

FREQUENCY OF COMMON CAUSES OF BLEEDING PER RECTUM AMONG PATIENTS PRESENTING TO SURGICAL OPD AT A TERTIARY CARE HOSPITAL

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ABSTRACT

OBJECTIVES

This study aimed to estimate the frequency and 95% confidence intervals of harmonised, clinician-recorded etiological categories among adults presenting with bleeding per rectum to the surgical outpatient department of a tertiary-care hospital.

METHODOLOGY

This descriptive cross-sectional study was conducted at Hayatabad Medical Complex, Peshawar, from September 2022 to March 2024. The patients were consecutively sampled during a fixed period of six months, with an age range of 20-60 years (all patients within the age range were included in the study, n = 164). Laboratory testing and imaging were used selectively. Since inflammatory bowel disease, ulcerative colitis and colitis are conceptually similar, post hoc (after the data were collected), these three mutually exclusive source codes were pooled together into inflammatory colitis.

RESULTS

The mean age was 38.7 ± 12.8 years; 107 (65.2%) patients were male. Inflammatory colitis was recorded in 83 patients (50.6%; 95% CI, 43.0%-58.2%), hemorrhoids in 54 (32.9%; 95% CI, 26.2%-40.4%), abdominal tuberculosis in 17 (10.4%; 95% CI, 6.6%-16.0%), and diverticular disease in 10 (6.1%; 95% CI, 3.3%-10.9%). Etiological distribution was not significantly different in the various age groups (Monte Carlo exact p = 0.695; Cramer's V = 0.116). Complete colon evaluation was not always done, and colorectal carcinoma was not detected via the selective diagnostic pathway.

CONCLUSION

The most common categories were inflammatory colitis and hemorrhoids. The combined inflammatory estimate should not be interpreted as the prevalence of confirmed inflammatory bowel disease, and the selective diagnostic pathway does not exclude undetected proximal colonic disease.

KEYWORDS: Lower Gastrointestinal Bleeding; Bleeding Per Rectum; Hemorrhoids; Inflammatory Colitis; Abdominal Tuberculosis; Proctoscopy

INTRODUCTION

Bleeding per rectum (BPR) is defined as the passage of blood out of the anus, and can be a symptom of either inflammatory or neoplastic colorectal disease. Its clinical significance depends on associated symptoms, age, examination findings, and the extent of evaluation.¹ While most presentations are not malignant, colitis and colorectal neoplasia are important conditions to consider, especially when accompanied by changes in bowel habit, weight loss, anemia or a palpable mass.² The range of etiological factors reported is dependent on clinical context and population.^{3,4} In population-based studies in the West, diverticular disease and ischemic colitis have been the more common causes of acute lower gastrointestinal bleeding (ALGIB), while in Pakistan and other South Asian settings, haemorrhoids and other anorectal disorders have been reported as more common causes of ALGIB in patients undergoing colonoscopy or attending surgical outpatient

departments.^{5,6} The estimates are not directly comparable as they are based on different populations, diagnostic routes and category definitions. The size of the investigation also influences the detection of causes. Distal anorectal lesions can be identified by proctoscopy, but the proximal colon cannot. For any suspected inflammatory, infective or neoplastic colonic disorder, colonoscopy is key, and when needed, biopsy or imaging is performed.^{7,8} Consequently, studies using selective rather than uniform colonoscopy should describe their diagnostic pathway explicitly and avoid treating an unobserved diagnosis as definitively absent. Published Pakistani data have been obtained from colonoscopy cohorts from other centers and, as far as we know, the frequency distribution of the clinician-recorded causes of consecutive surgical outpatients at Hayatabad Medical Complex, Peshawar, has not been reported using a transparent harmonised classification.⁹ Therefore, the local distribution and the impact of the diagnostic pathway of the institution were unknown.

Thus, the purpose of this study was to provide an estimate of the prevalence and 95% confidence intervals of the harmonised etiological categories of adults presenting for BPR in the surgical outpatient department.

