions:** The diagnosis of the pathological lesion and management of underlying cause not only prevents another episode of lower GI haemorrhage but also help in reducing morbidity and mortality. Colonoscopy or at least sigmoidoscopy is strongly recommended for evaluation, diagnosis and management of lower GI haemorrhage.

Key words: Colitis; Colonoscopy; Colorectal; Gastrointestinal haemorrhage

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INTRODUCTION

Lower gastrointestinal (GI) haemorrhage is defined as bleeding distal to the ligament of Treitz.¹ Most of the pathological lesions and haemorrhage in the lower GI tract are usually located in the rectum, sigmoid and left sided colon.² It is usually suspected when patients complain of haematochezia (passage of frank bright red blood) or bloody diarrhea.³⁻⁵ Most of the bleeding from the lower GI tract stops spontaneously and patients usually have favorable outcomes compared to upper GI haemorrhage. However, morbidity and mortality tend to increase in older patients and with other pre-existing comorbidities.⁶

Colonoscopy is an invasive procedure used for both diagnostic and therapeutic purpose for detection and management of the diseases of rectum, colon, and terminal ileum. Direct visualization makes it investigation of choice for colonic pathology. Mucosal biopsy alongside diagnostic purpose and minimal invasive therapeutic procedure can be done during the colonoscopy procedure.⁷

In country like Nepal, colonoscopy is still being done for diagnostic purpose. Very limited studies are available in this part of the country regarding lower GI haemorrhage. Considering above facts this study was designed to study the clinical profiles and colonoscopic finding of the patient presenting with lower GI haemorrhage in a tertiary care

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MATERIALS AND METHODS

This observational, cross sectional hospital based prospective study was carried out in the unit of Medical gastroenterology under Medicine department at Manipal College of Medical Sciences and Teaching Hospital at Pokhara, Gandaki Province, Nepal during April 2018 till March 2020 after obtaining ethical clearance from Institutional Research Committee (MEMG/IRC/333/GA) and informed consent from patient or patient relatives.

All patients randomly admitted from emergency irrespective of age, sex, co-morbidities with lower GI haemorrhage were undertaken for the study. In emergency department, patients were first hemodynamically stabilized with intravenous (IV) fluids. Injection tranexamic acid was used for achieving haemostasis. Blood and blood products were transfused when required. History, physical examination and data considering demographic variables, symptomatology, clinical features, blood tests and coagulation profile were carried out. Ultrasonography of abdomen, CT abdomen was done when relevant. After hemodynamically stabilization, bowel preparation and pre medications and informed consent, colonoscopy was performed. Bowel preparation was done with 2 liters of Poly Ethylene Glycol given 8 hours prior to procedure and patient kept on liquid diet from 24 hours prior to procedure, whenever possible. In case of acute emergency, only sigmoidoscopy after rectal enema was performed. During the procedure, patient was laid on left lateral position, intravenous Hyoscine butyl bromide was given. Each patient underwent endoscopic investigation by standard flexible colonoscope (PENTAX EPK 700, PENTAX JAPAN Inc). Colonoscopy findings were noted and biopsy of tissue was sent when relevant. The lesion with recent stigmata of haemorrhage or pathological lesion was considered the cause of lower GI haemorrhage. Colonoscopy findings followed by histology of biopsies were helpful in making final diagnosis and aetiologies of lower GI bleed.

Inclusion criteria

All patients with lower GI haemorrhage.

Exclusion criteria

1. Patient with persistent hemodynamic instability.
2. Same patient re admitted and colonoscopy showing same finding in re admissions.
3. Patients with incomplete records or who fail to give informed consent.

Statistical analysis

Data were collected covering the relevant parameters for the study. All categorical data were expressed in percent and absolute number. All numerical continuous data were expressed in mean \pm SD. The data analysis was done using Statistical Packages for the Social Sciences (SPSS) 20 (IBM Corp. Released 2011. IBM SPSS Statistics for Windows, Version 20.0. Armonk, NY: IBM Corp.)

RESULTS

A total of 83 patients underwent colonoscopy for lower GI haemorrhage between April 2018 till March 2020. But 9 patients had to be excluded because of inadequate data. Finally, a total of 72 patients that comprised of 42 (60%) male and 30 (40%) female were enrolled for the study. (M: F=3:2). The mean age of subjects was 48 ± 9.34 years with a range of 18 – 79 years of age.

Patients were further classified as per sex and age groups (Table 1). A total of 12 (16.7 %) patients presented with shock. Patients had various presentation and complaints alongside history of lower GI bleed (Table 2).

Co morbid conditions were present in 570 (86.4%) patients (Table 3).

