

The role of colonoscopy in assessing bleeding in patients with lower gastrointestinal disorders: Pathogenesis and therapeutic applications for patients referred to Al-Hussein Teaching Hospital during the period 2023-2024

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ABSTRACT

Colon gastrointestinal (GI) bleeding is a frequent cause of hospitalization and is more prevalent in the elderly. Patients with persistent bleeding or significant hemorrhage stigmata need immediate diagnosis and intervention to ensure permanent hemostasis, even though the majority of instances will stop on their own. The main method for diagnosing, assessing risk, and treating some of the most frequent causes of colonic bleeding—including diverticular hemorrhage, which accounts for 30% of cases—is colonoscopy. Surgery and angiography are typically saved for cases of bleeding that are uncontrollable or do not permit sufficient intestinal preparation for a colonoscopy. In patients who arrive with severe hematochezia, we go over the colonoscopic diagnosis, risk assessment, and final therapy of colonic bleeding.

Objective : Al-Hussein Teaching Hospital in Al-Nasiriyah city, Thi-Qar governorate, evaluated lower gastrointestinal bleeding patients in 2023–2024 and the usefulness of colonoscopies. Methods: The investigation was conducted in the endoscope department of an Al-Hussian teaching hospital next to a medical college. the Southern Iraqi Dhi-Qar Governorate from July 2023 and March 2024. Patients with lower git hemorrhage, with or without an alert feature, were assessed for this hospital-based observation research. 150 individuals had lower gastrointestinal endoscopies. Males were 95 (63.3) and females were 55 (36.6), the most prevalent age group between 21 and 60.

Results: Internal hemorrhage (18.6%), poor preparation (12.6%), ulcerative colitis (9.2%), internal pill (8.6%), rectal mass (7.9%), proctitis (4.6%), polyp (3.39%), and rectal ulcer (2%) were among the colonoscopy results, which included normal (28.5%). When an internal hemorrhage is discovered during a colonoscopy, the majority of patients report 10 percent bleeding per rectum, 4 percent stomach discomfort with bleeding per rectum, 2 percent painless bleeding, 2 percent blood per rectum with mucus, 6 percent recurrent bleeding per rectum, and 6 percent intermittent bleeding per rectum.

Conclusion : Between the ages of 21 and 60, lower gut bleeding is widespread, with internal hemorrhoids being the most frequent source of bleeding per rectum. A colonoscope is a device that option for both diagnosis and treatment. Successful results will be obtained by using the right tools, techniques, and knowledge. radiological intervention and When a colonoscopy fails to diagnose or achieve sufficient hemostasis, surgery is the last resort.

Categories: General Surgery, Gastroenterology

Keywords: : colonoscopy, colorectal cancer, hemorrhoids, inflammatory bowel disease, rectal bleeding.

1. INTRODUCTION

For doctors, lower gastrointestinal bleeding (LGIB) remains a challenge. Acute LGIB was previously characterized as: a bleeding that originates from a location distant from the terminal ileum⁽¹⁾. The symptoms of rectal bleeding include frank crimson blood coming out of the anus. Depending on the cause of the bleeding, the appearance might range from minor to severe. Rarely, lower gastrointestinal bleeding manifests as black, tarry stools, or as brilliant red blood per rectum or maroon blood. Blood can occasionally appear as anemia and be invisible. It might be minor or severe, and it can happen with or without pain. Regretfully, it can also occasionally be fatal⁽²⁾. Severe instances might sometimes show up as a heavy, rapid hemorrhage. Identifying the cause of the bleeding is still necessary even if 80% of LGIB will cease on their own. Re bleeding and challenging might happen in 25% of patients. Urgent care is necessary for certain individuals with severe hematochezia in order to prevent additional bleeding and complications. The site of LGIB cannot be determined in 10% of patients, despite improvements in diagnostics⁽³⁾. The differential list should take into account a variety of disease processes, such as congenital, inflammatory, infectious, benign anorectic, and neoplastic illness. Lastly, people of any age may have occult lower gastrointestinal bleeding. Patients with prolonged blood loss have microcytic hypochromic anemia, according to lab tests⁽⁴⁾.

