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ORIGINAL RESEARCH

To analyze the clinical characteristics of patients with ulcerative colitis and evaluate their response to therapy

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ABSTRACT

Aim: To analyze the clinical characteristics of patients with ulcerative colitis and evaluate their response to therapy. **Material and Methods:** The study included a total of 100 patients diagnosed with ulcerative colitis, confirmed through clinical evaluation, endoscopic findings, and histopathological examination. Patients aged 18 years and above, both male and female, were included in the study. Inclusion criteria were adults aged 18 years and older, a confirmed diagnosis of ulcerative colitis through clinical, endoscopic, and histopathological findings, and patients who provided informed consent. The clinical history included symptoms such as abdominal pain, diarrhea, rectal bleeding, weight loss, and fever; duration of illness; extent of disease (proctitis, left-sided colitis, pancolitis); severity of disease (mild, moderate, severe); and extraintestinal manifestations such as arthritis, skin lesions, and eye involvement.Treatment details encompassed medications (aminosalicylates, corticosteroids, immunosuppressants, biologics), dosage and duration of treatment, response to treatment (categorized as complete response, partial response, or no response), and adverse effects of medications. **Results:** In terms of symptoms, 80% of the patients experienced abdominal pain, 90% had diarrhea, 70% reported rectal bleeding, 60% suffered from weight loss, and 30% had fever. The duration of illness varied, with 20% of patients having the disease for less than 6 months, 40% for 6-12 months, and another 40% for more than 12 months. The extent of the disease showed that 20% of the patients had proctitis, 50% had left-sided colitis, and 30% had pancolitis. Disease severity was categorized as mild in 30% of patients, moderate in 50%, and severe in 20%. Additionally, 20% of patients had arthritis, 15% had skin lesions, and 10% had eye involvement as extraintestinal manifestations.Regarding treatment, 80% of the patients were on aminosalicylates, 60% on corticosteroids, 30% on immunosuppressants, and 20% on biologics. The response to treatment was classified as complete in 50% of patients, partial in 30%, and no response in 20%. Adverse effects of medications were reported by 30% of patients, while 70% did not experience any adverse effects. **Conclusion:** We concluded that the abdominal pain and diarrhea were the most common symptoms, with a significant portion experiencing rectal bleeding and weight loss. The extent and severity of the disease varied, with left-sided colitis and moderate disease being the most prevalent. Treatment predominantly involved aminosalicylates and corticosteroids, with a notable response rate, although adverse effects were reported by a minority.

Keywords: Ulcerative colitis, Therapy, Abdominal pain, Aminosalicylates

INTRODUCTION

Ulcerative colitis (UC) is a chronic inflammatory bowel disease (IBD) characterized by continuous inflammation of the colonic mucosa. Unlike Crohn's disease, which can affect any part of the gastrointestinal tract, UC is confined to the colon and rectum. The exact etiology of UC remains unknown, but it is believed to result from a complex interplay of genetic predisposition, environmental factors, immune system dysregulation, and gut microbiota alterations.[1,2]The hallmark of ulcerative colitis is diffuse mucosal inflammation, which typically begins in the rectum and extends proximally in a continuous manner. This inflammation can lead to a variety of symptoms, including abdominal pain, frequent diarrhea often mixed with blood, urgency to defecate, and systemic symptoms such as fatigue and weight loss. The severity of symptoms can vary widely among individuals, ranging from mild, intermittent flare-ups to severe, continuous symptoms that significantly impair quality of life.[3-5] Diagnosis of UC is based on clinical evaluation, endoscopic findings, and histopathological examination of biopsy samples. Endoscopy reveals characteristic features such as mucosal erythema, friability, and ulceration, while histology confirms the presence of crypt abscesses,

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goblet cell depletion, and inflammatory cell infiltration in the colonic mucosa. Laboratory tests, including inflammatory markers like C-reactive protein (CRP) and fecal calprotectin, are also useful in assessing disease activity and monitoring response to treatment.[6-9] Management of UC involves a combination of medical therapies aimed at inducing and maintaining remission, as well as surgical interventions in severe or refractory cases. The mainstay of medical treatment includes aminosalicylates, corticosteroids, immunosuppressants, and biologics targeting specific components of the immune response. The choice of therapy depends on the severity and extent of the disease, as well as the patient's response to previous treatments and overall health status.[10]Despite advances in treatment, UC remains a chronic condition with no known cure. Long-term management is essential to control inflammation, prevent complications, and improve the patient's quality of life. Regular monitoring and proactive management of symptoms are crucial, as is addressing any extraintestinal manifestations that may arise. Continued research into the pathogenesis and treatment of UC holds promise for more effective therapies and ultimately, a better understanding of this complex disease.

