

FREQUENCY OF RECTAL CANCER IN PATIENTS HAVING RECTAL BLEEDING AS PRESENTING SYMPTOM PRESENTING AT SURGICAL OPD OF AZIZ BHATTI SHAHEED TEACHING HOSPITAL GUJRAT

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ABSTRACT

Objective: To determine the frequency of rectal cancer among patients presenting with rectal bleeding at the surgical outpatient department of Aziz Bhatti Shaheed Teaching Hospital, Gujrat.

Methods: This cross-sectional study was conducted in the Department of Surgery, Aziz Bhatti Shaheed Teaching Hospital, Gujrat from April to July, 2026. A total of 140 adult patients (aged 25–80 years) presenting with fresh, painless rectal bleeding were enrolled using consecutive sampling, excluding benign anal conditions, prior pelvic irradiation, and rectal surgery. All participants underwent digital rectal examination and colonoscopy with incisional biopsy of suspicious lesions for histopathological confirmation. Positive cases underwent contrast-enhanced CT of the abdomen and pelvis for TNM staging. Data were analyzed using SPSS version 26. Categorical variables were evaluated using the chi-square test, with $p \leq 0.05$ considered statistically significant.

Results: Among 140 patients, 18 were diagnosed with histopathologically confirmed rectal carcinoma, yielding an overall frequency of 12.9%. Malignancy was more frequent in males (16.9% vs. 5.9%; $p = 0.109$) and patients aged ≥ 50 years (16.5% vs. 6.1%; $p = 0.138$), though these differences did not reach statistical significance. Smokers also exhibited a higher rate of carcinoma compared to non-smokers (20.8% vs. 8.7%; $p = 0.077$). Notably, a prior history of rectal bleeding was significantly associated with a diagnosis of rectal cancer (26.4% vs. 4.6%; $p = 0.001$).

Conclusion: Rectal cancer was identified in 12.9% of patients presenting with rectal bleeding. A recurrent history of bleeding represents a critical red-flag symptom that strongly warrants prioritized, prompt colonoscopic evaluation in surgical outpatient settings.

INTRODUCTION

Colorectal carcinoma is third most common cancer affecting approximately 1.8 million people worldwide and second leading cause of cancer related deaths in world with approximated 881,000 deaths in year ^{1, 2}. Burden of this malignancy is largely influenced by environmental, dietary and various genetic factors particularly abnormalities in TP53 gene, MUTYH gene, STK11 gene, PTEN gene, BMPR1A and SMAD4 genes ³. Although, colorectal carcinoma is considered as disease of elderly population, yet, in recent epidemiological studies it has been found that its incidence, on one hand, is decreasing in elderly population over 50 years of age while it is increasing in younger population ⁴. For this reason it is essential to screen patients who have high risk clinical presentation. In older age, various guidelines suggest that presence of unexplained anemia necessitates colonoscopic screening of patients for colorectal carcinoma. However, in younger population, bleeding per rectum is considered as one of cardinal high risk symptom of colorectal cancer ⁵.

When it comes to frequency of rectal bleeding as presenting symptom in patients who are diagnosed with rectal cancer, results from previous studies show very high degree of variability. In this instance, study reported that in 86.67% of patients who were diagnosed with rectal cancer, rectal bleeding was presenting symptom ⁶. In another study, this frequency of rectal bleeding as presenting symptom of rectal cancer was 76.78% ⁷. Contrarily, study reported much lower frequency of rectal bleeding as presenting symptom of rectal cancer at 41.3% ⁸. Similarly, another study found this frequency of rectal bleeding as presenting symptom to be 50.8% ⁹. In contrast, one study reported that among 29 patients of rectal cancer, presenting symptom of rectal bleeding occurred only in 8 (27.58%) of patients ¹⁰.

