

FREQUENCY OF VARIOUS TYPES OF ULCERATIVE COLITIS IN PAKISTANI POPULATION: A FIVE-YEAR SINGLE CENTER EXPERIENCE

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ABSTRACT

Background: Ulcerative colitis (UC) is a chronic inflammatory bowel disease with a relapsing–remitting course. Although once considered uncommon in South Asia, recent evidence suggests a rising burden of UC in the region. There is limited and conflicting data from Pakistan regarding its disease extent and severity. The objective is to determine the frequency of various categories of UC based on disease extent and severity in a Pakistani patient population. **Materials and Methods:** This retrospective single-center study reviewed medical records of adult patients (≥ 18 years) with active UC presenting between January 2020 and December 2024 at a tertiary care center in Karachi, Pakistan. Only patients with confirmed endoscopic and histological diagnosis of UC were included. Disease extent was classified as proctitis, proctosigmoiditis, left-sided colitis, or pancolitis. Disease severity was assessed using the Mayo scoring system. Sociodemographic data and clinical presentation were analyzed using SPSS version 20. **Result:** A total of 100 patients were included; 70% were younger than 35 years and 66% were male. Diarrhea (80%) and rectal bleeding (70%) were the most common presenting symptoms. Proctosigmoiditis was the most frequent disease extent, while pancolitis was least common. Moderate to severe disease was significantly more prevalent among patients with pancolitis. Increased bowel urgency was more frequent in patients aged ≤ 35 years. **Conclusion:** UC in this cohort predominantly affected young adult males and was commonly limited to the distal colon with mild disease activity. Pancolitis, though infrequent, was associated with greater disease severity. Larger multicenter prospective studies are needed to better define UC patterns in Pakistan.

INTRODUCTION

Ulcerative colitis (UC) is a chronic inflammatory condition in genetically susceptible patients, signified by diffuse inflammation of the colonic and rectal mucosa. It is one of the types of inflammatory bowel disease (IBD), the other one being crohn's disease. The cardinal presenting symptom of this disease is bloody diarrhea, usually reported in majority of the patients. The disease follows a relapsing and remitting course, and these changes may happen spontaneously, in response to modifications in therapy, or because of any superimposed illness. The etiology of the disease is multifaceted, involving a complex interplay of genetic and environmental factors.^[1]

UC was traditionally known to be an uncommon disease in South Asia, and hence the actual burden of UC in our part of the world is largely unknown. Many such patients are falsely labeled as having “irritable bowel syndrome” (IBS) without a thorough colonoscopic evaluation.^[2] However, there is recent evidence to show that increasing numbers of diagnosed cases of UC are being reported from this part of the globe.^[3,4] The reason for this increasing prevalence is attributed to rapid industrialization and a trend towards westernized way of life in the region. Interestingly, studies done among migrants from South Asia showed high incidence and prevalence of UC in their espoused country as opposed to their birthplaces.^[5]

Disease extent in UC is classified according to the degree of mucosal involvement, ranging from disease

limited to rectum (proctitis) to an extensive involvement of the entire colon (pancolitis).^[6] Severity of disease is assessed by various parameters, including symptomatology, patient's quality of life, findings on endoscopy and histopathological features. Some of the initial studies demonstrated that UC in Asian population follows a milder disease course and lower colectomy rates as compared to patients in the West.^[7] However, another European study which looked at the phenotypic details of IBD patients found out that a higher number of Asian patients with UC had severe disease when compared to the indigenous cohort.^[8] Conflicting data regarding disease severity and extent have also been reported from Pakistan.^[9,10] Therefore, we aimed to determine the frequency of various categories of UC based on the disease extent and severity of UC in our patient population.

MATERIALS AND METHODS

This study was a retrospective, single-center chart review of adult patients (> 18 years of age). It was conducted in the Department of Gastroenterology, Fazaia Ruth Pfau Medical College (FRPMC) and Pakistan Air Force Hospital, Base Masroor. Medical records of all patients who presented with symptoms indicating active UC (i.e. chronic diarrhea, bleeding per rectum, abdominal pain, and/ or increased stool urgency) from January 2020 to December 2024 were reviewed. Among these, the patients who had an endoscopic as well as a histological diagnosis of UC were included in the study. Patients below 18 years, with known gastrointestinal malignancy, active tuberculosis and with incomplete medical records were excluded for the analysis. Ethical approval for this study was obtained from the Institutional Review Board of FRPMC Ref. No (FRPMC-IRB-2024-92). Data was recorded using a pre-designed structured questionnaire. Information was collected regarding sociodemographic characteristics i.e. age, gender, co-morbid illnesses and smoking status. Disease extent was determined by the following classification: proctitis (restricted to the rectum), proctosigmoiditis (involving the rectum and sigmoid colon), left sided colitis (from the rectum up to the descending colon) and pancolitis (involving the complete colon). Disease severity was measured using the Mayo scoring system,^[11] It is a 0-12 point index which has

four components i.e. rectal bleeding, stool frequency, physician assessment and endoscopic appearance. For the purpose of our study, a score of [3-5] was considered as mild disease activity, whereas that between [6-12] was labeled as severe disease activity.^[10]

