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Clinical and demographic profile of patients with ulcerative colitis at a tertiary care centre, Nepal

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Abstract

Introduction: Ulcerative colitis (UC) presents with variable symptoms and disease severity. Its prevalence is rising in Asia, including Nepal. This study aimed to assess clinicodemographics of UC at a tertiary care centre in Nepal.

Method: This prospective observational study enrolled all consecutive patients with UC over one year from 01 Jul 2022 to 30 Jun 2023 at gastroenterology department, Civil Service Hospital, Kathmandu, Nepal. Clinicodemographics, presenting symptoms, severity (Truelove and Witts criteria), endoscopic severity (Ulcerative Colitis Endoscopic Index of Severity (UCEIS)), disease extent, and extra-intestinal manifestations were analysed using SPSS 23. Measure of central tendency (mean, median) was used to express numerical data, and distribution for normality was checked. Association between pancolitis and severity of UC were analysed by chi-square; $p \leq 0.05$ was considered significant.

Result: Sixty-four UC patients, mean age 40.84±14.56 years, had chronic bloody diarrhoea as a common presenting symptom, with 14(21.9%) having extra-intestinal manifestations, mainly polyarthralgia. Although 26(40.60%) had mild disease by Truelove and Witts criteria and 34(53.10%) by UCEIS, most had pancolitis (45.30%). A significant association was found between pancolitis and severe UC on both clinical ($p=0.001$, $\phi=0.43$) and endoscopic assessment ($p=0.004$, $\phi=0.37$).

Conclusion: This study reveals a unique UC phenotype with predominant extensive colitis despite mild clinical severity. Significant association of pancolitis with severe disease underscores need for careful assessment beyond symptom severity. Larger population-based studies are essential to gain a more comprehensive understanding of UC in Nepal.

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Introduction

Ulcerative colitis (UC) is a chronic immune-mediated inflammatory disorder of the colon, characterized by relapsing and remitting mucosal inflammation. In recent decades, the prevalence of UC has increased in Asian countries, including Nepal. However, the disease phenotype in Asia differs slightly from that observed in Western countries. It is more common in Asian males and is associated with lower rates of surgery, colorectal cancer, extra-intestinal manifestations (EIM), and family clustering.[1-3] Despite these trends, the severity, extent, and presence of EIM can vary across different nations and ethnic groups within Asia.[3]

This study aims to analyse demographic, clinical, and disease extent patterns of ulcerative colitis in local population. In addition to these parameters, it incorporates the Ulcerative Colitis Endoscopic Index of Severity (UCEIS) for objective endoscopic assessment. The relationship between pancolitis with clinical and endoscopic severity has not been systematically evaluated in the local population. This study addresses this gap by assessing the association between pancolitis and severe ulcerative colitis using both the Truelove and Witts clinical criteria and the UCEIS score.

Method

This prospective observational study included UC patients visiting the outpatient as well as inpatient departments of Gastroenterology at Civil Service Hospital, Kathmandu, from 01 Jul 2022 to 30 Jun 2023. The study was approved by the Institutional Review Board (Ref No. 01/2023). Patients with UC who presented during the study period and provided consent were enrolled. A total enumerative sampling method was employed, and all UC cases during the one-year study period were included.

The UC was diagnosed based on the presence of chronic diarrhoea or bloody stools, characteristic colonoscopy findings, and histopathological evidence of chronic inflammation. Demographic characteristics, symptom distribution, disease severity, extent, and the presence of extra-intestinal EIM were recorded. Disease severity was classified using the Truelove and Witts criteria into mild, moderate, and severe categories.[4] The extent of the disease was classified according to the Montreal classification system into E1 (limited to the rectum), E2 (distal to the splenic flexure), and E3 (proximal to the splenic flexure). The endoscopic severity of UC was documented using the UCEIS score, with categories: remission (UCEIS 0–1), mild (UCEIS 2–4), moderate (UCEIS 5–6), and severe (UCEIS 7–8).[5]

Data were collected using a structured proforma. Categorical variables were expressed as frequencies and percentages, while normally distributed continuous variables were reported as mean±(SD). The association between categorical variables (disease extent and endoscopic and clinical severity) was assessed using the chi-square test**.** The phi coefficient (ϕ) was calculated to measure the strength of association. A p-value <0.05 was considered statistically significant. Analyses were performed using SPSS version 23.

Result

There was a total of 64 patients with UC, with a mean age of 40.84±14.56 years, and the majority 23(35.90%) in the 26-35 years age group, Figure 1. Males slightly outnumbered females (male-to-female ratio 1.06:1).

The ethnic distribution showed Khas-Arya as the predominant group (44, 69%), followed by Janajati and Madhesi, each representing 9 (14%) of the study population, Figure 2.