Risk factors in the study participants include non vegetarian in 72 (100%), actively smoking in 64 (88.9%), chronic alcohol consumption in 56 (77.8 %), recent (within a week) consumption of NSAIDS and steroids in 18 (25%).

Pallor was the most common clinical finding in 58 (80.5%), followed by abdominal tenderness in 44(61.1%),

Table 1: Age groups / sex distribution of patients under study

Sex	Age Groups			Total (N=72)
	<40 yrs	40-59 yrs	60 years and above	
Male	9	22	11	42
Female	6	16	8	30

Table 2: Complaints of patients with lower GI haemorrhage

Presentation with	Patients	Percentage
Haematochezia (frank rectal bleeding)	58	80.5
Bloody diarrhea (blood mixed stools)	46	63.9
Altered bowel habits	33	45.8
Chronic constipation	32	44.4
Chronic abdominal pain	28	38.9
Shock	12	16.7
Mass felt or protrusion out of anus during straining or defecation	8	11.1

hepatomegaly in 30(41.7%), and splenomegaly in 12 (16.7 %) patients under study.

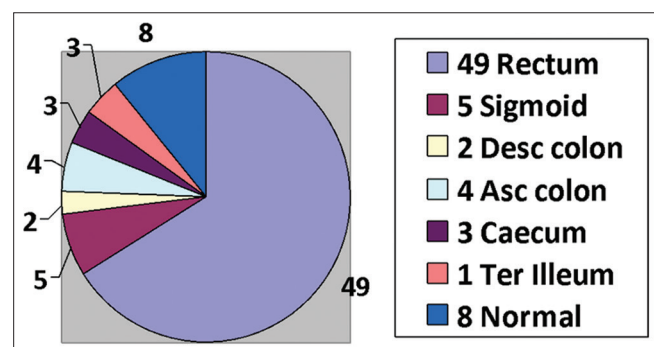
Mean hemoglobin at presentation was 9.9 gm% with a range of 4.8 gm% to 12.5 gm %. Hemoglobin was <10 gm% in 35 subjects. Average of 1.9 units and a maximum of 6 units of blood were transfused. Mean platelets count was 106,000 / mm³ with a minimum of 40,000/ mm³ and a maximum of 5,10,000/mm³.

Complete colonoscopy with visualization of terminal ileum could be performed in only 64 (88.9 %) patients. Terminal ileum could not be intubated in 5 patients. Scope could not be negotiated beyond hepatic flexure in another subset of 3 patients. The location of the lower GI tract lesions and the relative frequency of hemorrhagic sites has been shown in pie diagram 1.

Erosions, ulcers and hemorrhoids in the rectum were the most common findings in colonoscopy.

Etiology of bleed was not identified in six (8.3%) patients as their colonoscopy was normal. The most common aetiologies for lower GI bleed after colonoscopy and histology were haemorrhoids and non specific colitis followed by others (Table 3).

Non specific colitis seen in 16 biopsies (22.2%) was the most common histological finding. Colitis was more



Pie diagram 1: Sites of colonic pathology on colonoscopy (N = 72).

Table 3: Co morbidities in patients presenting with lower GI haemorrhage

Co morbidities	Number (N=72)	Percentage
Chronic liver disease	33	45.6
chronic kidney disease	2	2.8
Ischemic heart disease	7	9.7
Past history of CVA	4	5.6
COPD / Bronchial Asthma	2	2.8
Arthritis	3	4.2
Diabetes Mellitus	4	5.6
Hypertension	6	8.3
No significant past medical history	11	15.3
Total	72	100

common in males (M: F =3:2) with mean age of 41±8.37 years. Rectum was the most common site of involvement and was seen in more than 2/3rd of cases.

Haemorrhoids were the most common colonoscopic finding in patients with lower GI haemorrhage and seen in 20 (27.8%) patients. They were seen at mean age of 36 ±8.28 with male predominance (M: F=3:2). Bleeding haemorrhoids were commonly seen in patients among 30-49 years of age group. Majority (70 %) of the haemorrhoids were of Grades II/III. Eighteen (90 %) patients with haemorrhoids gave history of bleeding per rectum at the end of defecation. All patients had history of chronic constipation.

Ulcerative colitis was the next most important colonic pathology and was seen in 14 (19.4%) patients. Mean age at presentation was 34±7.65 years with slight female predominance (M: F =3:4). About 75% of the cases were identified in age group below 40 years of age. Only 1 patient with Crohns disease presented with lower GI haemorrhage. The most common site of bleed with ulcerative colitis was recto-sigmoid seen in 12 (85.7 %). Pan colitis was observed in 8 (57.1%) patients.

