# Ulcerative Colitis in a North Indian Hospital: Current Trends

**M. P. SHARMA**, MD, *Assistant Professor*

**S. K. SARIN**, MD, *Lecturer*

Department of Gastroenterology, All India Institute of Medical Sciences, New Delhi, India

Owing to the frequency and chronic nature of the disease, its propensity for complications and the need for institutionalised specialty care, there has been extensive research in the field of ulcerative colitis in the West[1].

Ulcerative colitis is, however, not uncommon in India[2]; there have been a number of reports in the past two decades[2–7]. Most of them were based on observations made on a limited number of patients and are therefore conflicting. The true incidence and clinical picture of ulcerative colitis in Indian patients is still not clear. Subtle differences have been suggested between patients with ulcerative colitis seen in India and those seen in the West[3,4]. This article attempts to highlight the incidence, clinical features and complications based on our experience of observing 218 patients with ulcerative colitis in the apex referral hospital of India. A comparison with disease trends as reported from the West is made.

## Materials and Methods

This retrospective study includes 218 consecutive patients with ulcerative colitis seen at the Gastroenterology Services of the All India Institute of Medical Sciences (AIIMS), New Delhi, between 1972 and 1981. The diagnosis of ulcerative colitis was made on the basis of (a) a history of chronic diarrhoea, with passage of blood and mucus, uncontrolled by adequate anti-bacterial and anti-amoebic treatment, together with (b) negative results from two fresh stools examined for parasites, and sigmoidoscopic findings of congestion, oedema, ulceration, granularity and fragility of the mucosa[8]. The patients were grouped into mild, moderate and severe disease according to standard criteria[9].

In every patient a thorough clinical evaluation and routine investigations like haemogram, stool for trophozoites and cysts, and sigmoidoscopic examination were carried out. In a majority of the patients a plain X-ray of the abdomen, barium enema, amoebic serology, liver function tests and rectal biopsy were also carried out.

## Results

There were 136 males and 82 females, a ratio of 1.6:1. Of the patients, 172 (89 per cent) were between 16 and 45 years of age. Disease was rare below 15 (4 per cent) and above 60 (3 per cent) years of age. The mean age was 33.1 years (Table 1). There were 27 patients (12.4 per cent) with mild, 144 (66.1 per cent) with moderate and 47 (21.5 per cent) with severe ulcerative colitis (Table 2).

**Table 1.** Age and sex distribution of ulcerative colitis in 218 patients.

| Age (years) | Male | Female |
|---|---|---|
| 0–15 | 6 | 2 |
| 16–30 | 65 | 37 |
| 31–45 | 37 | 33 |
| 46–60 | 22 | 10 |
| 61–75 | 6 | — |
| >75 | — | — |
| | 136 | 82 |

**Table 2.** Duration of the presenting episode.

| Duration | Mild | Moderate | Severe |
|---|---|---|---|
| 0–1 yr— | | | |
| 0–6 mth | 7 | 88 | 32 |
| 7–12 mth | 6 | 33 | 11 |
| 1–2 yr | 8 | 12 | 4 |
| 2–3 yr | 4 | 8 | — |
| 3–4 yr | 1 | 1 | — |
| >4 yr | 1 | 2 | — |
| Total patients | 27 | 144 | 47 |

The total duration of the illness varied from three days to 25 years. While 49 per cent of the severe ulcerative colitis patients had the illness for less than one year, 85 per cent of the moderate and 81 per cent of the mild ulcerative colitis had the disease for more than one year (Table 3).

Sixty-four patients (29 per cent) presented with their first attack of ulcerative colitis. The remainder (154 patients) had a variable number of relapses during the course of their disease (Table 4).

The most important presenting complaint was the history of passage of blood mixed with stools which was seen in 98 per cent of the patients. In 94 per cent the

**Table 3.** Total duration of ulcerative colitis.

| Period (years) | Mild | Moderate | Severe |
|---|---|---|---|
| <1 | 5 | 22 | 23 |
| 1–4 | 5 | 67 | 8 |
| 5–8 | 8 | 33 | 6 |
| 9–12 | 6 | 11 | 6 |
| 13–16 | 1 | 6 | 4 |
| 17–20 | 2 | 4 | — |
| >20 | — | 1 | — |
| Total patients | 27 | 144 | 47 |

**Table 4.** Number of relapses experienced by patients with ulcerative colitis.

| No. of relapses | No. of patients | % |
|---|---|---|
| 1 | 37 | 17 |
| 2 | 35 | 16 |
| 3 | 40 | 19 |
| 4 | 12 | 6 |
| 5 | 13 | 6 |
| 6 | 5 | 2 |
| 7 | 3 | 1 |
| >7 | 9 | 4 |

stools were loose and frequent. Nocturnal frequency was recorded in 78 per cent. The onset of the illness was mild to moderate in most of these patients. Abdominal pain was present in 53 per cent; it was usually periumbilical or diffuse in distribution and mild to moderate in intensity. Significant weight loss was complained of by 35 per cent of the patients (Table 5).

