

International Journal of Medicine

<https://www.theinternationalmedicine.com>



Research Article

Prevalence of microscopic colitis in patients with diarrhea predominant IBS - A hospital-based study

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Received -26/08/2025 | Reviewed - 02/09/2025 | Accepted - 12/09/2025 | Published - 24/09/2025

Abstract

Background: Microscopic colitis is defined as a clinical syndrome presenting with chronic watery diarrhea, having no alterations of the large bowel on endoscopic and radiological investigations. Thereby, histopathology is the only definitive diagnosis for this entity. In this study, we present the prevalence of microscopic colitis in a well-defined population of Northern India. **Materials and methods:** The study was conducted over a period of 12 months. A detailed clinical history was obtained from patients clinically diagnosed as irritable bowel syndrome-Diarrhea predominant following which thorough clinical examination was performed and an endoscopic biopsy was taken from terminal ileum or colon. Total of 50 cases of chronic watery diarrhea were included in the study. **Results:** Of 50 cases, maximum cases 14(28%) were in the age group of 21-30 years. Duration of diarrhea was from 1.2 to 6 months. 30% (n=15) had history of diarrhea for 3 months duration. Of the 50 cases studied, 28% cases (n=14) were diagnosed as microscopic colitis and 72% cases (n=36) were diagnosed as Chronic nonspecific colitis. Of 14 cases of microscopic colitis, 12 (86%) were males and 2 (14%) were females. All the 14 diagnosed cases of microscopic colitis were of lymphocytic variant. **Conclusion:** This study highlights the high prevalence of microscopic colitis (28%) in this northern part of India and emphasizes the fact that there are chances of missing this entity by an unaware pathologist as it has overlapping features with irritable bowel syndrome.

Keywords: Biopsy, diarrhea, lymphocytic colitis

INTRODUCTION

Microscopic colitis refers to a clinical syndrome of unknown etiology, with patients presenting with chronic watery diarrhea. Moreover, on endoscopic and radiological investigations, no definite pathology in the large bowel is seen (1). As the name suggests, this condition can only be diagnosed by histopathological examination. Earlier it was considered to be a rare condition, but now its prevalence has increased upto 20% in patients undergoing colonoscopy for chronic diarrhea (2). It is more common among the elderly population (3).

The two main subtypes of microscopic colitis are lymphocytic colitis (LC) and collagenous colitis (CC). Both these conditions share common clinical features along with endoscopically normal colonic mucosa (4).

The main features of LC are an increased number of intraepithelial lymphocytes along with infiltration of lymphocytes in the lamina propria. However, in CC, thickening of the subepithelial collagen layer is seen, together with a chronic mononuclear inflammation in the lamina propria (5).

MC have been subdivided into many other rare subtypes – microscopic colitis with giant cells, paucicellular LC, cryptal LC, pseudomembranous CC, microscopic colitis with granulomatous inflammation and microscopic colitis not otherwise specified (6). Epidemiological study have shown that the incidence rate for CC is 2.6/100,000 population and 2.2 to 14 inhabitants per 100,000 inhabitants for LC (7).

The etiology of MC is not yet ascertained. However, it is widely suggested that a luminal agent accentuates an uncontrolled immunologic response in the mucosa of genetically predisposed individuals (8).

There is lack of information regarding the prevalence of microscopic colitis in India. In an earlier study from North India, 3.7% of patients presenting with chronic diarrhea were diagnosed as microscopic colitis (9).

This study was undertaken to determine the histological abnormalities in endoscopically normal mucosa of terminal ileum and colon in patients with chronic diarrhea. Moreover, early diagnosis of microscopic colitis will help in early treatment leading to significant clinical improvement of patients.