Chronic bloody diarrhoea was the predominant presenting symptom, affecting 46(71.90%) patients, followed by isolated rectal bleeding in 16(25%) cases. Abdominal pain and constipation were rare initial symptoms; each observed in only 1(1.60%) patient.

The EIM were present in 14(21.90%) patients. Polyarthralgia represented the most common EIM in 12(18.80%) patients, and pyoderma gangrenosum occurred in 2(3.10%) cases.

Based on Truelove and Witts criteria 14(21.90%) patients had severe UC, Figure 3.

Colonoscopic evaluation revealed that 29(45.30%) patients had extensive colitis (E3), followed by left-sided colitis (E2) in 24(37.50%) patients, and proctitis (E1) in 11(17.20%) patients.

Assessment of disease severity using the UCEIS score showed that 34(53.10%) patients had mild disease, 18(28.8%) had moderate disease, and 12(18.8%) had severe disease.

The prevalence of pancolitis (E3 disease) was significantly higher in severe UC (Truelove and Witts criteria), 85.7% vs 34.0% (p=0.001), with a large effect size (ϕ=0.43), suggesting clinical relevance beyond statistical significance. Association remained significant (Fisher's exact test), Table 1. Pancolitis was significantly higher in severe UC (UCEIS score), 83.3% vs 36.5% (p=0.004), with a mild to moderate effect size (ϕ=0.37), Table 1.

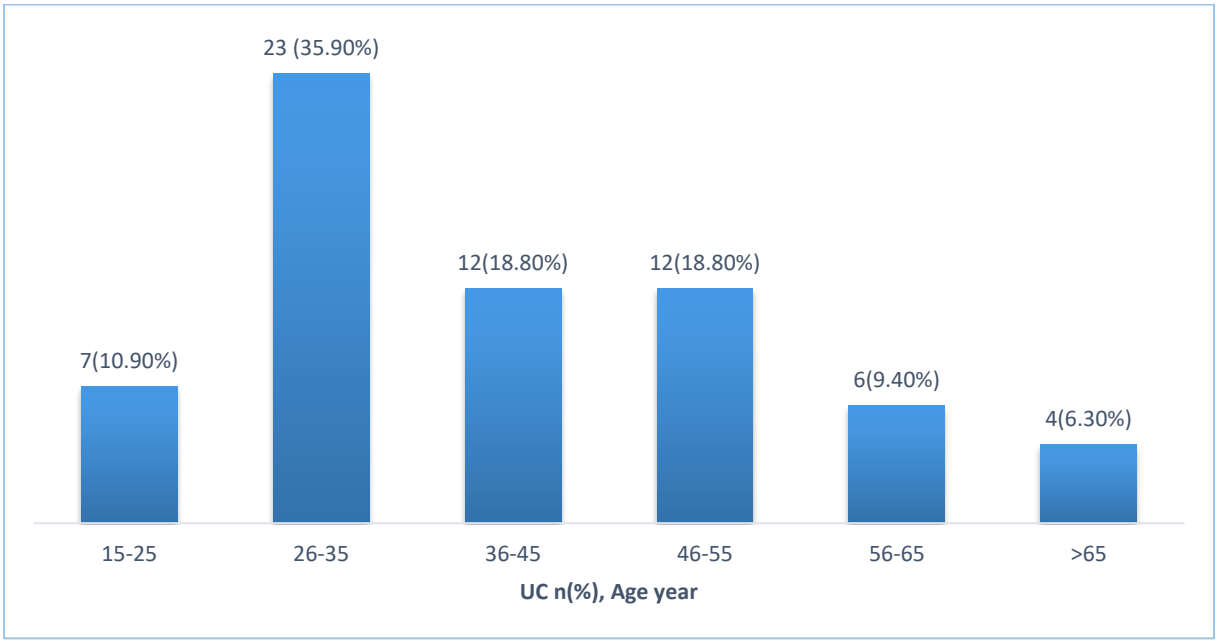

Figure 1. Age distribution of patients presenting with ulcerative colitis (UC), n=64

