

ORIGINAL ARTICLE

CAUSES OF LOWER GASTROINTESTINAL BLEEDING ON COLONOSCOPY

Attique-ur-Rehman Jehangiri, Rahid Gul, Rania Hadayat*, Adil Naseer Khan*, Zabiullah*, Liaqat Khursheed

Department of Medicine, Department of Gastroenterology, Ayub Teaching Hospital, Abbottabad-Pakistan

Background: Bleeding from anus is usually referred as rectal bleeding but actually rectal bleeding is defined as bleeding from lower colon or rectum, which means bleeding from a place distal to ligament of Treitz. This study was conducted to determine the frequency of different causes of rectal bleeding in patients at Ayub Teaching Hospital, Abbottabad. **Methods:** One hundred and seventy-five patients with evidence of rectal bleed, without gender discrimination were selected by non-probability convenient sampling from the out-patient department and general medical wards. Patients with suspected upper GI source of bleeding; acute infectious bloody diarrhoea and any coagulopathy were excluded from the study. All patients were subjected to fibre optic colonoscopy after preparation of the gut and findings were recorded. Where necessary, biopsy samples were also taken. Diagnosis was based on colonoscopic findings. **Results:** A total of 175 patients (92 males and 83 females) with mean age 35.81 ± 9.18 years were part of the study. Colonoscopy showed abnormal findings in 150 (85.7%) patients. The commonest diagnosis was haemorrhoids, which was found in 39 (22.3%) patients. It was followed by inflammatory bowel disease (IBD) in 30 (17.1%) patients, solitary rectal ulcer in 13 (7.4%) patients and polyps in 25 (14.3%) patients. Other less frequent findings were non-specific inflammation and fungating growths in rectum. **Conclusion:** Haemorrhoids was the leading cause of bleeding per rectum in this study, followed by evidence of IBD while infrequent findings of polyps and diverticuli indicate that these are uncommon in this region.

Keywords: Colonoscopy; Gastrointestinal Haemorrhage; Haemorrhoids

J Ayub Med Coll Abbottabad 2017;29(3):468–71

INTRODUCTION

Gastrointestinal bleeding is a problem that is frequently seen in the emergency department by doctors.¹ In the United States and United Kingdom hospital admission rate annually due to GI bleeding is 150/100000 and mortality rate among these patients is high, i.e., 5–10%.²

Depending upon site GI bleeding is divided into upper and lower GI bleeding.³ A lower Gastrointestinal Bleed is defined as bleeding that occurs from lower GI tract, distal to the ligament of Treitz and above the anus. The different part included are the last part of the duodenum and the whole area of the jejunum, ileum, colon, rectum, and anus.⁴

In patients who presents with gastrointestinal (GI) haemorrhage, about 20–33% are cases of Lower gastrointestinal bleeding (LGIB). In Western countries, the annual incidence of LGIB is about 20–27 cases per 100,000 population.⁵ In a recent study that takes place at National University Hospital of Iceland the incidence of acute lower GI bleed (ALGIB) was 87/100000/year.⁶ Statistically upper GI bleeding (UGIB) is more than the LGIB, reason behind this is that LGIB is underreported because patient with LGIB usually don't visit the doctor for their problem. In a retrospective study patient with LGIB were analysed, out of these

patients, 46% have re-bleeding and in those patients' mortality rate was 13% within 5 years after hospitalization. In the same study, it was found that patient with LGIB with age more than 65% who are using antithrombotic medication, the risk of recurrence of bleeding and mortality increases.⁷

LGIB is usually suspected when patients complain of haematochezia (passage of maroon or bright red blood or blood clots per rectum). This is different from the clinical presentation of upper GI bleeding, which includes haematemesis and/or melena. Approximately 85% of lower gastrointestinal bleeding involves the colon, 10% are from bleeds that are actually upper gastrointestinal bleeds & present as haematochezia, and 3–5% involve the small intestines.⁸

Once the bleeding is suspected to be coming from a lower GI source, it warrants an evaluation in all cases and proctosigmoidoscopy followed by colonoscopy is the examination of choice for diagnosis and treatment. It is also the most accurate method of imaging the lower gastrointestinal.^{9,10}

LGIB has various causes that can be divided into different groups, these include: anatomic (diverticulosis); vascular (angiodysplasia, ischemic); inflammatory (infectious, idiopathic, and radiation-induced); and neoplastic. In a retrospective study in Detroit USA, analysis of 1100 patients with acute