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DOI: 10.5455/im.3254687

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MATERIALS & METHODS

The study was conducted in the Department of Pathology, Himalayan Institute of Medical Sciences, Swami Ram Nagar, Dehradun, over a period of 12 months. Subjects were recruited from patients presenting in Medicine OPD/IPD, HIMS, Dehradun, and clinically diagnosed as irritable bowel syndrome-Diarrhea predominant. Proper informed written consent was taken from the subjects after obtaining clearance from

the ethical committee.

The following criteria was taken into consideration to make a diagnosis of collagenous colitis (10) –

1. A diffusely distributed and thickened subepithelial collagen layer > 10 μ .
2. Number of intraepithelial lymphocytes less than 20/100 surface colonocytes.
3. Epithelial damage such as flattening and detachment.
4. Inflammation in the lamina propria with mainly mononuclear cells.

The following criteria was taken into consideration to make a diagnosis of lymphocytic colitis (10)-

1. An increase in intraepithelial lymphocytes more than 20/100 colonocytes was taken as positive.
2. A subepithelial collagen layer <10 μ
3. Epithelial damage
4. Inflammation in the lamina propria with mainly mononuclear cells

RESULT

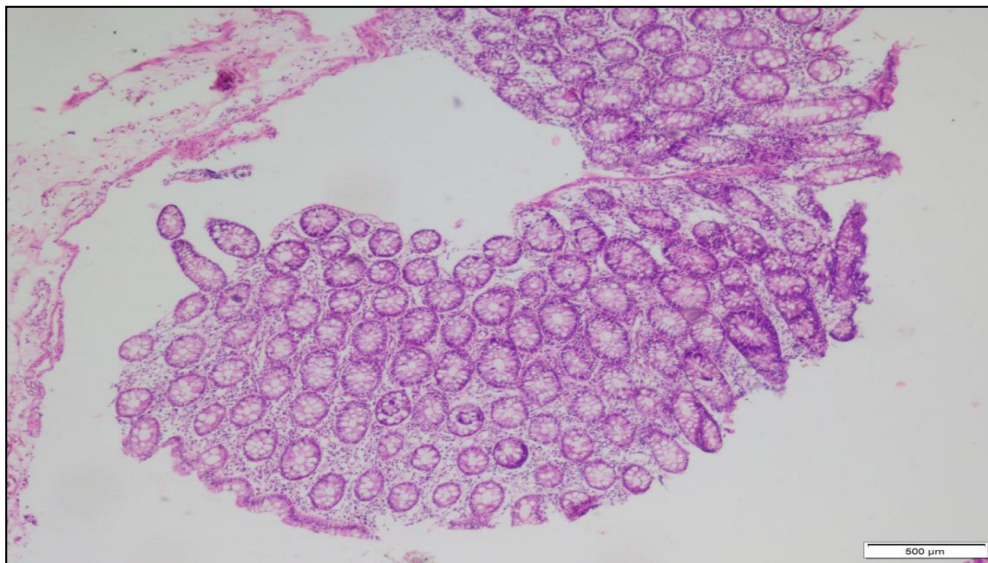
Out of 50 cases, maximum cases 14 (28%) were in the age group of 21-30 years followed by 12 (24%) which were in the age group of 51-60 years. Only 1 (2%) was below 20 years of age. 4 patients were above 60 years of age. There was a male preponderance with male to female ratio of 2.3:1. 70% of the patients were males and females comprised of 30% of the total cases.

Duration of diarrhea was from 1.2 months to 6 months. 30% (n=15) had history of diarrhea for 3 months duration whereas 26% (n=13) had 4 months history. 2% came with only 1.2 months history of diarrhea and 10% of more than 6 months. Of 50 cases, maximum number of cases (n=19) had a diarrhea frequency of 4 episodes per day whereas 18 cases presented with 5 episodes per day. Only 2 patients had a diarrhea frequency of 7 episodes per day.