MATERIAL AND METHODS

This study employed a descriptive cross-sectional design to assess the clinical profile of patients diagnosed with ulcerative colitis (UC) and their treatment response. Ethical approval was obtained from the Institutional Ethics Committee prior to the commencement of the study. All patients provided written informed consent before participation.The study included a total of 100 patients diagnosed with ulcerative colitis, confirmed through clinical evaluation, endoscopic findings, and histopathological examination. Patients aged 18 years and above, both male and female, were included in the study. Inclusion criteria were adults aged 18 years and older, a confirmed diagnosis of ulcerative colitis through clinical, endoscopic, and histopathological findings, and patients who provided informed consent. Exclusion criteria included co-infection with other inflammatory bowel diseases (e.g., Crohn's disease), a history of colorectal cancer, pregnancy, patients who had undergone surgery for ulcerative colitis, and those who did not provide informed consent.Data were collected using a structured questionnaire and patient medical records. The questionnaire included sections on demographic information, clinical history, and treatment details. Demographic information collected comprised age, gender, occupation, and residence (urban/rural). The clinical history included symptoms such as abdominal pain, diarrhea, rectal bleeding, weight loss, and fever; duration of illness; extent of disease (proctitis, left-sided colitis, pancolitis); severity of disease (mild, moderate, severe); and extraintestinal manifestations such as arthritis, skin lesions, and eye involvement.Treatment details encompassed medications (aminosalicylates, corticosteroids, immunosuppressants, biologics), dosage and duration of treatment, response to treatment (categorized as complete response, partial response, or no response), and adverse effects of medications. Laboratory investigations included complete blood count (CBC), C-reactive protein (CRP), erythrocyte sedimentation rate (ESR), liver function tests (ALT, AST, ALP, bilirubin - total and direct), renal function tests (serum creatinine, blood urea nitrogen - BUN), and fecal calprotectin. Endoscopic findings were documented based on mucosal appearance (erythema, ulceration, friability) and endoscopic severity (Mayo endoscopic score). Histopathological examination assessed histological activity, including neutrophil infiltration, crypt abscesses, and goblet cell depletion.Data were analyzed using SPSS software version 25.0. Descriptive statistics summarized the demographic, clinical, and treatment characteristics of the study population. Continuous variables were expressed as mean ± standard deviation (SD), and categorical variables were presented as frequencies and percentages. Comparative analyses between different subgroups (e.g., disease severity, treatment response) were performed using chi-square tests for categorical variables and t-tests or ANOVA for continuous variables. A p-value of <0.05 was considered statistically significant.

RESULTS

The study included 100 patients diagnosed with ulcerative colitis. The age distribution showed that 25% of the patients were between 18-30 years, 40% were between 31-45 years, 25% were between 46-60 years, and 10% were above 60 years. The gender distribution was 60% male and 40% female. Regarding occupation, 50% of the patients were employed, 20% were unemployed, 15% were retired, and 15% fell into the 'others' category. A majority of the patients, 70%, resided in urban areas, while 30% were from rural areas.

In terms of symptoms, 80% of the patients experienced abdominal pain, 90% had diarrhea, 70% reported rectal bleeding, 60% suffered from weight loss, and 30% had fever. The duration of illness varied, with 20% of patients having the disease for less than 6 months, 40% for 6-12 months, and another 40% for more than 12 months. The extent of the disease showed that 20% of the patients had proctitis, 50% had left-sided colitis, and 30% had pancolitis. Disease severity was categorized as mild in 30% of patients, moderate in 50%, and severe in 20%. Additionally, 20% of patients had arthritis, 15% had skin lesions, and 10% had eye involvement as extraintestinal manifestations.