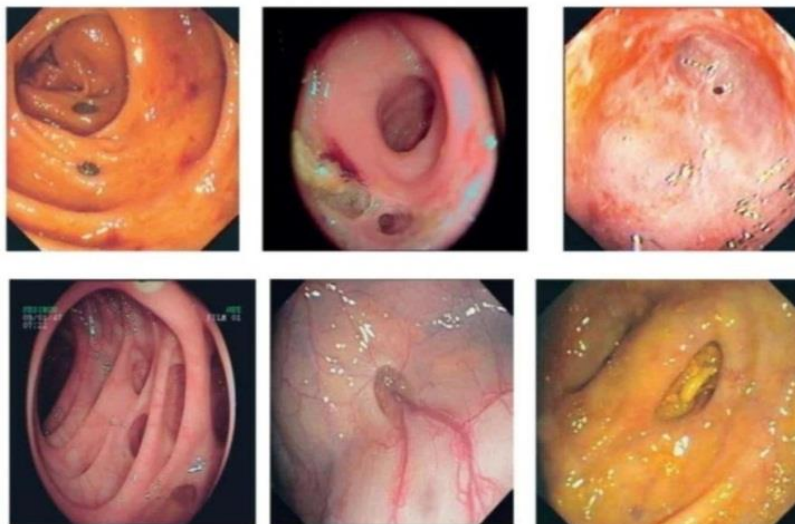
2. MATERIALS AND METHODS :

Study design and setting :

All patients referred to the colonoscopy unit of the Department of Hematology, Gastroenterology, and Histopathology at Al-Hussein Teaching Hospital in Dhi Qar Governorate for a colonoscopy between July 2023 and March 2024 were the subjects of this cross-sectional study. Following permission by the Dhi- Qar University College of Medicine's Scientific Research Ethics Committee in Nasiriyah. here were 150 . hospitals' consent to supply the data, as long as it is done under their supervision and in compliance with hospital policies. A day prior to the examination, Colon Clean (ethyl glycol) was used to prepare all patients for colonoscopy by emptying their colons. Both the night before and the day of the checkup, they received an enema. Pethidine 25 mg and midazolam 3 mg were utilized as the analgesic and anxiolytic, respectively. The examinations were conducted using Olympus colonoscopes (Olympus Corp., Hachioji, Tokyo, JPN). Statistical tests were used to examine the colonoscopy data. Some suspicious lesions were biopsied and sent to a lab for histopathological analysis. Since the histopathology results were not part of the patient's records, they were not analyzed in this investigation. Age and gender independent variable frequencies and percentages were computed, and their relationship to the dependent variable of colonoscopy results was examined.

Histological Assessment

All samples were collected and stored in formalin container and stained with hematoxylin and eosin, viewed under light microscopy by a pathologist. biopsy colonoscopy included normal (28.5%), followed by internal hemorrhage (18.6%), poor preparation (12.6%), ulcerative colitis (9.2%), internal pill (8.6%), rectal mass (7.9%), proctitis (4.6%), polyp (3.39%), and rectal ulcer (2%).



Pictures of colonoscopic findings of the studied sample:

Fig 1. Endoscopic view of entire colon (large intestine).