LGIB was done, all of whom were admitted to the surgical service of a single urban emergency hospital, Gayer *et al* determined that the most common aetiologies for bleeding in these patients were diverticulosis (33.5%), haemorrhoids (22.5%), and carcinoma (12.7%). In the study the investigators also found that most patients (55.5%) presented with haematochezia, with other frequent presentations were maroon stools (16.7%) & melena (11%).¹¹ In another study that was done at National University Hospital of Iceland during 2010. In this study, all patient who underwent colonoscopy were included, 1134 patients underwent 1275 colonoscopies. Overall, 163 patients had ALGIB. The crude incidence for ALGIB was 87/100 000 inhabitants/year. The most common findings were diverticulosis (23%) and ischemic colitis (16%) 6. A difference has been noticed between the West and the subcontinent in the frequency of different findings in patients with rectal bleeding. In Pakistan, lot of studies were done on aetiology and treatment of upper gastrointestinal bleeding but little work is done on the lower gastrointestinal tract. In a study carried out in 1990 in Pakistan, colonoscopy was performed in patients with lower gastrointestinal tract pathologies. The most common pathologies diagnosed were ulcerative colitis and malignancy, followed by amoebic colitis, while percentage of Crohn's colitis, polyps and diverticuli were less.¹² In another study conducted it was determined that the most common cause of rectal bleeding is proctosigmoiditis.¹³ Yet in another study carried out in Karachi using flexible sigmoidoscopy to determine the cause of lower GI bleeding revealed most common findings were haemorrhoids in 22.8% and polyps in 17.2% patients. It failed to determine any cause of bleeding in 21.4% patients.¹⁴ The aim of this study was to update the findings of previous studies, along with identification of common pathologies causing rectal bleeding in our patients.

MATERIAL AND METHODS

It was a cross-sectional descriptive study carried out at Department of Gastroenterology, Ayub Teaching Hospital, Abbottabad from 30 January 2014 to 30 January 2015 including 175 patients selected according to following inclusion and exclusion criteria;

Inclusion Criteria:

- Male and female patients with age above 5 yrs.
- Patients presenting with visible bleeding per rectum as their main complaint.

Exclusion Criteria:

- Patients below the age of 5 yrs.
- Patients with possible upper gastrointestinal bleeding site, i.e., history of

haematemesis/malena or vomiting/naso-gastric aspirates containing coffee-ground material or fresh blood.

- Patients with bleeding per rectum as a result of acute infectious bloody diarrhoea.
- Patients with suspected peritonitis.
- Patients with any history of coagulopathy.
- Those patients who did not consent or refused colonoscopy.

Patients presenting in the out-patient department or admitted patient's in general medical wards of the hospital were included in the study after fulfilling inclusion/exclusion criteria. All patients were interviewed and examined by a gastroenterologist. Informed written consent was taken from each patient before the interview according to the guidelines of the hospital. All the information of the patients was kept confidential. Concerned authorities were also informed and consent was obtained. The data was collected on a proforma. The studies were approved by the institutional review boards. Medical management consisted of hospitalization, monitoring, and resuscitation in intensive care. Anticoagulants and nonsteroidal anti-inflammatory drugs, including aspirin, were discontinued before colonoscopy. Patients also received transfusions of red cells/packed cells for severe anaemia before they underwent urgent colonoscopy. All the patients were prepared for Colonoscopy by asking them to use liquid only daily for three days prior to the examination. They were administered enema twice on the night before and twice on the day of examination. Diazepam was used as an anxiolytic. Olympus(R) (PCF) video colonoscope was used for colonoscopy. Colonoscopic results were compiled and analysed using the statistical tests. Lesions with some degree of suspicion were biopsied and sent to laboratory for histo-pathological studies. Descriptive statistics were used to calculate Mean±SD of numerical data, e.g., age. Nominal data like gender and colonoscopic findings were analysed by their frequencies and percentages. Data was analysed using SPSS version 10.

