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Colonoscopic Findings in Patients with Bleeding Per-rectum in Colonoscopy Center at Rizgary Teaching Hospital, Erbil, Iraq

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ABSTRACT

Background: Rectal bleeding is commonly seen in daily practice. The colonoscopy is an essential diagnostic tool in detecting the various causes of this clinical entity.
Objectives: We aimed to detect the different pathological lesions in patients with rectal bleeding using colonoscopy and to find the correlation between colonoscopic findings and the age and gender of the patients.
Materials and methods: This prospective cross-sectional study was conducted at the center of endoscopy and colonoscopy at Rizgary Teaching Hospital throughout the period from April 2018 to April 2019. Patients with bleeding from the rectum and subjected to colonoscopy of any age and gender were enrolled in the current study. Data regarding the age, gender, duration, family history of colorectal cancer, whether the bleeding was fresh or mixed with stool, spontaneous stoppage of bleeding or not, and the colonoscopic findings were recorded for every participant.
Results: Of 91 patients with rectal bleeding, there were 55 (60.4%) male. The most affected age group was over 40 years old (n = 47, 51.6%). Only 11 (12.1%) of the participants gave a family history of colorectal cancer. Around three-quarters of the cases involved chronic bleeding. The bleeding was fresh in 60 (65.9%) cases. The majority of the bleeding (n = 74, 81.3%) stopped spontaneously. Hemorrhoids (49.45%) were the most common colonoscopic finding in patients with rectal bleeding, followed by no abnormality (18.68%), and the least diverticular disease (2.2%). There was a statistically significant difference between the age of the patient and the cause of rectal bleeding (P-value = 0.042). However, there was no such correlation regarding the patient's gender (P-value = 0.196).
Conclusion: Hemorrhoids were the most common colonoscopic finding in patients with rectal bleeding. The age of the patient can determine the cause of the rectal bleeding.
Keywords: Colonoscopy; Colonoscopic findings; Lower gastrointestinal tract; Bleeding per Rectum; Lower gastrointestinal bleeding.

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INTRODUCTION

Lower gastrointestinal bleeding (LGIB) is a common problem encountered in surgical practice. It constitutes approximately 20% of the total cases of acute gastrointestinal hemorrhage [1]. In the past, LGIB was previously defined as bleeding that extended beyond the Treitz ligament [2]. However, during the time of the double-balloon and capsule endoscopy, there is a distinct form of bleeding that comes from the small bowel [3]. Therefore, it is logical to divide the gastrointestinal hemorrhage into three groups: upper, middle, and lower hemorrhage. LGIB can be acute (two weeks or less) or chronic (three weeks or more). Acute hemorrhage is more dangerous because it might lead to hemodynamically instability and anemia, and in certain conditions, blood transfusion is required. The chronic type manifests as occult blood in the stool, iron deficiency anemia, intermittent attacks of melena, hematochezia, or maroon stools, or visible small amounts of rectal bleeding [4]. Therefore, LGIB can be classified into two forms; occult or revealed hemorrhage [5].

There are different incidences among various nations. This

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might be attributed to the geographical differences, usage of drugs, studied samples, and options of management (endoscopic vs pharmaceutical) [6]. The incidence of LGIB is more frequently seen in men, who also have greater affection of elderly (> 200-fold increase between 20 and 80 years) [4].

Shock is more frequently seen in acute than chronic hemorrhage (35% vs 19%), blood transfusions are more common in acute than chronic (64% vs 36%), and acute type has a significantly higher hemoglobin level than chronic type (84% vs 61%) [7]. Furthermore, LGIB requires fewer blood transfusions in comparison with small intestine bleeding. In the majority of cute LGIB cases (80–85%), the bleeding stops spontaneously. However, the mortality rate due to LGIB ranges from 2–4% [8].

The causes of LGIB may be classified into many groups: the site (e.g. the anal region or diverticulosis); vascular (ischemic or angiodysplasia); inflammatory (infectious, inflammatory bowel disease, radiation-induced, and idiopathic); and tumors (benign or malignant) [9].