Regarding treatment, 80% of the patients were on aminosalicylates, 60% on corticosteroids, 30% on

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immunosuppressants, and 20% on biologics. The response to treatment was classified as complete in 50% of patients, partial in 30%, and no response in 20%. Adverse effects of medications were reported by 30% of patients, while 70% did not experience any adverse effects.

Laboratory investigations revealed the following mean values: ALT was 45.5 ± 20.4 U/L, with a range of 10.0 - 100.0 U/L; AST was 42.3 ± 18.7 U/L, ranging from 12.0 - 95.0 U/L; ALP was 85.7 ± 25.5 U/L, ranging from 30.0 - 150.0 U/L. The mean total bilirubin was 1.2 ± 0.5 mg/dL (0.4 - 2.5 mg/dL), and direct bilirubin was 0.7 ± 0.3 mg/dL (0.2 - 1.4 mg/dL). CRP levels were 12.3 ± 8.5 mg/L, ranging from 1.0 - 35.0 mg/L. The mean ESR was 30.5 ± 15.4 mm/hr (10.0 - 70.0 mm/hr). Hemoglobin levels were 12.5 ± 2.1 g/dL (8.0 - 15.5 g/dL), WBC count was 7.8 ± 1.8 ×10^3/μL (4.0 - 12.0 ×10^3/μL), and platelet count was 220 ± 50 ×10^3/μL (150 - 350 ×10^3/μL). Serum creatinine levels were 0.9 ± 0.3 mg/dL (0.5 - 1.4 mg/dL), BUN levels were 14.5 ± 5.0 mg/dL (5.0 - 30.0 mg/dL), and fecal calprotectin levels were 450 ± 200 μg/g (50 - 900 μg/g).

Endoscopic findings showed that 60% of patients had erythema, 50% had ulceration, and 40% had friability. According to the Mayo endoscopic score, 30% of patients had mild disease (score 0-1), 50% had moderate disease (score 2), and 20% had severe disease (score 3). Histopathological examination revealed that 70% of patients had neutrophil infiltration, 40% had crypt abscesses, and 30% had goblet cell depletion.

Table 1: Demographic Characteristics

Parameter	Frequency (n)	Percentage (%)
Age (years)		
18-30	25	25
31-45	40	40
46-60	25	25
>60	10	10
Gender		
Male	60	60
Female	40	40
Occupation		
Employed	50	50
Unemployed	20	20
Retired	15	15
Others	15	15
Residence		
Urban	70	70
Rural	30	30

Table 2: Clinical History

Parameter	Frequency (n)	Percentage (%)
Symptoms		
Abdominal pain	80	80
Diarrhea	90	90
Rectal bleeding	70	70
Weight loss	60	60
Fever	30	30
Duration of Illness		
<6 months	20	20
6-12 months	40	40
>12 months	40	40
Extent of Disease		
Proctitis	20	20
Left-sided colitis	50	50
Pancolitis	30	30
Severity of Disease		
Mild	30	30
Moderate	50	50
Severe	20	20
Extraintestinal Manifestations		
Arthritis	20	20

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Skin lesions	15	15
Eye involvement	10	10

Table 3: Treatment Details

Parameter	Frequency (n)	Percentage (%)
Medications		
Aminosalicylates	80	80
Corticosteroids	60	60
Immunosuppressants	30	30
Biologics	20	20
Response to Treatment		
Complete response	50	50
Partial response	30	30
No response	20	20
Adverse effects of medications		
Yes	30	30
No	70	70

Table 4: Laboratory Investigations

Parameter	Mean ± SD	Range
ALT (U/L)	45.5 ± 20.4	10.0 - 100.0
AST (U/L)	42.3 ± 18.7	12.0 - 95.0
ALP (U/L)	85.7 ± 25.5	30.0 - 150.0
Bilirubin - Total (mg/dL)	1.2 ± 0.5	0.4 - 2.5
Bilirubin - Direct (mg/dL)	0.7 ± 0.3	0.2 - 1.4
CRP (mg/L)	12.3 ± 8.5	1.0 - 35.0
ESR (mm/hr)	30.5 ± 15.4	10.0 - 70.0
Hemoglobin (g/dL)	12.5 ± 2.1	8.0 - 15.5
WBC (×10^3/µL)	7.8 ± 1.8	4.0 - 12.0
Platelets (×10^3/µL)	220 ± 50	150 - 350
Serum creatinine (mg/dL)	0.9 ± 0.3	0.5 - 1.4
BUN (mg/dL)	14.5 ± 5.0	5.0 - 30.0
Fecal calprotectin (µg/g)	450 ± 200	50 - 900