In this instance, study reported that frequency of rectal cancer in patients having rectal bleeding as presenting symptom was 7.7%¹¹. In another study, it was reported that frequency of rectal cancer in patients having rectal

bleeding as presenting symptom at tertiary care hospital was 7.98%¹². Similarly, in one study, slightly higher frequency of rectal cancer was observed in patients having rectal bleeding as presenting symptom and was reported at 8.3%¹³.

Based on some studies ^{6, 7}, rectal bleeding appears to be cardinal symptom presence of which should prompt physicians to proceed with invasive and painful diagnostic screening for rectal carcinoma. On other hand, other studies ¹⁰ show that rectal bleeding is not frequent presenting symptom of rectal cancer thus unnecessary invasive and painful screening procedure may be deferred in such cases. To address this high degree of variability, I am conducting this study with aim of determining frequency of rectal bleeding as presenting symptom in patients who are diagnosed with rectal cancer in our local population.

MATERIAL AND METHODS

This Study was Cross sectional study; at Department of surgery, Nawaz Sharif Medical College/ABSTH, Gujrat; Study duration was from April to July, 2026. Sampling technique was Non-probability consecutive sampling. Objective of this study was to determine frequency of rectal cancer in patients having rectal bleeding as presenting symptom, presenting at surgical outdoor department of Aziz Bhatti Shaheed teaching hospital, Gujrat.

Sample selection: Inclusion criteria: all patients of age 25-80 years of either gender presenting with rectal bleeding (as per operational definition) were enrolled.

Exclusion criteria: Following cases were excluded: Anal fissure, diagnosed by consultant surgeon by performing anal examination and visualizing fissure; History of hemorrhoids, assessed by reviewing previous medical records; History of radiation therapy to gut, assessed by reviewing previous medical records; History of anal intercourse, assessed by detailed personal and sexual history; History of surgical manipulation of anal canal or rectum.

Enrolled Patients were diagnosed to have rectal cancer by performing digital rectal examination followed by colonoscopy under sedation during which rectal tissue incisional biopsy specimen were taken and sent to histopathology laboratory where consultant pathologist made diagnosis of rectal cancer. In addition to diagnosis, CT abdomen and pelvis with intravenous contrast was performed to stage rectal cancer as per TNM classification ; Staging were performed by consultant radiologist. Rectal bleeding: was defined as presence of fresh bleeding per rectum without any anal pain at time of presentation.

Sample size was calculated using WHO sample size calculator by assuming: Confidence level = 95, Absolute precision = 4.5%; Anticipated frequency of rectal cancer in patients with rectal bleeding as presenting symptom = 7% ¹¹ Calculated sample size is 135. After taking approval from ethical committee and CPSP, all patients meeting inclusion criteria who gave informed consent were included in study. Baseline characteristics including age (in years), gender, duration of rectal bleeding (in days), previous episode of rectal bleeding, and smoking history were documented. All these patients will then undergo digital rectal examination followed by colonoscopy under sedation during which rectal tissue incisional biopsy specimen were taken by consultant surgeon that were sent to histopathology laboratory where tissue diagnosis of rectal cancer were made by consultant pathologist.

In addition, after confirmation of diagnosis all patients having rectal carcinoma will undergo CT abdomen and pelvis with IV contrast which were evaluated by consultant radiologist to get TNM stage of rectal carcinoma. In case of diagnosis of rectal cancer, appropriate care under consultant surgeon and oncologist were ensured for all patients. All data were recorded in predesigned proforma. Patient confidentiality were maintained at all times by not mentioning personal identification parameters like name, address, etc. on data collection proforma.

Data was analyzed using SPSS 26; numeric variables (age and duration of bleeding) were expressed as mean $\pm$ standard deviation. categorical variables (gender, smoking history, previous episode of rectal bleeding and presence of rectal carcinoma) were represented as frequency and percentages. Data were stratified by age, gender, duration of rectal bleeding, smoking history and previous history of rectal bleeding to deal with effect modifiers. Post-stratification chi-square test were used as test of significance. p-value of ≤ 0.05 were considered statistically significant.