There are many investigations for the LGIB which include; proctoscopy, sigmoidoscopy, and colonoscopy, the latter of which is a diagnostic and therapeutic tool in certain conditions. Also, there are new techniques like capsule and double-balloon endoscopy. Barium enema is helpful to visualize the whole colon and rectum. Angiography when done can be helpful only for patients who have active bleeding. ^{11m}Tc-tagged red blood cell scan is a nuclear study best suited for identifying slow hemorrhage sources with rates of 0.1 to 0.4 mL/minute. However; this test is not as accurate as arteriography in identifying the exact location of a bleeding site [9]. The rate of bleeding and the volume of blood loss are important indicators of diagnostic strategy, and the surgeon must determine how to integrate the above investigations to find and control a bleeding lesion quickly and safely.

Because of our limited resources and the availability of the updated methods of investigations in our hospital (Angiography and Scintigraphy), we have undertaken this prospective study to determine the colonoscopic findings for patients with LGIB and their correlation with age and gender.

MATERIALS AND METHODS

This prospective cross-sectional study was conducted at the center for endoscopy and colonoscopy at Rizgary Teaching Hospital, Erbil, Iraq. The current investigation covers the period from April 2018 to April 2019. The study included patients with either short-term LGIB (3 weeks) or intermittent LGIB lasting one year or more. The recruited patients were referred from the West Emergency Hospital, the East Emergency Hospital in Erbil, or from surgical or other departments to our colonoscopy center.

Patients from all age groups of both sexes, patients presenting with visible rectal bleeding as their chief complaint, and patients who wish to participate in the study were included. Patients with rectal bleeding because of acute infectious bloody diarrhea and those who declined to enroll in the current study were excluded, as were those with suspected upper gastrointestinal sources of bleeding (i.e., history of hematemesis or melena). The study was approved by the Iraqi Board for Medical Specializations. Every subject gave informed consent.

A detailed history (age, gender, duration of bleeding, family history of colonic cancer, whether the bleeding was fresh or mixed with stool, and whether the bleeding stopped spontaneously or after conservative measures) and thorough clinical evaluation were carried out for the patients, which included digital rectal examination and proctoscopy. Laboratory investigations (packed cell volume, erythrocyte sedimentation rate, blood groups and Rh, and general stool examination) were conducted for all patients.

All patients were advised to carry out bowel preparation with an oral laxative (polyethylene glycol) with or without rectal enemas. Colonoscopy was performed using an Olympus CF-Q260AL colonoscopy (Tokyo, Japan), with biopsy performed as needed and sent for histopathological analysis.

Local lidocaine gel used for colonoscopy and intravenous midazolam 5 mg was given to patients who needed it (if they could not tolerate the pain). For patients who needed flexible sigmoidoscopy; the colonoscopy device was used in place of the sigmoidoscopy device for the same distance.

The data were entered and analyzed using SPSS (Statistical Package for Social Sciences) version 26. Descriptive statistics were used to calculate numerical data. While, nominal data like gender and colonoscopic findings were presented in frequencies and percentages. Comparisons within the variable or between variables were carried out using the Chi-squared test. A p-value of less than 0.05 was considered a statistically significant difference.

RESULTS

The age of our patients ranged from 16–79 years with a mean age of 42.84 ± 16.049 years. while the median and mode were 41 and 25 year respectively. The majority of the cases were from the age group > 40 (31 for males and 16 for females). There was no significant difference between the age and gender of the patients with rectal bleeding as shown in Figure 1 (P-value = 0.266).