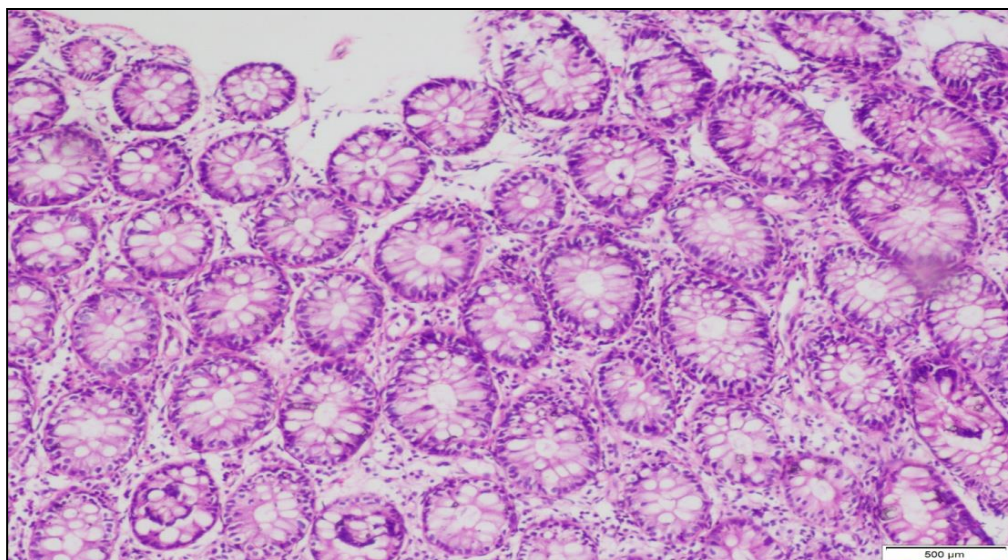
Most patients presented with pallor (n=11) followed by 10 patients with history of mucus in stools. 9 patients had history of nocturnal diarrhea. Only one patient had signs of multivitamin deficiency. There was no significant association in the clinical presentation in cases of microscopic colitis and chronic non specific colitis.

The diagnosis of microscopic colitis was established in 14 cases (28%). All the 14 diagnosed cases of Microscopic colitis were of lymphocytic variant and none showed collagenous variant. Rest of the cases (n=36, 72%) did not fit into either category and are thus included under the category of Chronic non-specific colitis. Out of 14 diagnosed cases of microscopic colitis, maximum number of cases (n=5) were in the age group of 51-60 years followed by 21-30 years (n=4). The youngest patient was 24 years old and the oldest patient was 65 years old. Out of 14 cases of microscopic colitis, 12 (86%) were males and 2 (14%) were females with a male to female ratio of 6:1.

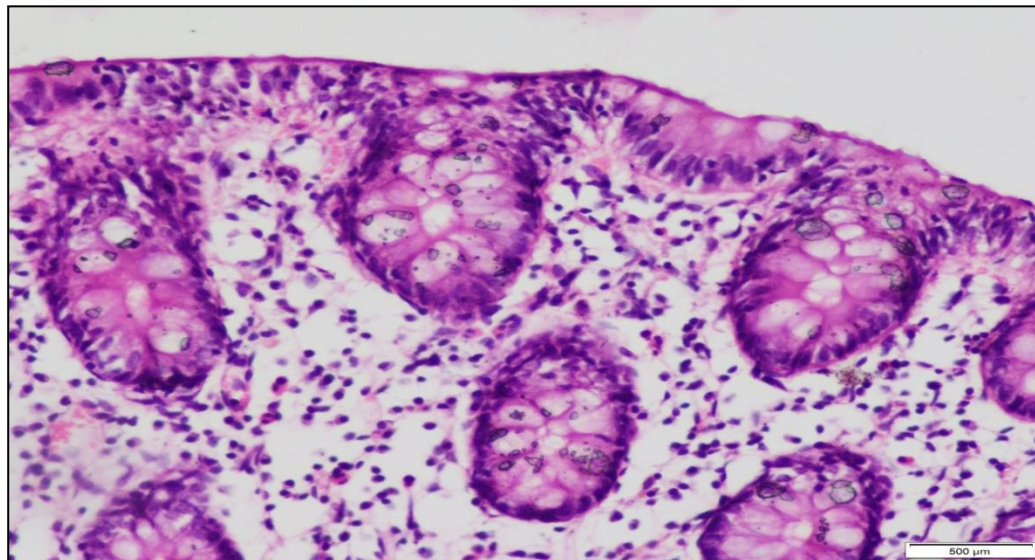
The mean duration of diarrhea in Microscopic colitis was found to be 3.25 months whereas in chronic non specific colitis it was 3.87 months. The values were statistically not significant at p value > 0.05. The average frequency of diarrhea in Microscopic colitis was found to be 5 episodes per day whereas in chronic non specific colitis it was found to be 4 episodes per day. No statistical significance was found.



