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Frequency Of Inflammatory Bowel Disease In Patients Presenting To General Medicine Clinic With Chronic Diarrhoea And Bleeding Per Rectum At Tertiary Care Hospital Islamabad

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ABSTRACT

Background: Frequency of inflammatory bowel disease in patients presenting to gastroenterology clinic with chronic diarrhoea and bleeding per rectum at tertiary care hospital Islamabad.

Methods: This study was conducted through a non-probability convenient sampling technique in the Department of Medicine, Rawal Institute of Health Sciences, Rawalpindi for a period of 11 months from December 2022 to November 2024. All the adult males and females who presented with chronic diarrhea for more than 03 months and bleeding per-rectum were included. Baseline and clinical data were collected and analyzed using SPSS version 26.0.

Results: A total of 126 patients were selected for final analysis and their mean age was 34.18±8.07 years. The prevalence of IBD reported among 15.07% (n = 19) of the patients. IBD were most significantly associated in young patients (36.12±9.23 – years), patients with comparatively low body weight (60.65±11.51 – kg), lower BMI levels (22.41±1.06 – kg/m^2), low hemoglobin levels (8.21±1.22 – gm/dL), female participants (n = 12, 9.52%), and current smokers (n = 16, 12.69%), p value <0.05.

Conclusion: In our study we have concluded that prevalence of IBD in patients presented with chronic diarrhea and bleeding per-rectum was two-folds higher. Controlling the risk factors may reduce its burden.

Keywords: Inflammatory bowel disease, high risk factor groups, Pakistan.

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INTRODUCTION

Inflammatory bowel disease results from a complex relationship between genetic susceptibility, environmental exposures, and intestinal microbiota changes[1]. An increased risk of IBD among people of South Asian origin has been well-documented, suggesting a genetic predisposition[2]. Studies also suggest distribution of IBD is generally more common in whites than in African Americans, with lower rates in Hispanics, American Indians, and Asians[3]. A family history of IBD is the strongest known risk factor for developing disease. Other exposures such as antibiotics, gastrointestinal infections, early life risk factors, and concomitant immune-mediated diseases IMIDs have been implicated in IBD risk[4]. However, given the rarity of IBD, and the limitations of exposure ascertainment, the impact of these factors is inconsistent across studies. Data from previously published studies also mentioned risk factors associated with IBD. The relevant risk factors include Smoking, hygiene hypothesis, microorganisms, appendectomy, medication, nutrition, and stress have all been found to be associated with the modality of IBD, but results are inconsistent on this issue in available studies[5].

Most of the patients with IBD experience abdominal symptoms, including diarrhea, abdominal pain, vomiting, and bleeding per rectum[6]. The frequency distribution of clinical manifestations in a Pakistani study was mucus diarrhea in 49 (90.7%), gross blood in stools in 42 (77.8%), abdominal pain or cramps in 40 (74.1%), and weight loss in 15 (27.7%) [7]. However, that study only covers patients with ulcerative colitis.

Pakistan is a developing country where most people are unable to afford basic tests to diagnose underlying diseases. Thus, increasing the burden of disease-related complications and hospital admissions. Considering the fact above, we tried to conduct a study in which we would try to determine the prevalence of IBD in patients presenting with chronic diarrhea and bleeding per rectum.

METHODS

This cross-sectional hospital-based prospective study was conducted through a convenient sampling technique in the Department of General Medicine, Rawal Institute of Health Sciences, Rawalpindi for a period of 11 months from December 2022 to November 2024, a tertiary care hospital at Rawalpindi, which has a population of 2.09 million (as of 2017). This hospital, not only covers the population of Rawalpindi, neighboring cities, but also patients come from all over Pakistan. Ethical approval was taken from the hospital's ethical committee before the commencement of the study.

Patients' consent was also sought after explaining the purpose and future benefits of the study in detail.

All the adult males and females (age ≥18 years to 60 years) who presented in the outpatient department (OPD) with complaints of chronic diarrhea for at least 3 months along with bleeding per-rectum were included. Patients with known cases of bleeding diathesis, chronic liver disease leading to bleeding per-rectum, pregnancy, and bleeding per-rectum other than IBD such as drugs or carcinoma of the intestine were excluded from this study.

Suspected patients who met the inclusion and exclusion criteria underwent workup for IBD. The patient will be labeled IBD if they have a previous record in which a diagnosis of Crohn's disease or ulcerative colitis was made. Otherwise, proper workup of these diseases will be made such as blood tests, ultrasound abdomen, and upper or lower GI endoscopy, where needed before making a diagnosis.