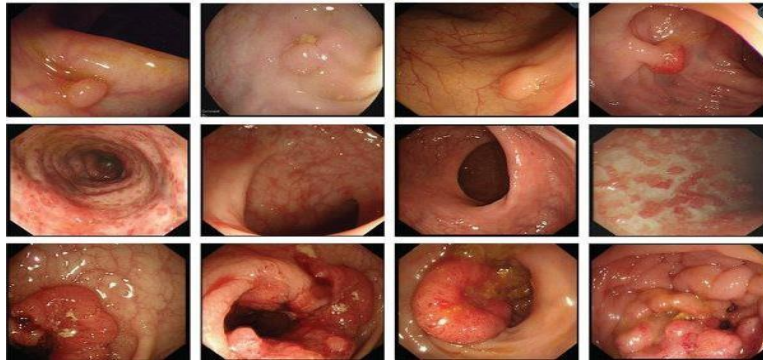


Fig 2. Endoscopic view of large sigmoid prepared patient.

Pictures of histopathological assessment of polyp's biopsies:

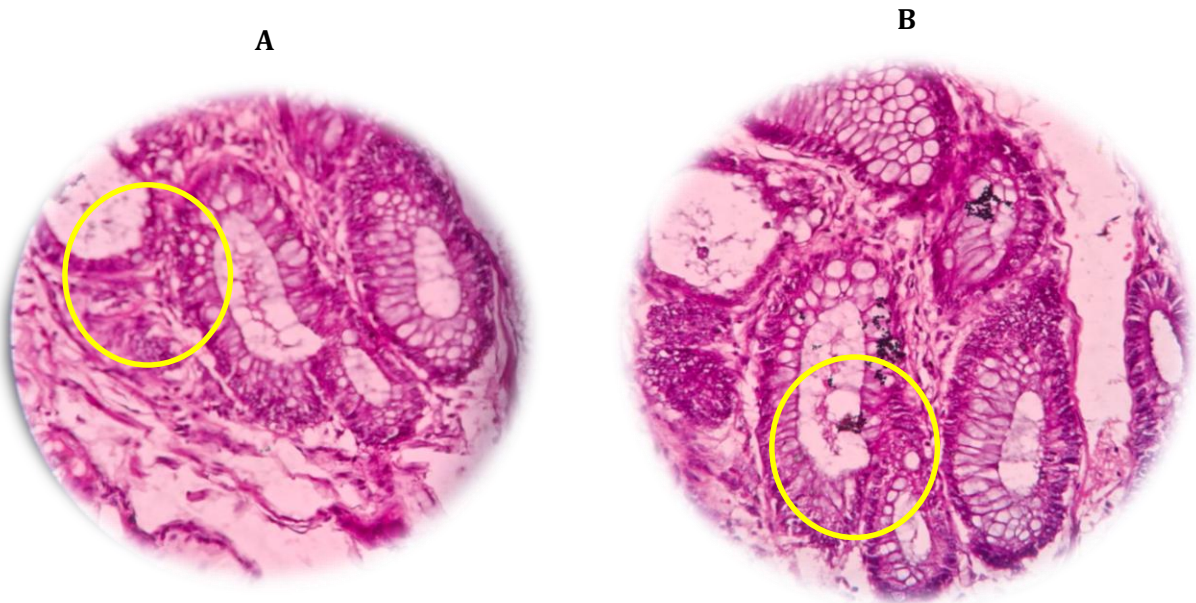


Fig 3. A. Optic microscopic (40x) aspect of small bowel angio-dysplasia :dilate tumors vein in the submucosa, B. Optic microscopic (40x) aspect of colonic angio-dysplasia :large distorted blood vessels in submucosa.