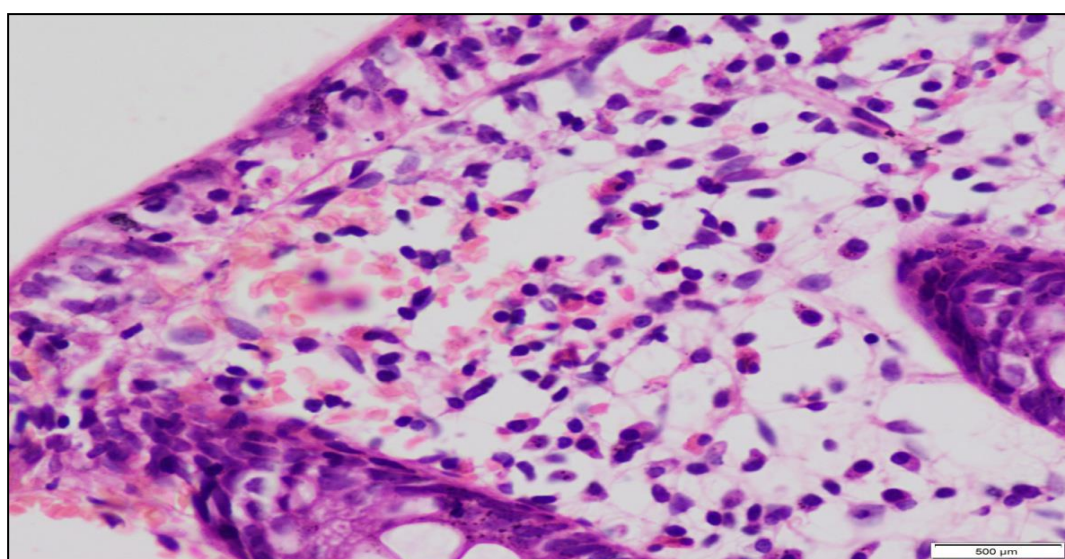
Photomicrograph 1: Microscopic colitis showing mostly denuded surface epithelium (H & E, 40X)



Photomicrograph 2: Microscopic colitis showing chronic mononuclear inflammatory infiltrate in the lamina propria (H & E, 100X)



Photomicrograph 3: Microscopic colitis in high power view showing increase in surface intraepithelial lymphocytes (H & E, 400X)



Photomicrograph 4: Chronic non-specific colitis in high power view showing abundant eosinophils in lamina propria (H & E, 400X).

Discussion:

Diarrhea-predominant IBS is a common gastro-intestinal disorder, but it has high possibility of being misdiagnosed. It is because of lack of characteristic clinical features and specific diagnostic methods (11). Microscopic colitis has emerged as a common cause of chronic diarrhea in the last decade, particularly among the elderly population (12). Although the incidence of this disease seems to be rising, there has been very little documentation of this entity in our country. The importance of recognizing this condition is crucial because chronic diarrhea is a debilitating illness and a proper treatment may help a lot of patients to return to normal life.