RESULTS

A total of 140 patients presenting with rectal bleeding to the Surgical OPD were enrolled during the study period. Baseline characteristics and the stratified frequency of histopathologically confirmed rectal carcinoma are summarized in Table 1. The overall frequency of rectal carcinoma in this cohort falls toward the upper end of the range reported in comparable South Asian tertiary-care series, and comfortably exceeds the anticipated frequency used to power the study, suggesting our local population may carry a somewhat heavier burden of malignancy among patients presenting with this symptom than some published estimates assumed.

Male sex and age above 50 years were both associated with a numerically higher rate of malignancy, consistent with the epidemiological pattern described in the introduction, where colorectal cancer has traditionally been considered a disease of older adults with a male predominance. Neither association reached conventional

statistical significance in this sample, most likely reflecting the limited number of confirmed cancer cases rather than an absence of true effect; a larger or multi-center cohort would be better powered to confirm these trends.

Smoking history showed a similar direction of association that approached, but did not cross, the significance threshold, in keeping with its recognized but modest role as a colorectal cancer risk factor. A prior episode of rectal bleeding, by contrast, was strongly and significantly associated with a cancer diagnosis, which fits the clinical pattern of a persistent or recurring symptom being more concerning than an isolated bleeding episode, and supports the rationale for prioritizing endoscopic evaluation in patients who report this history rather than treating all rectal bleeding as low risk.

Taken together, these findings support using a combination of demographic and symptom-history red flags, rather than the presence of rectal bleeding alone, to triage patients toward colonoscopy, and they broadly align with the higher-frequency end of the previously published literature cited in the introduction rather than the lower estimates.

DISCUSSION

In this cross-sectional study of 140 patients presenting with rectal bleeding at the Surgical OPD of Aziz Bhatti Shaheed Teaching Hospital, Gujrat, rectal carcinoma was confirmed histopathologically in 12.9% of patients. This frequency is appreciably higher than the figure used to power the study, and higher than several previously reported estimates from comparable tertiary-care settings. It sits closer to, and somewhat above, the range described in South Asian populations and reinforces the view that rectal bleeding, even outside the classical high-risk demographic of frank anemia or weight loss, warrants a low threshold for endoscopic evaluation in a resource-limited surgical outpatient setting.

Table 1. Baseline characteristics and frequency of rectal carcinoma

Variable	Total n	n (%) of total	Rectal CA, n	Freq. in group (%)	p-value*
Overall sample	140	100.0	18	12.9	—
Gender					
Male	89	63.6	15	16.9	
Female	51	36.4	3	5.9	0.109
Age group					
≥ 50 years	91	65.0	15	16.5	
< 50 years	49	35.0	3	6.1	0.138
Smoking history					
Smoker	48	34.3	10	20.8	
Non-smoker	92	65.7	8	8.7	0.077
Previous episode of rectal bleeding					
Yes	53	37.9	14	26.4	
No	87	62.1	4	4.6	0.001

*Chi-square test, post-stratification.

Our observed frequency of rectal carcinoma is considerably higher than the 7.7% reported by Ghaffar et al.¹¹ among patients presenting with bleeding per rectum at a tertiary hospital in Lahore, the 7.98% reported by Ali et al.¹² among patients undergoing colonoscopy for lower gastrointestinal bleeding, and the 8.3% reported by Mahmud et al.¹³ in a similar outpatient cohort in Bangladesh. Several explanations are plausible. First, our sample, though calculated using a broadly similar anticipated frequency, was drawn consecutively from a single referral hospital, which may concentrate a heavier burden of advanced or symptomatic disease relative to primary-care-based cohorts. Second, differences in how rectal bleeding was operationally defined, and in exclusion criteria applied for benign anorectal pathology such as hemorrhoids and fissures, likely shifted the denominator toward a higher pre-test probability of malignancy in our cohort. Third, with only 18 confirmed cancers, our point estimate carries wide sampling variability, and the true population frequency could plausibly still overlap with the lower published figures.