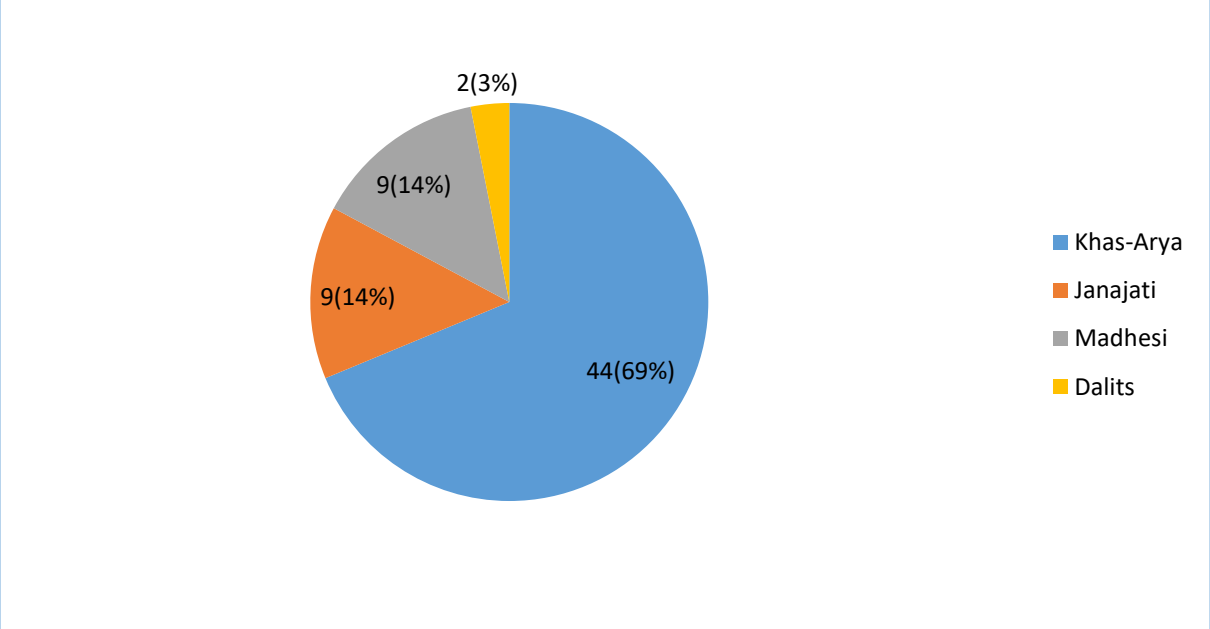

Figure 2. Ethnic distribution of UC patients, n=64

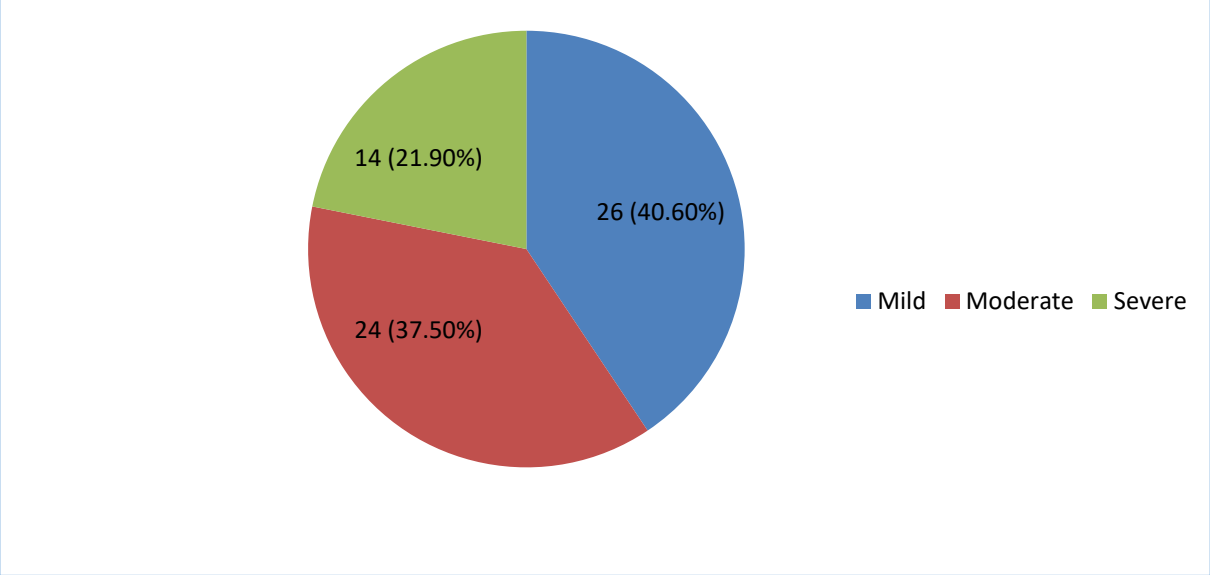

Figure 3. Disease severity of UC based on Truelove and Witts criteria, n=64

Table 1. Association between pancolitis (E3 disease) and severe UC according to Truelove and Witts and UCEIS criteria, n=64

Pancolitis (E3 disease)	Severe UC (Truelove and Witts) n(%)	Severe UC (UCEIS) n(%)	p-value (Truelove and Witts/ UCEIS)	Phi coefficient (Truelove and Witts/ UCEIS)
Yes	12(85.7%)	10(83.3%)	0.001 / 0.004*	0.43 / 0.37
No	2(14.3%)	2(16.7%)		