After a detailed histopathological examination of the 50 samples, the diagnosis of microscopic colitis was established in 14 cases (28%). All the 14 diagnosed cases of Microscopic colitis were of lymphocytic variant and none showed collagenous variant. Rest of the cases (n=36, 72%) did not fit into either category and are thus included under the category of chronic non-specific colitis.

In a retrospective study conducted by Sushil Falodia et al at AIIMS, New Delhi on 29 patients between 1999-2005, 7 (24.5%) were diagnosed as collagenous colitis, 4 (13.8%) as lymphocytic colitis, 7 (24.1%) as minimal change colitis and 11 (37.9%) as microscopic colitis - not otherwise specified. They found no significant correlation between disease type and clinical manifestations similar to our study (10).

Another study was conducted in India by Vatsala Mishra et al at Motilal Nehru Medical College, Allahabad. They conducted study on 400 colonic biopsies from patients presenting with chronic diarrhea out of which only 15 (3.7%) had evidence of microscopic colitis which is sharply discordant to our study. 5 out of 15 biopsies (33%) were diagnosed as collagenous colitis, 10 biopsies (67%) had evidence of lymphocytic colitis. 10 out of 15 cases were clinically diagnosed as irritable bowel syndrome. In the remaining five, an infective etiology was suspected (9). However, similar to this study, most cases were of the lymphocytic variant.

This study is different from earlier reports from India as it highlights the high prevalence of microscopic colitis without going into details of minor variants and showing chances of missing this entity by an unaware pathologist as it clinically has overlapping features with irritable bowel syndrome.

In a study conducted by Darell S Pardi et al, they found the mean age for lymphocytic colitis as 68 years (3). In a study conducted in Egypt, the mean age of MC was found to be 41 years (13). Adriana Stoicescu et al performed a large scale study on 247 patients and found the mean age of microscopic colitis as 45.93 ± 16.10 years (11). In the present study, maximum number of cases (n=5) were in the age group of 51-60 years followed by 21-30 years (n=4). The youngest patient was 24 years old and the oldest patient was 65 years old. The mean age was 41.93 ± 14.48 years. Thus, the findings in this study were almost identical to most studies conducted throughout the world.

Levent Erdem et al conducted a study on 114 colonic biopsy of patients with chronic diarrhea, 7 out of 12 diagnosed cases of lymphocytic colitis were females

(14). However, in this study males (n=12, 86%) outnumbered females (n=2, 14%). The health seeking behaviour of males is possibly the best explanation for this male predominance in the diagnosis of microscopic colitis.

In an European study by Gianluca Ianiro et al, they found that the severity of symptoms is quite variable, upto 22 % of patients have more than 10 bowel movements per day and upto 27% have nocturnal diarrhea (1). An African study by Ahmed S. Gado on 22 patients diagnosed with MC, the mean duration of diarrhea was 23 months (range: 2-120 months). 82% patients had abdominal pain/discomfort (13). In this study, the

mean duration of diarrhea in MC was found to be 3.25 months ranging from 2 to 5 months. The average frequency of diarrhea was found to be of 5 episodes per day. Only 1 case had a diarrhea frequency of more than 7 episodes per day. Most of the parameters are quite variable from other studies. The values were statistically not significant at p value > 0.05 . Since the number of subjects in this study are very small, larger study is required to obtain any statistical significance.

Thus, this study reflects that the possibility of microscopic colitis should be considered while examining colonoscopic biopsy of a patient with chronic watery diarrhea and normal colonoscopy to avoid any misdiagnosis that may affect the treatment and prognosis of the patient.