METHODOLOGY

This descriptive cross-sectional study was conducted in the Department of Surgery, Hayatabad Medical Complex, Peshawar, with ethical approval (Ref No. 781/HMC/HR, dated 02-09-2021), from September 2022 to March 2024. All eligible consenting patients presenting during this fixed period were enrolled by non-probability consecutive sampling, yielding 164 participants. Due to the fixed-period consecutive census, a formal a priori probability-based sample-size calculation is not reported. With $n = 164$, the maximum two-sided 95% confidence-interval half-width for a proportion near 50% was approximately 7.7 percentage points, representing the achieved precision. Any patient, of either sex, between 20 and 60 years of age, with new onset of rectal bleeding, blood mixed with stool, blood-stained stool, or passage of clots suggesting lower gastrointestinal bleeding, was included. Patients requiring emergency admission for hemodynamic instability, those with a history suggestive of upper gastrointestinal bleeding, previously diagnosed colorectal malignancy, history of bleeding due to anticoagulant use, and those who did not consent to participate were excluded. Following enrollment, each patient received a detailed clinical history, including age, gender, symptom duration, bloody diarrhea volume and pattern, pain during defecation, bowel habits change, constipation, weight loss, prolapse, family history of colorectal disease, and past anorectal surgeries. In all cases, a full physical examination was done, including general physical exam, abdominal exam, and digital rectal exam. All 164 subjects (100%) had a digital rectal examination and proctoscopy to evaluate the anal canal and palpable rectal mucosa. If compatible hemorrhoidal cushions were noted during examination or proctoscopy, and these were deemed to be the source of bleeding, then the haemorrhoids were recorded. Selective additional investigations were done. When there was still a suspicion of distal colonic/rectal pathology, sigmoidoscopy was used. Persistent or unexplained bleeding, altered bowel habit, weight loss, anaemia, family history, older age or clinical suspicion of proximal colonic disease were all considered indications for colonoscopy. Biopsy was used if there was abnormal mucosa or a lesion which needed histological analysis. Laboratory tests, stool analysis and imaging were ordered based on the suspected diagnosis. Diverticular disease was documented either endoscopically or on imaging. The inflammatory and abdominal-tuberculosis labels were assigned by the final diagnosis of the treating

clinician, based on the clinical, endoscopic, histopathological, microbiological, laboratory and imaging evidence available. The provisional procedure counts were: sigmoidoscopy 60 (36.6%), colonoscopy 40 (24.4%), and biopsy 30 (18.3%). There was no patient-level evidence supporting each diagnosis available, and diagnostic criteria were not uniform, so diagnoses could not be independently re-adjudicated.

Table 1A: Investigations Used in the Diagnostic Pathway (n = 164)

Investigation	Number (%age)	Role / Clinical Indication
Proctoscopy	164 (100%)	Routine assessment of the anal canal and visible rectal mucosa in every participant.
Sigmoidoscopy	60 (36.6%)	Selective use when distal colonic or rectal pathology remained suspected beyond proctoscopy.
Colonoscopy	40 (24.4%)	Selective use for persistent or unexplained bleeding, altered bowel habit, weight loss, anemia, family history, older age, or suspected proximal disease.
Biopsy	30 (18.3%)	Selective use for abnormal mucosa or a lesion requiring histopathological characterisation.