Colorectal carcinoma was the etiology of lower GI haemorrhage in 13.9 %. Rectal Carcinoma was source of bleed in 6 patients. Three malignant colonic growths were detected in sigmoid colon, 1 in descending colon and 2 in ascending colon. All these 12 cases of colorectal carcinoma were histological adenocarcinoma. Mean age of presentation with colorectal carcinoma was 65±11.53 with male predominance (M: F=3:1). Eight (66.6%) patients were aged between 60 -79 years of age. Two cases were aged below 40. The youngest patient was a 32-year male diagnosed with rectal carcinoma. It was observed that all these 12 patients with colorectal carcinoma were non vegetarian and all were chronic smokers

Polyps were the etiology of lower GI bleed in only 4 (5.6%) patients. 3 large solitary pedunculated polyps were located in the rectum which were removed by snare polypectomy. Mean age of these patients was 48±9.55 with male predominance (M: F=3:1). Three of the 4 polyp had adenomatous polyp with mild dysplasia and only 1 had malignant adenocarcinoma.

DISCUSSION

Majority of the patients with lower GI haemorrhage were found in the age group of 40- 59 years in the current study. Age groups of 51-60 years were common in the studies by Rahman et al⁸ in Bangladesh and Chaudhary et al⁹ in Nepal.

However, a lower age group of 18–30 years was observed in an Indian study by Hajare et al.¹⁰ Elderly population (>60 years) constituted 40 % of lower GI bleed by Dar et al.¹¹ in Kashmir, India.

Mean age of presentation of lower GI bleed was 59 ± 16.9 years in a European study by Fernández et al.¹² The mean age of patients presenting with lower GI bleed were 41.9 ± 15.0 years and 43.82 ± 17.96 years in the studies by Rahman et al.⁸ and Hajare et al.¹⁰ respectively. The mean age of patients was 48 ± 9.34 years in the current study. Chaudhary et al.⁹ in Western Nepal reported almost similar age group of 46.93 ± 16.99 years reflecting the possibility of similar environmental and etiological risk factors and similar patterns of lower GI tract diseases prevailing within the country.

All these studies including this study had male predominance. The male predominance may be attributable to gender health seeking practices as well as more risk factors like smoking, alcoholism and unhealthy dietary habits more prevalent among Nepalese males.

Haematochezia (80.55%) followed by bloody diarrhea (63.9%), altered bowel habits (45.8%), chronic constipation (44.9%) and abdominal pain (38.9%) were the common complaints by the patients in our study. Haematochezia (80%) was the common presentation of lower GI haemorrhage followed by constipation (78%) in the study by Hajare et al.¹⁰ Our finding was consistent with the study by Dar et al.¹¹ where hematochezia followed by bloody diarrhea were the main complaints.

The most colonic pathologies presenting with lower GI haemorrhage were located in rectum in 68% in the current study. Chaudhary et al.⁹ reported a lesser (59.42%) of rectal pathologies with lower GI haemorrhage.

Many studies in the Western countries have identified polyp, diverticular diseases, neoplasia and IBD as the common aetiologies of lower GI haemorrhage. The common colonoscopic findings for lower GI haemorrhage were polyps (25.1%) followed by diverticular disease (24%), neoplasia (12.6%), inflammatory bowel disease (9.4%), unspecific proctitis (2.4%) and others (6.1%) in the study by Fernández et al.¹² The common pathologies of lower GI haemorrhage were diverticulitis (15%), inflammatory bowel disease (13%), ischemic colitis (11%) and haemorrhoids (11%) in a study by Hreinsson et al.¹³ in Iceland. Colonic diverticulitis, haemorrhoids and polyps/neoplasms were identified as the common sources of lower GI bleed in United Kingdom.^{14,15} In the study of Alobaidi et al.¹⁶ in Iraq, the most common causes were ulcerative colitis in 31.3% patients, followed by cancer in

21.8% patients and polyps in 15.2% patients. Whereas, in the Indian sub continent, haemorrhoids, IBD and polyps have been described as common aetiologies of lower GI bleed in various studies. But literatures vary among their orders and frequencies of these lesions. Maximum (28.5%) patients had haemorrhoids, followed by colorectal cancer (27.5%) in the study by Rahman et al.⁸ in Bangladesh. Haemorrhoids (48%) were the commonest etiology but followed by ulcerative colitis (24%) in the Indian study by Hajare et al.¹⁰ Growth/polyp in 29.3% followed by IBD in 17.7% were the most common aetiologies for lower GI bleed in Kashmir, India in the study by Dar et al.¹¹ The common colonoscopic findings in patients with lower GI haemorrhage in the study by Chaudhary et al. in western Nepal were growth (14.49%), followed by haemorrhoids (13.04%) and polyp (8.7%). In another Nepalese study by Shrestha et al.,¹⁷ haemorrhoids (35.2%) followed by non-specific colitis (24.8%) colon polyp (18.3%), IBD (10.4%) and colon cancer (6.5%) were the common aetiologies of lower GI haemorrhage. Haemorrhoids (27.8%) and non-specific colitis (25%) were also the two common aetiologies of lower GI bleed in the current study, in consistency with the study by Shrestha et al.¹⁷ This was followed by ulcerative colitis (22.2%), carcinoma colon (6.9%) and polyps (5.6%) in the current study. Compared to Western literature, diverticulosis was uncommon in the above-mentioned studies in the Indian sub-continent including ours. Shrestha et al.¹⁷ in Nepal documented 1.7 % and the current study identified only 1.4% diverticulosis as etiology of lower GI haemorrhage.