Conclusion:

To conclude, considering the high prevalence (28%) of microscopic colitis in patients presenting with chronic watery diarrhea having normal colonoscopic findings, biopsy is imperative during colonoscopy in this category of patients. Although the number of our cases was not enough to answer the question of how many biopsies should be taken and from which part of the colon, the fact that histopathological criteria were determined on all colonic regions in patients with lymphocytic colitis on whom biopsy was performed is promising in terms of diagnostic convenience. Moreover, based on symptom severity and disease duration, a stepwise approach to treatment is suggested.

References

1. Ianiro G, Cammarota G, Valerio L, Annicchiarico BE, Milani A, Siciliano M, et al. Microscopic colitis. *World Journal of Gastroenterology* : WJG. 2012;18(43):6206-15.
2. Bohr J, Wickbom A, Hegedus A, Nyhlin N, Hultgren Hörnquist E, Tysk C. Diagnosis and management of microscopic colitis: current perspectives. *Clinical and Experimental Gastroenterology*. 2014;7:273-84.
3. Gentile NM, Khanna S, Loftus EV, Jr., Smyrk TC, Tremaine WJ, Harmsen WS, et al. The epidemiology of microscopic colitis in Olmsted County from 2002 to 2010: a population-based study. *Clinical gastroenterology and hepatology : the official clinical practice journal of the American Gastroenterological Association*. 2014;12(5):838-42.
4. Mohamed N, Marais M, Bezuidenhout J. Microscopic colitis as a missed cause of chronic diarrhea. *World Journal of Gastroenterology* : WJG. 2011;17(15):1996-2002.
5. Ingle SB, Adgaonkar BD, Hinge CR. Microscopic colitis: Common cause of unexplained nonbloody diarrhea. *World Journal of Gastrointestinal Pathophysiology*. 2014;5(1):48-53.
6. Tysk C, Wickbom A, Nyhlin N, Eriksson S, Bohr J. Recent advances in diagnosis and treatment of microscopic colitis. *Annals of Gastroenterology : Quarterly Publication of the Hellenic Society of Gastroenterology*. 2011;24(4):253-62.
7. Munch A, Aust D, Bohr J, Bonderup O, Fernandez Banares F, Hjortswang H, et al. Microscopic colitis: Current status, present and future challenges: statements of the European Microscopic Colitis Group. *Journal of Crohn's & colitis*. 2012;6(9):932-45.
8. Munch A, Langner C. Microscopic colitis: clinical and pathologic perspectives. *Clinical gastroenterology and hepatology : the official clinical practice journal of the American Gastroenterological Association*. 2015;13(2):228-36.
9. Misra V, Misra SP, Dwivedi M, Singh PA, Agarwal V. Microscopic colitis in patients presenting with chronic diarrhea. *Indian journal of pathology & microbiology*. 2010;53(1):15-9.
10. Falodia S, Makharia GK, Sateesh J, Deo V, Tevatia MS, Gupta SD. Spectrum of microscopic colitis in a tertiary care centre in India. *Trop Gastroenterol*. 2007;28(3):121-5.
11. Stoicescu A, Becheanu G, Dumbrava M, Gheorghe C, Diculescu M. Microscopic colitis - a missed diagnosis in diarrhea-predominant irritable bowel syndrome. *Maedica*. 2012;7(1):3-9.
12. Storr MA. Microscopic Colitis: Epidemiology, Pathophysiology, Diagnosis and Current Management—An Update 2013. *ISRN Gastroenterology*. 2013;2013:12.
13. Gado AS, Ebeid BA, El Hindawi AA, Akl MM, Axon AT. Prevalence of Microscopic Colitis in Patients with Chronic Diarrhea in Egypt: A Single-center Study. *Saudi Journal of Gastroenterology : Official Journal of the Saudi Gastroenterology Association*. 2011;17(6):383-6.
14. Erdem L, Yildirim S, Akbayir N, Yilmaz B, Yenice N, Gültekin OS, et al. Prevalence of microscopic colitis in patients with diarrhea of unknown etiology in Turkey. *World Journal of Gastroenterology* : WJG. 2008;14(27):4319-23.