**Table 5.** Clinical features.

| Symptoms | Mild | Moderate | Severe | Total patients | % |
|---|---|---|---|---|---|
| Blood in stool | 26 | 144 | 46 | 214 | 98 |
| Mucus in stool | 26 | 144 | 46 | 214 | 98 |
| Loose motions | 24 | 135 | 46 | 205 | 94 |
| Increased frequency | 24 | 135 | 46 | 205 | 94 |
| Abdominal pain | 9 | 82 | 25 | 116 | 53 |
| Fever | 1 | 30 | 9 | 40 | 18 |
| Pallor | 3 | 59 | 27 | 89 | 41 |
| Weight loss | 2 | 55 | 17 | 75 | 35 |
| Pedal oedema | — | 14 | 10 | 24 | 11 |
| Hepatomegaly | — | 22 | 6 | 28 | 13 |
| Splenomegaly | — | 5 | — | 5 | 2 |
| Abdominal tenderness | — | 1 | 8 | 9 | 4 |
| Lump in abdomen | — | 22 | — | 2 | 1 |

Physical examination was generally unremarkable. Pallor and pedal oedema were recorded in 41 per cent and 11 per cent of the patients respectively. Hepatomegaly was found in 13 per cent. It was generally minimal and firm, with round edges. Both hepatomegaly and pedal oedema were more common in patients with moderate and severe disease. While mild abdominal tenderness was present in most of the patients, significant tenderness was present in only 4 per cent (Table 5).

Important systemic complications of ulcerative colitis were seen in seven patients (3 per cent) and included polyarthralgia in five (2 per cent), ankylosing spondylitis (HLA-B-27 positive) in one and monoplegia of the upper arm without any other neurological sign in another patient. A number of other diseases was found associated with ulcerative colitis, such as haemorrhoids in 22 (10 per cent), pulmonary tuberculosis in six (2.7 per cent), bronchial asthma in six (2.7 per cent), hypertension in four (2 per cent), etc., as shown in Table 6.

**Table 6.** Complications and diseases associated with ulcerative colitis.

| | |
|---|---|
| Haemorrhoids | 22 |
| Polyarthralgia | 5 |
| Renal stone | 3 |
| Lichen planus | 2 |
| Fistula in ano | 2 |
| Ankylosing spondylitis | 1 |
| Parotid abscess | 1 |
| Monoplegia | 1 |

Sigmoidoscopic appearances were graded as I, II, and III, according to Bacon's classification[8]. Sigmoidoscopy was normal in seven cases with clinically mild or moderate disease. In all the other cases varying degrees of abnormality were observed. No clear correlation was seen between the clinical severity of the disease and the sigmoidoscopic findings. This was evident, as 27 patients (5 per cent) with severe colitis had only mild to moderate changes on sigmoidoscopy (Table 7).

**Table 7.** Sigmoidoscopic findings.

| Sigmoidoscopy | Mild | Moderate | Severe |
|---|---|---|---|
| Normal | 4 | 3 | — |
| Proctitis | 2 | 5 | — |
| Grade I changes | 13 | 17 | 3 |
| Grade II changes | 8 | 96 | 24 |
| Grade III changes | — | 23 | 20 |

Severe anaemia was seen in only 23 patients (15 per cent). Liver function tests, including serum proteins, serum bilirubin and serum transaminases were done in 96 patients. Hypoalbuminaemia (<2.5 g per cent) was found in 27 patients (28 per cent). Mean serum albumin was $2.9 \pm 1.13$ g. Serum transaminases were abnormally raised in only 3 patients (Table 8). Plain X-ray of the abdomen was done in 184 patients. It showed dilated small and/or large bowel loops in 25 patients (11 per cent). Six patients (2.7 per cent) had marked colonic dilatation (>7 cm) on plain X-ray of the abdomen and clinically they were consistent with the diagnosis of toxic megacolon. In two other patients, free gas under the dome of the diaphragm was detected, which was suggestive of perforation.