Haemorrhoids were common cause of lower GI haemorrhage among 30-49 years of age by Shrestha et al.¹⁷ as well as in the current study. The most common histological diagnosis was nonspecific colitis in the study by Chaudhary et al.⁹ in Western Nepal and Shrestha et al.¹⁷ as well as in the current study.

The first presentation of Ulcerative colitis has been found to be in 3rd and 4th decades in many literatures. Around 79% patients were below 40 years in the study in Iraq by Alobaidi et al.¹⁶. Shrestha et al.,¹⁷ reported a majority of IBD cases including ulcerative colitis in 16-29 years of age group. In the current study, ulcerative colitis was the second most important colonic pathology for lower GI haemorrhage and was seen in 19.4 % patients and at younger age group, finding similar to the other studies. About 75% of the cases were identified in age group below 40 years of age. Mean age at presentation were 27.9 ± 6.5 years by Shrestha et al.¹⁷ and 34 ± 7.65 years in the current study. The most common site for ulcerative colitis was recto sigmoid in 72.6% patients in the study by Alobaidi et al.¹⁶. The finding was similar to our study (75.8%). Pan colitis was observed in 27.4% by Alobaidi et al.¹⁶ whereas it was 30.3% in the current study.

Colorectal cancers were more common in rectum around 60 %, followed by sigmoid 25%, while remainder parts of colon constitute only 14% according to the study by Alobaidi et al.¹⁶ Our study also demonstrated a similar anatomical site of distribution. Half and one fourth of malignant growth was detected in rectum and sigmoid colon respectively. Colon cancer was seen in 6.5% of the study participants and especially in age groups of 70-84 years in the study by Shrestha et al.¹⁷ Colorectal carcinoma were seen in more (13.9 %) patients in the current study and majority (66.6%) were observed at a even younger age group of 60 -79 years. Two (16.6%) cases of rectal carcinoma were aged below 40 years of age. With the use of alcohol, smoking at earlier ages, bad dietary habits with decrease consumption of dietary factors, the prevalence of carcinoma tends to be shifting to a decade earlier.

Colon polyps were the source of lower GI haemorrhage in 18.3% in the Nepalese study by Shrestha et al.,¹⁷ whereas it constituted only 5.6% in the current study. Polyps were detected commonly in the age groups of 50-69 years in both the studies.

No source of bleeding could be identified from 1.4% and 16% in the studies by Shrestha et al.¹⁷ and Rahman et al.⁸ respectively. Whereas, no source of bleeding could be identified in 8.3% in the current study.

CONCLUSIONS

The common aetiologies of lower GI haemorrhage were haemorrhoids followed by non-specific colitis, colorectal polyp and carcinoma. Rectum, sigmoid and left sided colon harbor majority of the pathologies and they are common sites for lower GI bleed. Most of the bleeding from the lower GI tract stops spontaneously. The timely diagnosis of the pathological lesion and immediate management of lower GI haemorrhage helps in preventing another episode of lower GI bleed thus can be helpful in reducing morbidity and mortality. Colonoscopy or at least sigmoidoscopy is strongly recommended for evaluation, diagnosis and management of lower GI tract pathologies and haemorrhage.

LIMITATION OF THE STUDY

The study reflects to the findings of a specific geographical area with a small sample size. Due to lack of sedation, illeo ceacal intubation was not possible in a minority of cases. This was primarily due to patient refusal for further negotiation of the scope due to abdominal pain and discomfort. Etiology of lower GI bleed could not be identified in some patients because of unavailability

of enteroscopy, capsule endoscopy, and other needful modalities.

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Authors Contribution:

SB -Concept and design of the study, data collection, interpreted the results, prepared first draft of manuscript and critical revision of the manuscript; **RRA**- Data collection, reviewed the literature and manuscript preparation; **BJ** - Design of the study, preparation of manuscript and revision of the manuscript; **DK** – Data collection, preparation of manuscript and revision of the manuscript

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