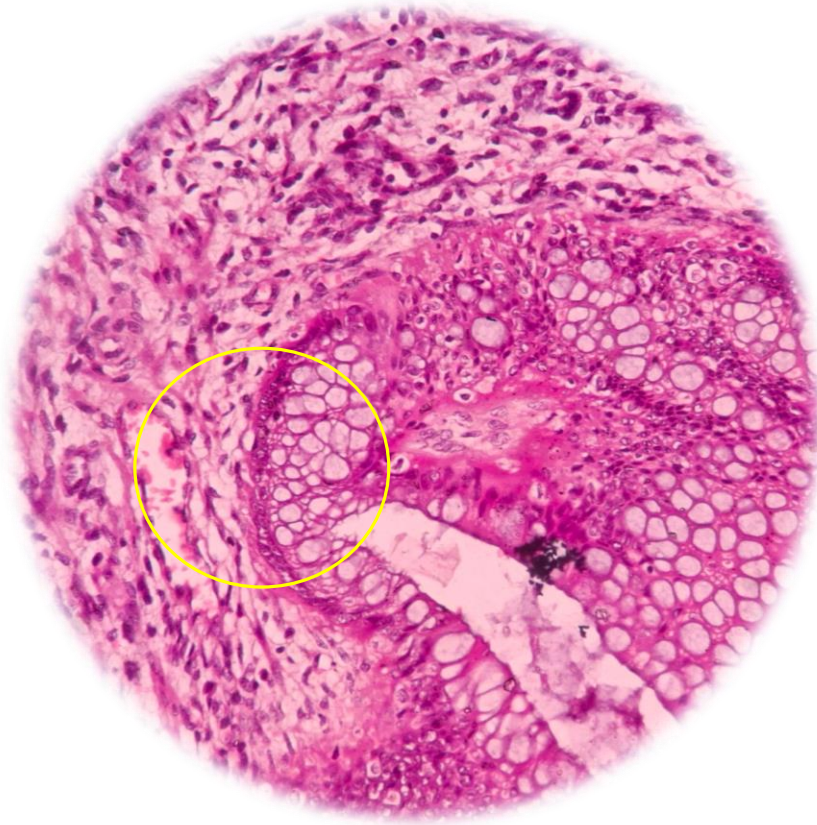


Fig 4. Multiple polypoid angio-dysplasia with obscure overt bleeding.

Statistical analysis:

After editing, coding, tabulation, and installation on a PC, the Statistical Package for Social Science (IBM Corp. Released 2019. The gathered data was processed using IBM SPSS Statistics for Windows, Version 26.0 (Armonk, NY: IBM Corp.). Data were presented, and appropriate. The analysis was carried out according to the type of data found for each parameter.

3. RESULTS :

Of the 150 patients included in this study, 55 (36.6%) were females and 95 (63.3%) were males. The most prevalent age was 21_40 (34.6%), followed by 41_60 (31.3%). The minimum age was 2 years and the maximum age was 85 years. Symptoms included bleeding per rectum in 104 (69.18%), recurrent bleeding per rectum in 21 (13.8%), painless bleeding per rectum in 7 (4.5%), intermittent painless bleeding per rectum in 13 (8.5%), abdominal pain and bleeding per rectum in 1 (0.6%), chronic bleeding per rectum in 1 (0.6%), and 3 known cases of ulcerative colitis(table 1) and (table 2).

Table 1. Sociodemographic data of the studied patients.

Age range	Count	Percentage %
1-20	32	21.3%
21-40	52	34.6%
41-60	47	31.3%
61-80	18	12%
Above 80	1	0.6%
Total	150	100%

Table 2. gender distribution of the studied sample

Gender	percentage	Count of Gender	Gender
Male	63.3%	95	Male
Female	36.6%	55	Female
Total	100.0%	150	Total

The colonoscopy findings included normal (28.5%), followed by internal hemorrhoids (18.6%), poor preparation (12.6%), ulcerative colitis (9.2%), internal pills (8.6%), rectal mass (7.9%), proctitis (4.6%), polyps (3.39%), and rectal ulcers (2%). Patients with a colonoscopy-confirmed internal heamorrhoid report bleeding per rectum (10%), stomach pain and bleeding per rectum (4%), painless bleeding (2%), bleeding per rectum with mucus (2%), recurrent bleeding per rectum (0.6%), and intermittent bleeding per rectum (0.6%). The study results show that the most common presentation of the patient is bleeding per rectum. The results of coloscopy for this patient are normal (13.3%), internal hemorrhage (10%), inadequate preparation (10%), internal pill (6.6%), polyp (3.3%), Ca colon (2.6%), Proctitis (2.6%), ulcerative colitis (2%), rectal ulcer (2%), and rectal mass (1.3%). Our data demonstrate that early colonoscopy is effective in the management of patients with suspected ALGIB. Tool for diagnosis and treatment. Endoscopic treatment seeks to control active bleeding and decrease the danger of Recurrence and death rates are reduced, transfusions are eliminated, and surgery is avoided. Endoscopic bleeding control can shorten hospital stays, lower treatment expenses, and enhance the detection of the source of bleeding. Colonoscopy appears to be one of the most effective therapy choices for diagnosing acute lower GI hemorrhage.