Barium enema was carried out in 126 patients to see the distribution of lesions (Table 9). In more than half (54

**Table 8.** Laboratory investigations.

| Abnormal investigation | Moderate | Severe |
|---|---|---|
| Hb (<7 g %) | 28 | 4 |
| TWBC (>12,000/mm³) | 8 | 7 |
| ESR (>20 mm/1st hr) | 84 | 36 |
| *Abnormal plain X-ray abdomen | 18 | 7 |
| †Positive amoebic serology | 2 | — |
| Hypoalbuminaemia (<2.5 g %) | 17 | 16 |

*Done in 184 patients only
†Done in 93 patients only

**Table 9.** Extent of ulcerative colitis as assessed by barium enema (126 patients).

| Barium enema findings | Mild | Moderate | Severe |
|---|---|---|---|
| Normal | 8 | 15 | 1 |
| Recto-sigmoid | 3 | 15 | 6 |
| Descending colon | — | 22 | 5 |
| Transverse colon | — | 22 | 7 |
| Right colon total | — | 15 | 5 |
| Ileum | — | 2 | — |
| | 11 | 91 | 24 |

per cent) of the patients disease was found to be limited to the left side of the colon. Pseudopolyposis was seen in 19 patients (9 per cent). Malignancy was suspected in seven patients with radiologically demonstrated single or multiple strictures or an irregular filling defect or a mass in the colon. Malignancy was, however, confirmed at surgery in only one patient.

Rectal biopsy was done in all except three patients and the histopathological findings of distortion of glands, cryptitis and crypt abscesses were reported to be compatible with the clinical diagnosis of ulcerative colitis.

## Discussion

Though ulcerative colitis is a disease of the West, it is not rare in India[2–7], where its frequency has been reported to be from 9.4 to 24.4 cases per 10,000 hospital admissions[4]. Two hundred and eighteen cases of ulcerative colitis seen in a single unit of a referral hospital during a period of 10 years is a further indication that the disease is not rare in India. This is comparable with 624 patients in a period of 24 years reported by Edwards and Truelove[10].

The observations of the present study show certain differences between Indian and Western patients with ulcerative colitis.

In contrast to Western series in which females are equally[11] or more commonly[12] affected than males, the present and other Indian studies have found a higher male to female predilection[2–5]. This cannot be due to a smaller number of female beds, as a patient with ulcerative colitis will definitely seek hospital admission because of the severity of the disease[2,4]. About half of our patients were between 16 and 30 years of age, a significantly younger group than that found in the West[9].

There are no clear data about the severity of the initial episode of ulcerative colitis in India. Vakil and Mehta[6] reported mild disease in 68.5 per cent, severe in 28.0 per cent and fulminant in 3.5 per cent of the patients. Tandon and co-workers[3] recorded mild ulcerative colitis in 43.5 per cent of the patients and severe disease in the rest. In the present series, mild disease was seen in 12.4 per cent, moderate in 66.1 per cent and severe in 21.5 per cent. This is in contrast to the Western series in which the frequency of mild, moderate and severe disease has been reported to be 66.4 per cent, 22.9 per cent and 10.7 per cent respectively[9]. This pattern of disease in our series may not represent the whole picture, as most of our patients were referred cases.

In the present study the duration of the illness was looked at from two angles, the duration of the presenting episode, and the total duration of the disease. This gave us valuable information. It was found that about 42 per cent of patients continued to suffer from the disease for a period of more than six months, due either to delayed diagnosis or inadequate treatment before attending the specialty clinic. This proportion is much higher than in the West, where only 22 per cent of patients required such a long period of management. This is probably related both to lack of awareness of the disease and to the widely held belief among the medical fraternity in India that ulcerative colitis is uncommon and these cases are most probably due to chronic amoebic dysentery.

Of the patients 71 per cent had more than one attack of ulcerative colitis and only 29 per cent presented during the first episode, compared with the Western figure of 39 per cent. Earlier studies have also suggested that relapsing, remitting or chronic continuous ulcerative colitis are the commonest modes of presentation of the disease[7].

Systemic complications related to ulcerative colitis were infrequent (3 per cent) and included polyarthralgia, HLA-B-27 positive ankylosing spondylitis and monoplegia. In earlier studies from our centre[3] and by others[4], systemic complications were not reported. Manifestations like sclerosing cholangitis, uveitis and skin lesions were not seen in our patients as compared to the incidence of 7 per cent[13], 5–10 per cent[14], 3 per cent (erythema nodosum), 1–4 per cent (pyoderma gangrenosum)[15], respectively reported in the Western series. All these reports therefore suggest that ulcerative colitis in India is not usually associated with the extracolonic lesions that have been observed in Western countries. The reason for this is not clear, but it could be due to less frequent and lower levels of circulating immune complexes and autoantibodies in our patients[16].