The majority of cases gave no history of colorectal cancer (n = 80, 87.9). Three-quarters of patients with chronic per rectum bleeding. Most of the cases (n = 60, 65.9%) presented

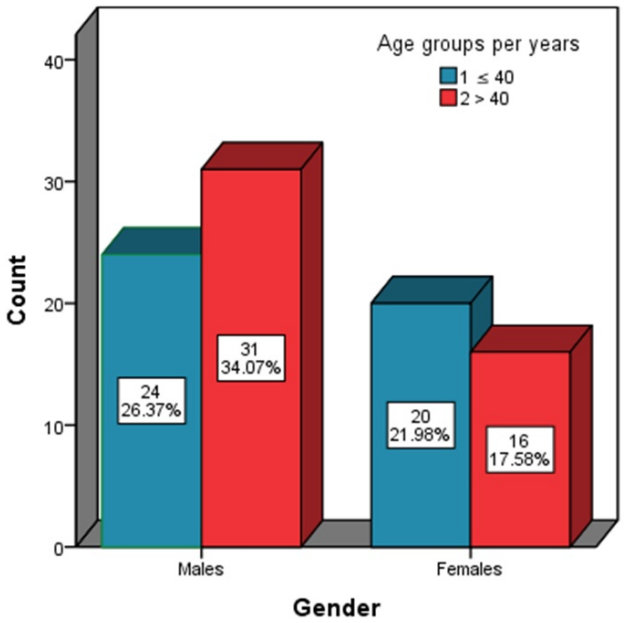

Figure 1. The distribution of the 91 patients with bleeding per rectum according to the age and gender. P-value = 0.266.

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Table 1. The clinical characteristics of the 91 patients with bleeding per rectum.

Variable	Frequency	Percentage
Family history of colorectal cancer		
Positive	11	12.1
Negative	80	87.9
Duration		
Acute	25	27.5
Chronic	66	72.5
Bleeding type		
Fresh	60	65.9
Mixed with stool	31	34.1
Spontaneous stoppage of bleeding		
Yes	74	81.3
No	17	18.7

with fresh bleeding. The majority of the patients (n = 74, 81.3%) with rectal bleeding stopped spontaneously (Table 1).

Hemorrhoids (n = 45, 49.45%) were the most common colonoscopic finding in patients with rectal bleeding, followed by no abnormality (n = 17, 18.68%), and the least diverticular disease (n = 2, 2.2%). There was a significant difference among the various colonoscopic findings (P-value = 0.0001) as shown in Figure 2.

Table 2 showed the distribution of various colonoscopic findings based on age (≤ 40 vs > 40 years). There was a statistically significant difference between the age groups and colonoscopic findings (P-value = 0.042).

Table 3 reported the distribution of various colonoscopic findings regarding gender. There was no statistically significant difference between the gender and colonoscopic findings (P-value = 0.196). Fortunately, there was no complication reported in any patient during or following colonoscopy.

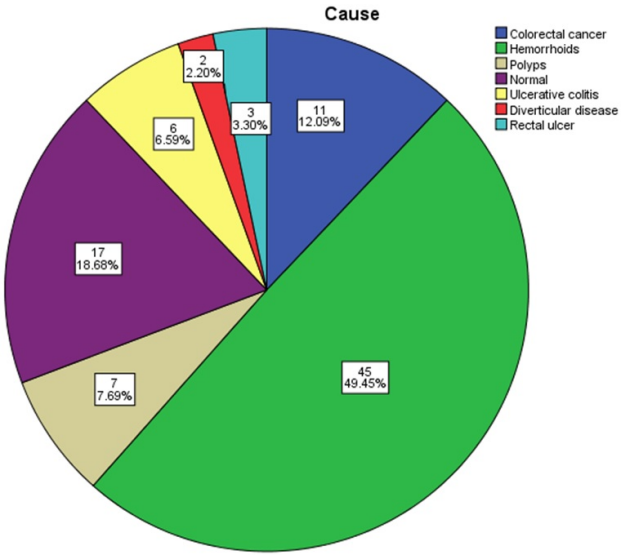

Figure 2. The distribution of the 91 patients with bleeding per rectum according to its causes. P-value = 0.0001.