Table 3 . Relation between Sample History and conclusion of studies sample

History	Conclusion										Total
	norm a l	Inadqunt perparatio n	Intern al pile	Internal hemorrhoid s	Procti ti s c	C a c o l o n	Ulcerati ve colitis	Rec t a l mass	polype	Rec t a l ulcer	
Bleeding per rectum	13.3 %	10%	6.6%	10%	2.6%	2.6 %	2%	1.3 %	3.33 %	2%	53.73 %
Abdomen pain	0.0%	2%	0.0%	4%	0.0%	0.6 %	6.6%	0.0 %	0.0%	0.0 %	13.2%
Recurrent BPR	6.6%	0.6%	2%	0.6%	0.0%	0.0 %	0.0%	2.6 %	0.6%	0.0 %	13%
Painless bleeding	2%	0.0%	0.0%	2%	0.0%	0.0 %	0.0%	0.0 %	0.0%	0.0 %	4%
Bleeding with mucus	0.6%	0.0%	0.0%	2%	0.0%	0.0 %	0.0%	0.0 %	0.0%	0.0 %	2.6%
Intermitte d painless	4%	0.0%	0.0%	0.6%	0.0%	0.0 %	0.6%	0.0 %	0.0%	0.0 %	5.2%
Chronic BPR	0.0%	0.0%	0.0%	0.0%	2%	0.6 %	0.0%	4%	0.0%	0.0 %	6.6%
Known case UC+BPR	2%	0.0%	0.0%	0.0%	0.0%	0.0 %	0.0%	0.0 %	0.0%	0.0 %	2%
Total	28.5 %	12.6%	8.6%	18.6%	4.6%	3.8 %	9.2%	7.9 %	3.93 %	2%	100%

Table 4. Sample History per Gender and Age of the studies sample

History	Female						Male					
	1-20	21-40	41-60	61-80	Above 80	Total	1-20	21-40	41-60	61-80	Above 80	Total
Bleeding per rectum	10	10	12	4	0	36	12	24	21	10	1	68
Reccurent BPR	3	1	3	3	0	10	2	7	2	0	0	11
Abdomn pain +BPR	0	0	0	0	0	0	0	0	1	0	0	1
Painless bleeding	0	0	0	0	0	0	1	2	4	0	0	7
Bleeding with mucus	0	0	0	0	0	0	0	0	0	0	0	0
Intermitted bleeding	2	3	1	0	0	6	0	3	3	1	0	7
Chronic BPR	0	1	0	0	0	1	0	0	0	0	0	0
Know case UC	1	0	1	0	0	2	0	0	1	0	0	1
Total	16	15	17	7	0	55	15	36	32	11	1	95