RESULTS

Study population included 175 patients, 83 females (47.4%) and 92 males (52.6%), with history of visible blood per rectum. Mean age of the patients was 35.81±19.18 years (range: 04–80 years). The range of duration of symptoms was from 1 month to 10 years. The mean duration of rectal bleeding at presentation was 57.4±51.8 months. The longest duration of symptoms at presentation was noticed in patients with inflammatory bowel disease (IBD) and haemorrhoids. Colonoscopy showed abnormalities in 150 patients (85.7%). The common finding was haemorrhoids which was noted in 39 patients (22.3)

IBD was noted in 30 patients (17.1%). 13 (7.4%) patients had a solitary rectal ulcer, another 25 (14.3%) patients had single or multiple polyps. Non-specific growth was visible in 13 (7.4%) cases. Less frequent findings included fungating growths in rectum, non-specific inflammation of colon and single or multiple ulcers of the colon. In 25 (14.3%) patients, no abnormality was seen on colonoscopy. These findings on colonoscopy along with final diagnosis have been shown in tables below.

Table-1: Disease frequency and percentage on colonoscopic findings.

Disease	Frequency	Percent
Normal	25	14.3
Haemorrhoids	39	22.3
SRU	13	7.4
Growth	13	7.4
IBD	30	17.1
Polyps	25	14.3
Others	30	17.1
Total	175	100.0

DISCUSSION

One of the frequent causes of hospital admission is LGIB and it is a major factor that is involved in hospital morbidity & mortality. LGIB is different from upper GI bleeding in epidemiology, prognosis, and management.

The diagnostic yield of colonoscopy in lower GI bleed has been found to be 85.7% which supports almost similar results in other studies, e.g., Chaudry *et al.*¹⁵

The exact incidence of haemorrhoid is difficult to determine because very low percentage of people seeks medical opinion regarding their problem.¹⁶ About 50% population of the USA has symptomatic haemorrhoids at some time during their lives, and around 5% of the population is affected at any given time. Incidence of haemorrhoids is same in male and female¹⁷, with rates peaking between 45 and 65 years. They are more common in Caucasians and those of higher socioeconomic status¹⁸. Various studies have shown that haemorrhoids are the most common cause of lower GI bleeding. Haemorrhoids have also been shown to co-exist with other pathologies of rectal bleeding including malignancy. This emphasizes the importance of sigmoidoscopy in patients who present with a simple condition like haemorrhoids. The present study yielded similar results with haemorrhoids being the most common finding on flexible colonoscopy in 39 (22.3%) out of 175 patients (Table-1). However, no associated pathologies were found.

The incidence of ulcerative colitis in North America is 10–12 cases per 100,000 per year and its prevalence is 1 per 1000. It has bimodal distribution in age of onset, one peak in incidence occurring

between the ages of 15 and 25, and second peak in incidence occurring in the 6th decade of life.¹⁹ The incidence and prevalence of ulcerative colitis and Crohn's disease are now stable in northern Europe and North America, but in the developing countries their incidence is increasing. In the USA about 1.4 million people and in Europe about 2.2 million people are suffering from IBD. Environmental factors play significantly role in the expression of Crohn's disease and ulcerative colitis. Among these factors cigarette smoking and appendectomy are the strongest one. While the role of other factors such as diet, oral contraceptives, perinatal/childhood infections, or atypical mycobacterial infections are not clear. It needs a lot of work.²⁰ IBD is a disease of elderly in the west. But in this study, it was seen that out of 30 patients diagnosed with IBD, 21 were below the age of 40yrs. This reflects changing etiological patterns in our region compared to west; as inflammatory bowel diseases having their onset usually between 15–40 years of age, being the foremost cause of lower GI bleed. In this study, among 30 patients diagnosed to be sufferings from IBD 14 were male and 16 were female.

In the west, the prevalence of colorectal adenomatous polyps is not same in different countries. The prevalence of adenoma is approximately 10% in sigmoidoscopy studies in average risk patients and in colonoscopy studies it is more than 25%, but prevalence of colorectal cancer is very less among these patients, i.e., less than 1%. In patients who have normal endoscopy, within 3 years the incidence of new adenomas is about 7% by flexible sigmoidoscopy and 27% by colonoscopy.²¹ In this study polyps were observed in 25 (14.3%) patients, which is slightly different as compared to previous studies.

CONCLUSION

Haemorrhoids was the leading cause of bleeding per rectum in this study, followed by evidence of IBD while infrequent findings of polyps and diverticuli indicate that these are uncommon in this region.

AUTHORS CONTRIBUTION

ARJ: Collection of data, preliminary analysis, organization of data and writing of manuscript, RG: Interpretation of data, writing and editing of manuscript, RH & ANK: Statistical analysis, interpretation of data and writing and editing of manuscript, Z & LK: Data collection and literature search.