Table 2. The relationship between the age group and the cause of bleeding per rectum (BPR) in 91 patients. P-value = 0.042.

Cause of the BPR	Age groups per years		Total
	≤ 40	> 40	
	Number (%)	Number (%)	Number (%)
Hemorrhoids	23 (51.1%)	22 (48.9%)	45 (100%)
Normal	12 (70.6%)	5 (29.4%)	17 (100%)
Colorectal cancer	2 (18.2%)	9 (81.8%)	11 (100%)
Polyps	3 (42.9%)	4 (57.1%)	7 (100%)
Ulcerative colitis	4 (66.7%)	2 (33.3%)	6 (100%)
Rectal ulcer	0 (0%)	3 (100%)	3 (100%)
Diverticular disease	0 (0%)	2 (100%)	2 (100%)
Total	44 (48.4%)	47 (51.6%)	91 (100%)

Table 3. The relationship between gender and the cause of bleeding per rectum (BPR) in 91 patients. P-value = 0.196.

Cause of the BPR	Gender		Total
	Male	Female	
	Number (%)	Number (%)	Number (%)
Hemorrhoids	24 (53.3%)	21 (46.7%)	45 (100%)
Normal	9 (52.9%)	8 (47.1%)	17 (100%)
Colorectal cancer	7 (63.6%)	4 (36.4%)	11 (100%)
Polyps	4 (57.1%)	3 (42.9%)	7 (100%)
Ulcerative colitis	6 (100%)	0 (0%)	6 (100%)
Rectal ulcer	3 (100%)	0 (0%)	3 (100%)
Diverticular disease	2 (100%)	0 (0%)	2 (100%)
Total	55 (60.4%)	36 (39.6%)	91 (100%)

DISCUSSION

The incidence rate of LGIB in our population is difficult to be estimate; because we have other teaching government hospitals in Erbil city and many private hospitals, so the cases were distributed to other hospitals. The main outcomes of the current study were that the hemorrhoids were the most common colonoscopic findings and that age might determine the cause of rectal bleeding.

Bleeding per rectum can occur at any age. In our study, the majority of patients are those above 40 years old with a mean age of 42.84 years. While a Chinese study reported a nearly equal number of cases in patients ≤ or over the age of 50 [10]. In a large retrospective study from Japan, it was found that the median age was 74 years [11]. A recent study from the USA, reported that the median age of patients with acute LGIB was 70 years [12]. The variation among the above-mentioned studies might be attributed to the sample size, the design of the study (hospital-based or population-based), the selection of the sample size, and cultural or environmental factors. Around 60% of our patients were male. This observation was similar to other studies [13–15].

Acute bleeding per rectum will cease spontaneously in about 80% of patients [5] and in a study done by Farell et al. [16] the bleeding stopped spontaneously in about 83% of patients, while in another study, bleeding per rectum will cease spontaneously in 85% of patients [17], and in a study done by Boley SJ et al. [18]; the acute bleeding stopped in 90% of the patients spontaneously. Only 17 (18.7%) of the patients in our study had active bleeding stop after conserva-

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tive treatment prior to the endoscopy. The colon filled with blood in cases of acute rectum bleeding. Therefore, it is difficult to detect any lesion making the surgeons reluctant to perform an early colonoscopy in patients with early per rectal bleeding [19]. Actually, the blood acts as a purgative material. Therefore, if one wants to perform a colonoscopy, it is of utmost importance to flush the water on the wall of the bowel through the endoscope to get a proper view of the lesion [19].

In the present study, it was possible to detect the source of bleeding in 74 out of 91 patients. Therefore, the diagnostic yield of our endoscopy is (81.3%) compared with (45%) by Al Qahtani et al. [20], 89% by Starte et al. [21], 74% by Jensen et al. [22], 96% by Jensen et al. [23] 97% by Smith et al. [24], and (87%) by Irvine EJ et al. [25]. Despite the variation among these studies, colonoscopy is considered a useful tool in detecting the cause of rectal bleeding.