Table 5. Final diagnosis by gender and age of studies sample

History	Female						Male					
	1-20	21-40	41-60	61-80	Above 80	Total	1-20	21-40	41-60	61-80	Above 80	
Bleeding per rectum	6.66%	6.66%	8%	2.6%	0%	23.92%	8%	16%	14%	6.66%	0.6%	
Recurrent BPR	2%	0.6%	2%	2%	0%	6.6%	1.3%	4.6%	1.3%	0%	0%	
Abdomen pain +BPR	0%	0%	0%	0%	0%	0%	0%	0%	0.6%	0%	0%	
Painless bleeding +BPR	0%	0%	0%	0%	0%	0%	0.6%	1.3%	2.6%	0%	0%	
Bleeding with mucus	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	
Intermittent bleeding	1.3%	2%	0.6%	0%	0%	3.9%	0%	2%	2%	0.6%	0%	
Chronic BPR	0%	0.6%	0%	0%	0%	0.6%	0%	0%	0%	0%	0%	
Know case UC+BPR	0.6%	0%	0.6%	0%	0%	1.2%	0%	0%	0.6%	0%	0%	
Total	10.56%	9.86%	11.2%	4.6%	0%	36.6%	9.9%	23.9%	20.1%	7.26%	0.6%	

4. DISCUSSION

This study aimed to assess the frequency of various sources of bleeding in individuals with rectal bleeding and LGIB, as colonoscopy is crucial for evaluating these patients. The patients' average age was 44.9 years, with the majority (n = 228, 57%) older than 40 years. Allen *et al.* Chait's ⁽⁶⁾ study found an increase in LGIB rates with age, which is consistent with the current analysis, which included more patients over 40 years. In the current investigation, the majority of the patients (n = 218, 54.5%) were male. This finding is consistent with Zahmatkeshan *et al.*'s ⁽⁷⁾ investigation on the etiology of LGIB in children, which found that males experienced LGIB more frequently than females (59.2% vs. 40.8%). Other investigations conducted globally have found a higher frequency of LGIB among males ⁽⁸⁾.found that rectal bleeding is common among persons over 40 years old. Lower gastrointestinal bleeding is one of the most common concerns among patients in outpatient clinics. This condition differs from UGIB in terms of epidemiology, prognosis, and therapy. It is usually non-urgent and self-limiting ⁽⁹⁾. This ailment typically resolves on its own and is caused by benign anal disorders like hemorrhoids or fissures ⁽¹⁰⁾. According to the current study, colonoscopy had a diagnostic yield of 85.7%. A research by Chaudhry *et al.* found that colonoscopy was a reliable first test for acute LGIB, similar to our findings ⁽¹¹⁾. LGIB can be caused by a variety of factors, according to studies conducted around the world. Diverticular disease and vascular ectasia are the leading causes of LGIB in Western Europe, particularly in young and middle-aged adults ⁽¹²⁾. The study found hemorrhoids in 37.2% (n = 81) of males and 32.4% (n = 59) of females. The study found that guys under 45 were more likely to have hemorrhoids than those over 45. The former group had normal results and fewer occurrences of IBD, malignancies, polyps, nonspecific colitis, hemorrhoids, and polyps. The colonoscopy results showed a significant difference between the two age groups of males (p = 0.001). Different age groups may have different causes of LGIB, with younger patients having more benign lesions like hemorrhoids and fissures and older patients being more prone to tumors as they age. The study focused on only two public hospitals in Dhi-Qar, Iraq, leaving out instances from commercial and public sectors. Furthermore, the sample may not represent the general population. Additionally, not all colonoscopies were performed by the same physician, which could have impacted the overall assessment. The study's retrospective data collection has limitations, including low-quality documentation and undocumented clinical factors throughout the hospital course. Poor documentation remains a constant

research challenge in our region. The patient records simply included age and gender as demographic information. Additional factors, including BMI, diet, vegetable and fruit consumption, water intake, and history of constipation, may have contributed to the high prevalence of hemorrhoids, particularly among younger patients.

5. CONCLUSION:

Lower gut hemorrhage is prevalent among age 21-60 years, and internal hemorrhoids were the most common source of bleeding per rectum. The colonoscope is an instrument of Choice for diagnosis and treatment. Successful outcomes can be achieved by proper tool selection, technique, and skill. Interventional Radiology and When a colonoscopy fails to diagnose or achieve appropriate hemostasis, surgery is the next best option.

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