A questionnaire was designed to collect the relevant data such as baseline demographics (age, gender, area of residence, social class, and marital status), anthropometric data (weight, height, and body mass index), laboratory investigations including (RBS – mg/dl and Hemoglobin level – gm/dL), and clinical parameters such ass presence or absence of IBD.

A statistical package for the social sciences (SPSS version 26.0) was applied for data entry and analysis. Mean ± standard deviation was calculated to express the continuous variables while frequencies and percentages were calculated for categorical variables. Independent sample t-test was applied to compare two groups of continuous variables. Pearson chi-square/fisher's exact test was applied for comparison between categorical groups, where applicable. A two-sided test of $P < 0.05$ was defined as statistically significant.

RESULTS

Table 1: Baseline and clinical characteristics of study participants (N = 126)

Characteristics	Overall
	N = 126
Age – years	34.18±8.07
Weight -Kg	64.23±14.28

Height -cm2	168.30±5.11
BMI - kg/m2	22.14±3.51
Hemoglobin - gm/dL	10.98±4.19
Minimum	7.33
Maximum	15.71
Duration of bleeding Per-rectum - months	3.02±0.11
Gender	**N (%)**
Male	83 (65.87%)
Female	43 (34.12%)
Area of residence	
Rural	35 (27.77%)
Urban	91 (72.22%)
Social Class	
Lower	32 (25.39%)
Middle	82 (65.07%)
Upper	12 (9.52%)
Marital Status	
Single	24 (19.04%)
Married	98 (77.77%)
Widowed	4 (3.17%)
Addiction	
Current smoker	22 (17.46%)
Alcohol	8 (6.34%)

A total of 126 patients were selected for final analysis those who presented with chronic diarrhea and bleeding per-rectum. Overall mean age was 34.18±8.07 years. Among them, males were predominant (n = 83, 65.87%) as compared to females (n = 43, 34.12%) with urban dwellers were more commonly

presented (n = 91, 72.22%). In this study we have observed that mean hemoglobin levels of patients were 10.98±4.19 gm/dL and BMI falls under normal range 22.14±3.51 – kg/m^2. Frequency of current smokers was 17.46% (n = 22) and addiction to alcohol was reported among 6.34% (n = 8) of the patients in our study (**Table 1)**.

The main objective of this study was to evaluate the prevalence of IBD in patients presented with chronic diarrhea and bleeding per-rectum. In our study the prevalence of IBD reported among 15.07% (n = 19) of the patients (**Figure 1)**.

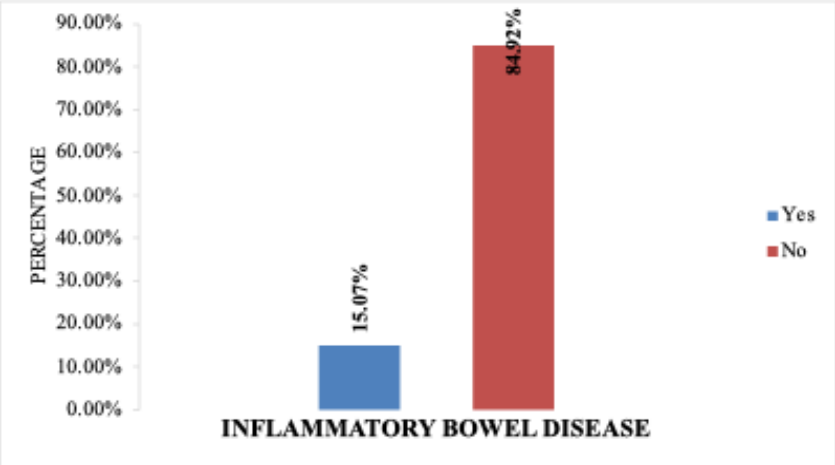

Figure 1: Prevalence of IBD in patients presented with chronic diarrhoea and bleeding per rectum (N = 126)

Table 2: Baseline and clinical characteristics of study participants (N = 126)

Characteristics	IBD		p value
	Yes (N = 19)	No (N = 107)	
Age - years	36.12±9.23	44.98±8.94	**0.01***
Weight -Kg	60.65±11.51	67.80±8.22	**0.02***
Height -cm2	168.42±5.13	170.11±3.56	0.09
BMI - kg/m2	22.41±1.06	23.44±1.28	**<0.03***
Haemoglobin - gm/dL	8.21±1.22	10.51±2.04	**<0.01***
Duration of bleeding Per-rectum - months	2.11±0.98	2.61±0.75	0.72