The commonest cause of LGIB in our study differs from many other studies. For example the etiology of per rectal bleeding in a study done by Ohyama et al. [26] for 345 patients shows that; ischemic colitis (18%) and antibiotic-associated hemorrhagic colitis (16.5%) are the commonest causes of LGIB. The predominant lesions in the tropical countries were different from those reported in the western countries, Bhargava et al. [27] studied 187 adults and 53 children with bleeding per rectum in India. Non-specific colitis and ulcer (58%), polyps (19%), cancer (10%), haemorrhoids (4%), and tuberculosis (3%), were the most common lesions in adults. Juvenile polyps (77%) and non-specific colitis and ulcers (23%) each were the causes of bleeding in children. The left colon was involved in 92% of these lesions in both adults and children. It should be emphasized that hemorrhoids and fissures are still the most common cause of rectal bleeding [13].

The presence of an anal lesion does not exclude the presence of associated pathology. In one study, a bleeding site in the colon and rectum was eventually proven in 5 out of 95 patients in whom the physician predicted an anal bleeding source based on history and proctoscopy only [28]. However, in our study, there was no such association.

Non-specific proctitis was found in 9 (8%) of patients; it is an inflammatory condition affecting the mucosa and to a lesser extent the submucosa, confined to the distal rectum [29]. The etiology is unknown. The concept that the condition is a mild and limited form of ulcerative colitis (although actual ulceration is often not present) is the most acceptable hypothesis. In the present study, we didnt report any cases of non-specific proctitis.

Malignancy was discovered in 11 (12.09%) of the patients in this study, and its prevalence increased with age. However, our study found two cases of colorectal carcinoma in a 40-year-old age group, which was higher than the study by Acosta et al. (0.03%) [30]. In addition, in our study showed that the frequency of carcinoma was higher in men than women.

Regarding the value of endoscopy in young adults with rectal bleeding, Acosta et al. [30] reviewed 280 patients aged 40 years or younger; 59 (21%) had significant findings. Polyps were present in 25 (8.9%) of the patients. Other findings include colitis (8.6%), diverticular disease (2.1%), angiodysplasia (1.1%), and carcinoma (0.03%). These results suggested that endoscopy in young adults with rectal bleeding is justified; because significant findings may be present in up to 21%. In the present study, there were 44 patients with an age of 40 years or younger; 23 had hemorrhoids, 4 had ulcerative colitis, 3 had polyps, 2 had carcinoma, and 12 were without a diagnosis (negative colonoscopy). For these 12 patients with negative colonoscopic findings, they underwent upper gastrointestinal endoscopy, which was also negative. It is important to exclude the upper gastrointestinal tract as the source of bleeding, which is responsible for about 10% of cases with acute severe rectal bleeding [23].

The small sample size, single center, and short duration of the study are considered the limitations of the current investigation. Due to the above-mentioned limitations, the results of the study cannot be generalized.

CONCLUSION

The majority of the cases involved males. The age group most affected was over 40 years. Only 11 participants gave a family history of colorectal cancer. Around three-quarters of the cases involved chronic bleeding. The bleeding was fresh in about 2/3 of the cases. The majority of the bleeding stopped spontaneously. Hemorrhoids were the most common colonoscopic finding in patients with rectal bleeding. The age of the patient can determine the cause of the rectal bleeding.

ETHICAL DECLARATIONS

Acknoweldgements

None.

Ethics Approval and Consent to Participate

Written approval had been gained from the Iraqi Board for Medical Specializations, Iraq. Study data/information was used for the research purpose only. Informed consents from every participant was taken.

Consent for Publication

Not applicable (no individual personal data included).

Availability of Data and Material

The datasets generated during and/or analysed during the current study are available from the corresponding author on reasonable request.

Competing Interests

The authors declare that there is no conflict of interest to disclose.

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Authors' Contributions

All the authors listed have made a substantial, direct, and intellectual contribution to the work, and approved it for publication.

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