*Fisher's exact test

Discussion

This study offers insights into the clinical and demographic profile of UC patients at a tertiary care centre in Nepal. Patients were relatively young with a mean age 40.84±14.56 years, most common 26 to 35 years, which is consistent with other Nepalese studies.[6-8] The male-to-female ratio was 1.06:1, with males slightly more affected, similar to results from other studies.[3,7,8]

Chronic bloody diarrhoea was the most frequent clinical presentation in 46(71.90%), followed by per rectal bleeding in 16(25%) patients. A similar study in Nepal also identified chronic bloody diarrhoea as the most common presentation.[6] However, other studies reported rectal bleeding as the most prevalent symptom.[7,8] Differences in disease extent, treatments received, and study design (hospital-based versus outpatient settings) likely explain these variations in presenting symptoms.

In this study, 14(21.90%) patients had EIM other than gastrointestinal symptoms, with 12 patients experiencing polyarthralgia. This prevalence was higher than that found in other studies from Nepal (12% and 16.60%)[7,8] as well as studies from China, Southeast Asia, and Australia (6.10%, 13%, and 3.60%, respectively).[2,9,10] However, the overall prevalence of any EIM in UC was reported as 33.20% in an Indian study.[11] Western studies have shown a broader range of EIM prevalence, from 29% to 50% in UC.[12,13] This variation in EIM prevalence likely reflects genetic, environmental, clinical severity, and methodological differences across populations and studies.

Regarding disease extent of UC, 29(45.30%) patients had E3 disease, followed by E2 in 24 (37.50%), and E1 in 11(17.20%) patients. This distribution was similar to findings from the Indian Society of Gastroenterology (ISG) task force study in 2012, where most patients (42.80%) had extensive colitis, followed by distal colitis (38.80%) and proctitis (18.30%).[14] This

pattern contrasts with other studies conducted in Nepal[6-8] and various parts of Asia and Australia, which reported higher incidences of proctitis, followed by left-sided colitis and pancolitis.[3,9,15] Although 26(40.60%) were classified as having mild disease by Truelove and Witts criteria, and 34(53.1%) were categorised as mild by the Ulcerative Colitis Endoscopic Index of Severity (UCEIS) score, a majority (45.3%) presented with pancolitis. This indicates a discordance between disease severity assessed clinically by Truelove and Witts and endoscopically by UCEIS score and disease extent. This finding contrasts with another study, where the clinical severity of the disease aligned with its extent, with mild forms being the most common, followed by moderate and severe forms.[8]

However, there was a statistically significant association between pancolitis (E3 disease) and UC severity, based on Truelove and Witts criteria ($p=0.001$) with a large effect size ($\phi=0.43$), and UCEIS score ($p=0.004$) with a mild to moderate effect size ($\phi=0.37$). This may be attributed to the extensive mucosal involvement in pancolitis, which can lead to more frequent and severe diarrhoea, rectal bleeding, and anaemia, thereby contributing to higher severity scores in both the clinical and endoscopic assessments.

One of the strengths of this study is the dual assessment of disease severity of UC using both clinical (Truelove and Witts) and endoscopic (UCEIS) indices, enhancing the reliability of severity classification. Additionally, by focusing on a Nepalese population in a tertiary care setting, the study adds locally relevant data to a field that remains underexplored in South Asia. These findings may support clinicians in recognising the spectrum of UC presentation.

There are some limitations of our study. The single-centre design and relatively small sample size may not fully represent Nepal's diverse population. Our findings may not represent rural populations or milder cases managed in primary care. Additionally, the cross-sectional nature limits our ability to assess disease progression or treatment outcomes over time. Therefore, multicentre studies with a larger sample size and longitudinal follow-up would offer more comprehensive data, enhancing the understanding of UC in the Nepalese population.

Conclusion

This study provides insights into the clinical and demographic profile of ulcerative colitis patients at a tertiary care centre in Nepal. Our findings demonstrate several distinctive patterns. A predominance of extensive colitis (E3 disease), high rates of chronic bloody diarrhoea as the presenting symptom, and a notable presence of extra-intestinal manifestations, particularly polyarthralgia. There was a statistically significant association between pancolitis and ulcerative colitis severity, based on Truelove and Witts criteria and UCEIS score, underscoring the need for careful assessment beyond symptom severity. Further multicentre, prospective studies with larger cohorts and longitudinal follow-up may help understand the disease spectrum and outcomes in the Nepalese population.

Author contribution

Concept and Design: RP; Literature search: RP, RPS; Data acquisition and compilation: RP, RPS; Statistical analysis and manuscript preparation: RP; Manuscript editing and review: RP; Accountability: All authors

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Conflict of interest

None

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Supplementary material

The data and supplementary material that support the findings of this study are available from the corresponding author upon reasonable request.

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