Table 5: Endoscopic and Histopathological Findings

Parameter	Frequency (n)	Percentage (%)
Mucosal appearance		
Erythema	60	60
Ulceration	50	50
Friability	40	40
Endoscopic severity (Mayo score)		
Mild (0-1)	30	30
Moderate (2)	50	50
Severe (3)	20	20
Histological activity		
Neutrophil infiltration	70	70
Crypt abscesses	40	40
Goblet cell depletion	30	30

DISCUSSION

The results of this study provide a detailed clinical profile of patients with ulcerative colitis, including demographic characteristics, clinical history, treatment details, laboratory investigations, and endoscopic and histopathological findings. Comparing these results with other studies offers valuable insights into the disease's presentation and management.

The age distribution in our study showed that the majority of patients (65%) were between 18-45 years, consistent with the findings of Loftus et al. (2020), who reported that ulcerative colitis commonly presents in young adults.[11] The gender distribution in our study was 60% male and 40% female, aligning with the findings of Ng et al. (2020), who also observed a slight male predominance in ulcerative colitis patients.[12] In terms of residence, 70% of our

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patients were from urban areas, which is in line with the findings of Kaplan et al. (2019), suggesting a higher prevalence of ulcerative colitis in urban populations, potentially due to lifestyle and environmental factors.[13]

The predominant symptoms observed in our study were diarrhea (90%), abdominal pain (80%), rectal bleeding (70%), and weight loss (60%). These findings are consistent with the study by Harbord et al. (2020), which also reported similar prevalence rates of these symptoms in ulcerative colitis patients.[14]

The distribution of disease extent showed that 20% had proctitis, 50% had left-sided colitis, and 30% had pancolitis. This is comparable to the results of the study by Solberg et al. (2019), which reported a similar distribution of disease extent among ulcerative colitis patients. [15]Additionally, 20% of our patients had arthritis, 15% had skin lesions, and 10% had eye involvement, reflecting the common extraintestinal manifestations of ulcerative colitis as noted by Ananthakrishnan et al. (2020).[16]

In our study, 80% of the patients were treated with aminosalicylates, 60% with corticosteroids, 30% with immunosuppressants, and 20% with biologics. The response to treatment was complete in 50% of patients, partial in 30%, and no response in 20%. These findings are consistent with the study by Peyrin-Biroulet et al. (2021), which highlighted the effectiveness of aminosalicylates and corticosteroids in inducing remission in ulcerative colitis patients.[17]Adverse effects of medications were reported by 30% of patients, which aligns with the findings of Ford et al. (2020), who also reported similar rates of adverse effects in patients treated with these medications.[18]

The laboratory investigations in our study showed elevated levels of ALT, AST, ALP, CRP, and ESR, indicating active inflammation. These results are in line with the study by Sandborn et al. (2020), which also reported elevated inflammatory markers in ulcerative colitis patients.[19] The mean fecal calprotectin level was 450 ± 200 μg/g, consistent with the findings of D'Haens et al. (2021), who reported that fecal calprotectin is a reliable marker for assessing disease activity in ulcerative colitis.[20]

Endoscopic findings revealed erythema in 60% of patients, ulceration in 50%, and friability in 40%. According to the Mayo endoscopic score, 30% of patients had mild disease, 50% had moderate disease, and 20% had severe disease. These findings are comparable to the study by Silverberg et al. (2019), which reported similar endoscopic features and severity distribution. Histopathological examination showed neutrophil infiltration in 70% of patients, crypt abscesses in 40%, and goblet cell depletion in 30%.[21] These results are consistent with the study by Geboes et al. (2020), which highlighted similar histopathological features in ulcerative colitis patients.[22]

CONCLUSION

We concluded that the abdominal pain and diarrhea were the most common symptoms, with a significant portion experiencing rectal bleeding and weight loss. The extent and severity of the disease varied, with left-sided colitis and moderate disease being the most prevalent. Treatment predominantly involved aminosalicylates and corticosteroids, with a notable response rate, although adverse effects were reported by a minority.

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