Data analysis was performed using SPSS version 20. Frequency was calculated for different types of UC as identified on colonoscopy. Chi-square test of significance was applied to compare the colonoscopy outcomes with respect to sociodemographic characteristics. Frequency for various symptoms of UC was also compared among different age groups.

RESULTS

In total 100 patients were included in the study with median age of 30 years (IQR; 13 years). Demographics of all the UC patients is shown in [Table 1]. Majority of the patients were young (70% less than 35 years) and males (66%). 78% of the patients were newly diagnosed cases, whereas 20% actively smoked. Diarrhea was the predominant presenting symptom (80%), followed by blood in stools (70%). On the basis of colonoscopy findings, proctosigmoiditis was the most frequent diagnosis while pancolitis was the least reported one [Figure 1]. Most of the moderate to severe cases as identified on the basis of Mayo score were significantly reported among patients with pancolitis as opposed to other extents [Table 2]. Increased bowel urgency was the only presenting symptom significantly more frequent among patients of age 35 years or less [Table 3]. There was no significant difference in other presenting symptoms.

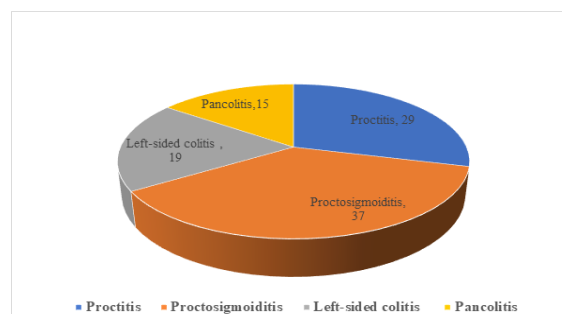


Figure 1: Percentage distribution of ulcerative colitis cases on the basis of colonoscopy findings (n =100).

Table 1: Distribution of sociodemographic and health related characteristics of patients undergone colonoscopy for ulcerative colitis (n=100)

Median age: 30 years, IQR ;13 years	Frequency (n)	Percentage (%)
Age in completed years		
19-35 years	70	70.0
>35 years	30	30.0
Sex		
Male	66	66.0
Female	34	34.0
First clinical presentation		
Yes	78	78.0
No	22	22.0
Co-morbid*		

Diabetes Mellitus	07	7.0
Hypertension	11	11.0
None	82	82.0
Smoking status		
Current smoker	20	20.0
Past smoker	07	7.0
Never smoked	73	73.0
Presenting Symptoms*		
Diarrhea	80	80.0
Abdominal Pain	51	51.0
Blood in stool	70	70.0
Increased bowl urgency	54	54.0
Weight loss	42	42.0

*Multiple responses possible

Table 2: Distribution of colonoscopy findings of ulcerative colitis on the basis of sociodemographic characteristics

Variables	Ulcerative proctitis	Ulcerative proctosigmoiditis	Left sided ulcerative colitis	Ulcerative pancolitis	P-value
	Frequency (Percentage)				
Age (completed years)					
19-35 years	20(28.6)	24(34.3)	14(20.0)	12(17.1)	0.75
>35 years	09(30.0)	13(43.3)	05(16.7)	03(10.0)	
Sex					
Male	17(25.8)	27(40.9)	12(18.2)	10(15.2)	0.68
Female	12(35.3)	10(29.4)	07(20.6)	05(14.7)	
Co-morbid*					
Diabetes Mellitus	02(28.6)	03(42.9)	02(28.6)	0	0.83
Hypertension	03(27.3)	06(54.5)	01(9.1)	01(9.1)	
None	24(29.3)	28(34.1)	16(19.5)	14(17.1)	
Smoking status					
Current smoker	07(35.0)	07(35.0)	02(10.0)	04(20.0)	0.45
Past smoker	03(42.9)	02(28.6)	0	02(28.6)	
Never smoked	19(26.0)	28(38.4)	17(23.3)	09(12.3)	
Severity of UC**					
Mild	29(39.7)	35(47.9)	08(11.0)	01(1.4)	<0.001
Moderate to severe	0	02(7.4)	11(40.7)	14(51.9)	
*P-value of 0.05 or less is considered statistically significant.					
** Severity of ulcerative colitis was measured using Mayo score.					