Note: Proctoscopy was documented for all 164 participants

SPSS version 26 was used to analyse the data. Age is presented as mean $\pm$ SD. The frequencies and percentages were reported for gender and etiological categories, and the principal etiological proportions were reported as Wilson 95% confidence intervals. Each participant was assigned to one of six mutually exclusive primary diagnostic codes ($54 + 39 + 29 + 17 + 15 + 10 = 164$), and the frequencies for these codes totaled the entire sample. Therefore, in the present study, there were 29 ulcerative colitis records, which did not exist within the 39 records labeled inflammatory bowel disease. The three inflammatory source codes (inflammatory bowel disease, ulcerative colitis, and colitis) were not clinically mutually exclusive, and so the three inflammatory source codes were united post hoc as inflammatory colitis. The term inflammatory bowel disease was not translated back to Crohn's disease. Since a few cell counts were less than five, Monte Carlo exact test of independence with fixed margins and 100,000 sampled tables were performed to compare age-stratified frequencies. Cramer's V was reported as the effect-size measure, and the estimated p-value was given with its 99% Monte Carlo confidence interval. A two-sided p-value <0.05 was considered statistically significant. Etiological testing was not carried out separately by gender due to not having any gender-specific counts for the full harmonised inflammatory category.

RESULTS

The participants had a mean age of 38.7 ± 12.8 years, with an observed age range of 20–60 years. Most were aged 20–30 years (38.4%), and 107 (65.2%) were male.

Table 1: Demographic Characteristics of the Study Population (n = 164)

Variable	Frequency (n)	%age
Age groups (years)		
20–30	63	38.4
30–40	30	18.3
40–50	26	15.9
50–60	45	27.4
Gender		
Male	107	65.2
Female	57	34.8

The most common harmonised etiological category was inflammatory colitis (50.6%) followed by haemorrhoids (32.9%), abdominal tuberculosis (10.4%) and diverticular disease (6.1%). There was no significant difference in etiological distribution by age group (Monte Carlo exact $p = 0.695$; Cramer's $V = 0.116$). No cases of colorectal carcinoma were identified, but it can not be ruled out as not occurring, since colonoscopy was not carried out uniformly. (Table-2)

Table 2: Frequency and Age-Wise Distribution of Harmonised Etiological Categories

Cause	Overall n(%)	20-30 years n(%)	30-40 years n(%)	40-50 years n(%)	50-60 years n(%)
Inflammatory colitis	83 (50.6)	32 (50.8)	16 (53.3)	17 (65.4)	18 (40.0)
Hemorrhoids	54 (32.9)	20 (31.7)	09 (30.0)	07 (26.9)	18 (40.0)
Abdominal tuberculosis	17 (10.4)	07 (11.1)	02 (6.7)	02 (7.7)	06 (13.3)
Diverticular disease	10 (6.1)	04 (6.3)	03 (10.0)	00 (0.0)	03 (6.7)

Inflammatory colitis is a combination of three different source codes: inflammatory bowel disease ($n = 39$), ulcerative colitis ($n = 29$), colitis ($n = 15$). Only one primary source code was assigned to each patient; therefore, the 29 patients whose source codes were ulcerative colitis did not appear in the 39 cases labeled as inflammatory bowel disease. Unfortunately, the post hoc combination of the terms corrects conceptual confusion in the terminology, but it is not a diagnosis of inflammatory bowel disease confirmed by uniformity.

DISCUSSION

The most common harmonised category in this surgical outpatient cohort was inflammatory colitis (50.6%; 95% CI, 43.0%-58.2%), followed by haemorrhoids (32.9%; 95% CI, 26.2%-40.4%), abdominal tuberculosis (10.4%) and diverticular disease (6.1%). The prevalence of haemorrhoids in this study is comparable in general terms with the other parts of the region. In Pakistan,