A separate but related body of literature has approached this relationship from the opposite direction, asking what proportion of patients already diagnosed with rectal cancer report bleeding as their presenting complaint, rather than what proportion of bleeding patients turn out to have cancer. These estimates range widely, from 86.67% and 76.78% in the series reported by Nisar et al.⁶ and Trivedi et al.⁷ respectively, down to 41.3% in the Pakistani cohort described by Pirzada et al.⁸, 50.8% in the early-onset colorectal cancer series of Sandhu et al.⁹, and as low as 27.58% in the primary-care-based prospective cohort of Høltedahl et al.¹⁰ Although these two framings are not numerically interchangeable, both converge on the same clinical message: bleeding per rectum is neither a universally sensitive nor a universally specific marker of rectal cancer, and its diagnostic weight depends heavily on the population and care setting in which it is assessed. Our findings, generated in a surgical OPD rather than a primary-care clinic, likely sit toward the higher-risk end of that spectrum.

The demographic pattern observed in this cohort, with rectal carcinoma occurring more frequently among

patients aged 50 years and above and among males, is consistent with the traditional epidemiology of colorectal cancer described by Siegel et al.² and with global incidence patterns summarized by Baidoun et al.¹ At the same time, the wider literature has documented a rising incidence of colorectal cancer in younger patients even as incidence falls in older cohorts, a trend highlighted by Clark et al.⁴ and reflected in the red-flag symptom framework proposed by Fritz et al.⁵ for early-onset disease. Three of our eighteen cancer cases occurred in patients under 50 years, a reminder that age-based risk stratification alone would have missed a clinically meaningful minority, and that bleeding in younger patients should not be dismissed purely on the basis of age.

The higher, though not statistically significant, frequency of smoking history among cancer cases in our cohort is broadly consistent with the recognized, if modest, contribution of environmental and lifestyle exposures to colorectal carcinogenesis, alongside the genetic pathways described by Rebutzi et al.³, including alterations in TP53, MUTYH, and related tumor-suppressor and mismatch-repair genes. The absence of statistical significance for both age and smoking associations in our data most likely reflects limited power given the small number of confirmed cancers, rather than a true absence of effect, and should be interpreted cautiously rather than as evidence against these established risk relationships.

The strongest and most clinically actionable finding in this study was the significant association between a previous episode of rectal bleeding and a subsequent diagnosis of rectal carcinoma. Patients reporting recurrent or previously investigated bleeding were substantially more likely to have cancer than those presenting with a first, isolated episode. This observation aligns closely with the red-flag symptom approach advocated by Fritz et al.⁵, in which persistence and recurrence of alarm symptoms, rather than their mere presence, carry the greatest diagnostic weight. Practically, this supports a triage strategy in busy surgical outpatient settings where colonoscopy access may be limited: patients with a history of prior bleeding episodes, particularly when combined with older age or male sex, should be prioritized for earlier endoscopic assessment over those with a single, recent-onset episode without other risk features.

These findings reinforce existing red-flag symptom frameworks while highlighting that a meaningful minority of cancers still occurred in younger patients, underscoring the need for clinical vigilance across age groups. Larger, prospective, multicenter studies are warranted to validate these associations and to refine referral thresholds for endoscopic evaluation in patients presenting with this common but diagnostically heterogeneous symptom.

This study has several limitations that temper the generalizability of its findings. It was conducted at a single tertiary-care institution using non-probability consecutive sampling, which may not represent the broader population of patients with rectal bleeding managed in primary or secondary care, and may over-represent more advanced or treatment-seeking presentations. The cross-sectional design captures frequency and association at a single point in time and cannot establish causal or temporal relationships between risk factors and cancer development. The number of confirmed rectal cancer cases, while sufficient to estimate an overall frequency with reasonable precision, was too small to reliably detect statistically significant subgroup differences, particularly for age and smoking history, and larger or multicenter cohorts would be needed to confirm these trends with adequate power. Recall bias may also have affected reporting of previous bleeding episodes and smoking history, both of which were based on patient history rather than independently verified records.