Gender			
Male	7 (5.55%)	76 (60.31%)	**0.01***
Female	12 (9.52%)	31 (24.60%)	
Area of residence			
Rural	5 (3.96%)	30 (23.80%)	0.06
Urban	14 (11.11%)	77 (61.11%)	
Social Class			
Lower	4 (3.17%)	28 (22.22%)	
Middle	12 (9.52%)	70 (55.55%)	0.49
Upper	3 (2.38%)	9 (7.14%)	
Marital Status			
Single	6 (4.76%)	18 (14.28%)	
Married	11 (8.73%)	87 (69.04%)	0.55
Widowed	2 (1.56%)	2 (1.56%)	
Addiction habits			
Current smoker	16 (12.69%)	6 (4.76%)	**<0.01***
Alcohol	5 (3.96%)	3 (2.38%)	0.93

*p value <0.05 is statistically significant

Furthermore, baseline and clinical parameters were also observed to see the association of them with IBD in patients presented with chronic diarrhea and bleeding per-rectum. IBD were most significantly associated in young patients (36.12±9.23 – years), low body weight (60.65±11.51 – kg), lower BMI levels (22.41±1.06 – kg/m^2), low hemoglobin levels (8.21±1.22 – gm/dL), female participants (n = 12, 9.52%), and current smokers (n = 16, 12.69%), p value <0.05 (**Table 2**).

DISCUSSION:

The prevalence and incidence of inflammatory bowel disease is increasing worldwide from 4.22 per 100,000 in 1990 to 4.45 per 100,000 in 2021 and it is estimated that approximately more than 6.8 million people are currently living with IBD[8]. Previously published studies also suggest higher risk of colorectal cancer in patients with IBD[9]. Studies also observed higher prevalence of anemia, liver

disease, atherothrombotic disease, renal disease, and arthritis[10,11,12]. That is why determination of its true burden is necessary to reduce associated complications, making of proper management plan, and reduce unnecessary financial burden. Rectal bleeding and chronic diarrhea are known risk factors and also presenting symptoms associated with higher prevalence of IBD[13].

In our study we have observed that prevalence of IBD was 15.07% (n = 19 / 126) in patients presented with chronic diarrhea and per-rectal bleeding. In a previously published study on more than 30,000 people by Banerjee R and colleagues from India evaluated prevalence of IBD ranging between 5% to 10% depending upon the risk factors, age, area of residence, and social class and evaluated through colonoscopy[14]. Furthermore, in a case report from Pakistan published by Lail G and colleague, the study also observed 5–10 times higher prevalence of IBD in patients with chronic diarrhea and this prevalence increases if patients also complain of bleeding per-rectum[15]. Also, in a meta-analysis that included 3370 studies with more than 3100 patients, prevalence of IBS-type symptoms was 32.5%[16]. Another study from Pakistan showed lower prevalence of IBD in patients with chronic diarrhea and bleeding per-rectum ranging from 0.25 to 7.5 per 100,000. The reason behind low prevalence of IBD in Pakistan could be due to lack of comprehensive studies, deficient data regarding IBD in patients with chronic diarrhea and bleeding per-rectum, or underdiagnosis of cases[17].

Further evaluation from our study's results has shown that IBD was most significantly associated with young patients (36.12±9.23 years), low body weight (60.65±11.51 kg), lower BMI levels (22.41±1.06 kg/m^2), low hemoglobin levels (8.21±1.22 gm/dL), female participants (n = 12, 9.52%), and current smokers (n = 16, 12.69%), p value <0.05. Our findings are consistent with previously conducted studies in which young population[18], females[19], comparatively low BMI[20], and smokers[21] were more likely to have IBD when they presented with chronic diarrhea and bleeding per-rectum. The exact mechanism and pathophysiology is not well understood but some studies suggest that higher prevalence of IBD in females could be due to hormonal influence and higher prevalence of stress[22] and among smokers due to inflammatory response caused by smoking[23]. That is why special concern should be given to the population with high risk factors to reduce the disease burden, financial burden, and also to improve quality of life of the patients.

Besides its out-bursting findings, there are certain limitations that should be addressed in future studies. Foremost, this study was conducted in a single center; hence the sample size was small. Common types of IBD (ulcerative colitis and Crohn's disease) and their association with baseline and clinical parameters should also be evaluated to provide further scientific information related to IBS.

CONCLUSION

In our study we have concluded that prevalence of IBD in patients presented with chronic diarrhea and bleeding per-rectum was two-folds higher. Controlling the risk factors may reduce its burden.

LIST OF ABBREVIATIONS

None

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CONFLICT OF INTEREST

None

ETHICAL APPROVAL

This study was approved by Rawal Institute of Health Sciences, Institute Review Board (Approval No: RIHS/IRB/13/2022).

AUTHORS' CONTRIBUTION

All authors contributed equally as per ICMJE

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