*P-value of 0.05 or less is considered statistically significant.

** Severity of ulcerative colitis was measured using Mayo score.

(n=100)

Table 3: Distribution of the ulcerative colitis symptoms on the basis of age group (n=100)

Symptom	Frequency (Percentage)		P-value
	19-35 years	>35 years	
Diarrhea			
Yes	58(82.9)	22(73.3)	0.41
No	12(17.1)	08(26.7)	
Abdominal Pain			
Yes	33(47.1)	18(60.0)	0.27
No	37(52.9)	12(40.0)	
Blood in stool			
Yes	47(67.1)	23(76.7)	0.47
No	23(32.9)	07(23.3)	
Increased bowl urgency			
Yes	46(65.7)	08(26.7)	<0.001*
No	24(34.3)	22(73.3)	
Weight loss			
Yes	28(40.0)	14(46.7)	0.65
No	42(60.0)	16(53.3)	

*P-value of 0.05 or less is considered statistically significant.

DISCUSSION

UC is a chronic relapsing and remitting disease. Many patients are diagnosed late in the disease course, especially in our setup. Undiagnosed patients tend to ignore the subtle symptoms of disease onset and at times feel hesitant to report their concern to the treating physician. On the other hand, quite a few patients with clinical symptoms suggestive of UC are being inappropriately managed by general

practitioners with repeated antibiotic courses, and some individuals are afraid to undergo a thorough colonoscopy due to various myths and misconceptions attached to the procedure. Our data shows that UC is frequently been diagnosed in younger Pakistani population. This pattern has been witnessed in other studies from this territory. For example, in a study by Ali et al. which included 120 UC patients, all of them were between the ages of 20-39 years⁹. The young age of presentation may have

some important clinical consequences in our population, since patients who are diagnosed at an early age have been shown to develop progressive disease.^[12,13]

Although literature suggests that UC affects both men and women equally, male patients outnumbered the females in our study. This phenomenon of male predominance in UC has also been reported by authors from this part of the country.^[9,14,15] However, a study by Khan et al. described a greater prevalence in females as compared to males.^[16] Diarrhea with or without association with blood has been found to be the most common presenting symptom in UC.^[17] Study done by Qureshi et al. also suggests this clinical presentation to be more frequent in such patients.¹⁰ Khan et al. described the presence of bloody diarrhea as the key symptom in their cohort of patients.^[16]

There are a lot of demographic variations with regards to the disease extent and severity of UC. A large prospective observational study spanning over 24 months across 33 countries, involving more than 1500 patients and utilizing various physician and patient-reported outcome tools demonstrated moderate to severe disease in nearly half of the patients.^[18] Newly industrialized countries like those in Latin America are witnessing more severe cases, ranging from 45% to 73%.^[19] In contrast, the majority of patients diagnosed with UC in our cohort did not have moderate or severe disease, and that too limited to the distal colon and rectum. Similar findings were reported by another study by Khokhar et al. few years ago.^[20]

However, a recent study from Pakistan has described moderate to severe disease as the predominant phenotype. Qureshi et al. demonstrated that in their study of 54 patients, around half of them had at least extensive colitis, and nearly two thirds had moderate to severe disease, as measured by Mayo score.¹⁰ We believe our data is more robust as the number of patients in our study are nearly double to that of Qureshi et al's study. Additionally, this fact that the disease is milder in our population cohort is reassuring, since mild limited disease can easily be managed by steroids and 5-aminosalicylates (5-ASA, either oral or topical), therapies which are widely available and cost effective for a lower middle income country like Pakistan. On the other hand, moderate to severe disease may require expensive biologic treatment, which most patients would find unaffordable.

The biggest limitation of our study is the single center design, which limits the generalizability of the findings to a wider Pakistani population. There could be a potential selection bias due to a difference of sociodemographic factors between patients attending the military hospital as compared to the general population, although the services of our hospital are open to public. The retrospective methodology and lack of longitudinal follow-up limits our study from providing insights on the progression of UC, response to treatment and development of potential

complications. Furthermore, by excluding the pediatric patients from the analysis, disease manifestation and diversified severity patterns of pediatric UC are missing in this study.

CONCLUSION

Our study strengthens the concept that proctosigmoiditis is the commonest type of UC in our population. Moreover, the frequency of UC is higher among young adult males, majority of whom have mild disease with activity limited to distal colon and rectum. Pancolitis, albeit rare, tends to be associated with more severe disease phenotype. However, there is a definite need of larger, prospective, multi-center studies to substantiate the disease behaviour and pattern, hence gauging the accurate estimates of incidence and prevalence of UC in Pakistan.

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