CONCLUSION:

Rectal carcinoma was found in a clinically significant proportion of patients presenting with rectal bleeding in this local surgical population, at a frequency toward the higher end of previously published estimates. Male sex, age above 50 years, and particularly a history of previous bleeding episodes were associated with a higher likelihood of malignancy, supporting a risk-stratified rather than purely symptom-based approach to referral for colonoscopy.

REFERENCES

1. Baidoun F, Elshiw K, Elkerai Y, Merjaneh Z, Khoudari G, Sarmini MT, et al. Colorectal cancer epidemiology: recent trends and impact on outcomes. *Curr Drug Targets*. 2021;22(9):998-1009.
2. Siegel RL, Wagle NS, Cercek A, Smith RA, Jemal A. Colorectal cancer statistics, 2023. *CA Cancer J Clin*. 2023;73(3):233-54.
3. Rebutzi F, Ulivi P, Tedaldi G. Genetic predisposition to colorectal cancer: how many and which genes to test? *Int J Mol Sci*. 2023;24(3):2137.
4. Clark GR, Anderson AS, Godfrey TG, Strachan JA, Fraser CG, Steele RJ. Variation in changes in the incidence of colorectal cancer by age and association with screening uptake: an observational study. *BMJ Open*. 2020;10(9):e037925.
5. Fritz CD, Otegbeye EE, Zong X, Demb J, Nickel KB, Olsen MA, et al. Red-flag signs and symptoms for earlier diagnosis of early-onset colorectal cancer. *J Natl Cancer Inst*. 2023;115(8):909-16.
6. Nisar B, Faizi KS, Ali A. Different clinical presentations of patients with colorectal cancer. *Pak J Med Health Sci*. 2015;9(4):1189-92.
7. Trivedi V, Chauhan R, Subham S, Rani R, Singh U. A comparative analysis of the clinicopathological

profile of early-onset versus late-onset rectal cancer patients. *Ecancermedalscience*. 2022;16:1365:1-13.

8. Pirzada MT, Ahmed MJ, Muzzafar A, Nasir IUI, Shah MF, Khattak S, Syed AA. Rectal carcinoma: demographics and clinicopathological features from a Pakistani population perspective. *Cureus*. 2017;9(6):e1375.

9. Sandhu GS, Anders R, Blatchford P, Walde A, Leal A, King G, et al. High incidence of prolonged rectal bleeding and advanced stage cancer in early-onset colorectal cancer patients. *Colorectal Cancer*. 2020;9(3):1-8.

10. Høltedahl K, Borgquist L, Donker GA, Buntinx F, Weller D, Campbell C, et al. Symptoms and signs of colorectal cancer, with differences between proximal and distal colon cancer: a prospective cohort study of diagnostic accuracy in primary care. *BMC Fam Pract*. 2021;22:148:1-13.

11. Ghaffar H, Anwar MI, Sadia H, Iqbal U, Afsar B. Frequency and surgical causes of patients with bleeding per rectum at outpatient department of Shaikh Zayed Hospital Lahore. *Insights J Health Rehab*. 2024;2(2):431-9.

12. Ali F, Aamir N, Hassan MK. Colonoscopic findings in patients presenting with lower gastrointestinal bleeding at a tertiary care hospital. *Rawal Med J*. 2023;48(2):324-6.

13. Mahmud MU, Hossain MM, Ghosh AK, Reza R. Etiological spectrum of diseases among patients presenting with per rectal bleeding attending at the surgery outpatient department in a tertiary level hospital. *J Chittagong Med Coll Teach Assoc*. 2022;33(1):9-14.