REFERENCES

1. Cutler JA, Mendeloff AI. Upper gastrointestinal bleeding. Nature and magnitude of the problem in the U.S. Dig Dis Sci 1981;26(Suppl 7):S90–6.

2. Hilsden RJ, Shaffer EA. Management of gastrointestinal hemorrhage. *Can Fam Physician* 1995;41:1931–41.
3. Kim BS, Li BT, Engel A, Samra JS, Clarke S, Norton ID, *et al.* Diagnosis of gastrointestinal bleeding: A practical guide for clinicians. *World J Gastrointest Pathophysiol* 2014;5(4):467–78.
4. Wolfson AB, Harwood-Nuss A, editors. *Harwood-Nuss' clinical practice of emergency medicine*. 4th ed. Philadelphia, PA: Lippincott Williams & Wilkins; 2005.
5. Lewis JD, Brown A, Locallo AR, Shwartz JS. Initial evaluation of rectal bleeding in young persons: a cost effectiveness analysis. *Ann Intern Med* 2002;136(2):99–110.
6. Hreinsson JP, Kalaitzakis E, Gudmundsson S, Björnsson ES. Upper gastrointestinal bleeding: incidence, etiology and outcomes in a population-based setting. *Scand J Gastroenterol* 2013;48(4):439–47.
7. Aoki T, Nagata N, Niikura R, Shimbo T, Tanaka S, Sekine K, *et al.* Recurrence and Mortality Among Patients Hospitalized for Acute Lower Gastrointestinal Bleeding. *Clin Gastroenterol Hepatol* 2014;13(3):488–94.
8. Dutta G, Panda M. An uncommon cause of lower gastrointestinal bleeding: a case report. *Cases J* 2008;1(1):235.
9. Zuccaro G Jr. Management of the adult patient with acute lower gastrointestinal bleeding. American College of Gastroenterology. Practice parameters committee. *Am J Gastroenterol* 1998;93(8):1202–8.
10. Moayyedi P, Ford A. Recent developments in gastroenterology. *BMJ* 2002;325(7377):1399–402.
11. Gayer C, Chino A, Lucas C, Tokioka S, Yamasaki T, Edelman DA, *et al.* Acute lower gastrointestinal bleeding in 1,112 patients admitted to an urban emergency medical center. *Surgery* 2009;146(4):600–7.
12. Nasir SA, Anjum AH, Arshad M, Siraj MI, Tareen MA. Diagnostic colonoscopy. *Pak J Gastroenterol* 1990;4:43–5.
13. Zia N, Hussain T, Salamat A, Mirza S, Hassan F, Waqar A. Diagnostic evaluation of patients presenting with bleeding per rectum by colonoscopy. *J Ayub Med Coll Abbottabad* 2008;20(1):73–6.
14. Hafeez Bhatt AB, Quraishy MS. Flexible sigmoidoscopic findings in patients with fresh rectal bleeding. *J Coll Physicians Surg Pak* 2011;21(9):577–8.
15. Chaudhry V, Hyser MJ, Gracias VH, Gau FC. Colonoscopy: the initial test for acute lower gastrointestinal bleeding. *Am Surg* 1998;64(8):723–8.
16. Davies, RJ. Haemorrhoids. *Clin Evid* 2006;(15):711–24.
17. Lorenzo-Rivero S. Hemorrhoids: diagnosis and current management. *Am Surg* 2009;75(8):635–42.
18. Singer M. Hemorrhoids. In: Beck DE, Roberts PL, Saclarides TJ, Senagore AJ, Stamos MJ, Nasser Y, editors. *The ASCRS textbook of colon and rectal surgery*. 2nd ed. Springer Science & Business Media; 2011. p.175–202.
19. Hanauer SB. Inflammatory bowel disease. *N Engl J Med* 1996;334(13):841–8.
20. Loftus EV Jr. Clinical epidemiology of inflammatory bowel disease: Incidence, prevalence, and environmental influences. *Gastroenterology* 2004;126(6):1504–17.
21. Giacosa A, Frascio F, Munizzi F. Epidemiology of colorectal polyps. *Tech Coloproctol* 2004;8(Suppl 2):S243–7.

Received: 4 August, 2016

Revised: 12 August, 2016

Accepted: 16 July, 2017

Address for Correspondence:

Dr. Attique-ur-Rehman Jehangiri, Department of Medicine, Ayub Teaching Hospital Abbottabad-Pakistan

Cell: +92 333 503 7335

Email: arjehangiri@hotmail.com