Nayab et al identified haemorrhoids in 28.8% of patients who underwent colonoscopy for lower gastrointestinal bleeding, whereas in Bangladesh Mahmud et al detected haemorrhoids in 34.6% of patients presenting with rectal bleeding to a surgical outpatient department.^{10,11} Some variations in results between studies may be due to the different age distributions, referral patterns, inclusion criteria and the level of endoscopic evaluation.^{12,13} The category of combined inflammatory colitis is a special case in which caution must be used. Ulcerative colitis is a type of inflammatory bowel disease, while the term "colitis" is used in the case of inflammatory, infectious, ischemic, or other causes.¹⁴ These were not nested fields in the source proforma, and no patient was counted more than once; however, the codes lacked sufficient diagnostic detail to differentiate the labels reliably, or did not even have standardised definitions. They can be combined to avoid any misleading comparative description of the disease, but the combined figure of 50.6% should not be described as the proportion/prevalence of confirmed inflammatory bowel disease or used to infer the proportions of ulcerative colitis and Crohn's disease. Abdominal tuberculosis was recorded in 10.4% of patients. Gastrointestinal TB is an important differential diagnosis in endemic areas, and the clinical and endoscopic features may mimic those of Crohn's disease and other inflammatory diseases. Histopathological and microbiological findings, combined with endoscopic and radiological evidence, increase the confidence level of a diagnosis.^{15,16} The proportion of recorded diagnoses due to diverticular disease was 6.1% in our study. Contemporary reviews identify diverticular bleeding as a leading cause of acute lower gastrointestinal bleeding, particularly in older populations in higher-income settings.^{17,18} This study was limited by the fact that it was conducted with a younger, stable outpatient population and was not performed with standardised colonoscopy, which is why it cannot be directly compared with other studies. In this study, the frequencies were age-stratified, and a Monte Carlo exact test was used because of the violation of the assumptions of a conventional Pearson chi-square approximation. The age group to etiological category association was not statistically significant ($p = 0.695$), and the observed association was small (Cramer's $V = 0.116$). Such exploratory results should be considered with caution, given that the study's primary objective was not to compare subgroups. The original gender-specific comparison for ulcerative colitis was not included. Once the overlapping inflammatory labels were harmonised, patient-level gender counts for the complete combined category were unavailable. If only one component was ambiguously classified, then the test would be selective and would not reflect the new mutually exclusive outcome. None of the final diagnoses recorded resulted in a diagnosis of colorectal carcinoma.

Rectal bleeding may indicate colorectal cancer, particularly when persistent or accompanied by altered bowel habits, abdominal pain, diarrhoea or iron-deficiency anaemia.¹⁹ The findings of our study may help identify priorities for future studies that use standardised case definitions and uniform endoscopic pathways. A strength of this study was that the outpatient population was defined consecutively and digital rectal examination (DRE) and proctoscopy were performed in each of the 164 participants. Further harmonisation of the 3 inflammatory codes with similar terminology, after the interviews had been conducted, helps to strengthen the internal interpretation of the reported frequencies, as each participant had only one primary source code.

LIMITATIONS

Certain limitations need to be addressed. It was a non-probability consecutive sampling of a single-center, fixed-period study. No formal a priori calculation of sample size was documented, and the number of patients (N = 164) was the maximum number of eligible patients who consented to participate in the study, with a maximum 95% margin of error of about 7.7 percentage points about a proportion near 50%. Patient-level diagnostic data and standardised criteria for all etiological groups were also not available. Synchronous proximal lesions cannot be ruled out by distal lesions seen at proctoscopy. The inflammatory codes were overlapping in their terms, making it impossible to make inferences both by disease and by gender. Finally, failure to identify colorectal carcinoma may reflect incomplete proximal evaluation, the younger outpatient cohort, referral patterns, or sampling variation. Future multicenter studies should be properly planned and powered based on a prespecified sample size calculation, mutually exclusive diagnostic definitions, and standardised documentation of complete endoscopic and histopathological assessment.

CONCLUSIONS

The most common harmonised etiological categories in consecutive surgical outpatients during the study period were inflammatory colitis and hemorrhoids. No statistically significant association was observed between age group and etiological category. The combined inflammatory estimate should not be interpreted as the prevalence of confirmed inflammatory bowel disease, and failure to identify colorectal carcinoma should not be interpreted as its true absence because complete colonic evaluation was not uniform.

CONFLICT OF INTEREST: None

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The authors accept responsibility for all aspects of the work and will ensure that any concerns regarding the accuracy or integrity of any part are properly investigated and resolved.



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