The incidence of associated diseases like pulmonary tuberculosis and bronchial asthma was 2.7 per cent in the present series and was comparable with the figures of 2.4 per cent and 2.6 per cent reported by the Oxford group of workers[9].

The incidence of local complications like fistula in ano was less than 1 per cent as compared with 6–20 per cent in Western series[10,17]. None had perirectal abscess. Pseudopolyposis was seen in 9 per cent of the radiologically studied cases. The incidence of pseudopolyposis has been reported as being from 10–32.5 per cent in the West[9]. Toxic megacolon was seen in 2.7 per cent and colonic

perforation in 1 per cent of patients, compared with a Western incidence of 1.6 per cent and 3.2 per cent respectively[11]. Colonic stricture was found in 3.2 per cent of patients in the present series, which is comparable with other reports from India[5] and much less than the 6.3–11.2 per cent reported from the West[11].

Carcinoma of the colon was detected in only one patient (0.5 per cent). Other Indian studies have not commented on this important complication [2,5], except one report from our centre where carcinoma of the colon was found in 2.9 per cent. In the West, the incidence of carcinoma of the colon has been variably reported from 0.5 per cent to 30 per cent[18,19].

Sigmoidoscopic appearances were suggestive of grade I changes in 15 per cent, grade II in 59 per cent and grade III in 20 per cent, and showed normal mucosa or distal proctitis in 6 per cent of the patients. This is in agreement with some of the earlier Indian studies[2,3]. On the whole, sigmoidoscopic changes in the majority of Indian patients are milder as compared with changes seen in Western patients. A rough correlation between the clinical severity of the disease and the sigmoidoscopic findings was seen in mild and moderate disease; however, this was not true for severe colitis.

Of patients with severe colitis, 57 per cent had only grade II changes on sigmoidoscopy. Moreover, it is worth remembering that normal sigmoidoscopic findings can occasionally be seen in patients with ulcerative colitis[20].

Barium enema studies showed the disease to be limited to the left half of the colon in 75 (60 per cent) of the 126 patients in whom this examination was carried out. Similar observations have been reported in earlier Indian studies[2–5]. This is a much higher rate than that reported in the West. On the other hand, total colonic involvement was seen in only 17 per cent of patients in the present series, compared to 34 per cent in the West[10].

In brief, ulcerative colitis is not an uncommon disease in India. A high index of suspicion will obviate delay in diagnosis. Slight male predominance, younger age, lower incidence of systemic and local complications, rarity of carcinoma, milder sigmoidoscopic changes and localised left-sided involvement of the colon are some of the distinguishing features of patients with ulcerative colitis in India as compared with the West.

## References

1. Farmer, R. G. (1980) in *Clinics in Gastroenterology,* Vol. 9, p. 229. New York: Saunders.
2. Maroo, M. K., Nag, N. K., Sortur, S. V. and Patil, R. S. (1974) *Journal of the Indian Medical Association,* **63,** 350.
3. Tandon, B. N., Mathur, A. K., Mohapatra, L. N., Tandon, H. D. and Wig, K. L. (1965) *Gut,* **6,** 448.
4. Chuttani, H. K., Nigam, S. P., Sama, S. K., Dhanda, P. C. and Gupta, P. S. (1967) *British Medical Journal,* **4,** 204.
5. Pimparkar, B. D. (1973) *Journal of the Indian Medical Association,* **61,** 217.
6. Vakil, B. J. and Mehta, A. J. (1967) *Journal of the Association of Physicians of India,* **15,** 460.
7. Mehta, S. K. (1981) in *Progress in Clinical Medicine in India,* Series 4, pp. 275–300. (ed M. M. S. Ahuja.) New Delhi: Arnold Heineman.
8. Bacon, H. E. (1958) *Ulcerative colitis.* Philadelphia: Lippincott.
9. Truelove, S. C. and Witts, L. J. (1955) *British Medical Journal,* **2,** 1041.
10. Edwards, F. C. and Truelove, S. C. (1963) *Gut,* **4,** 299.
11. Mendeloff, A. I. (1980) in *Clinics in Gastroenterology,* Vol. 9, pp. 259–70. New York: Saunders.
12. Goligher, J. C., de Dombal, F. T., Graham, R. G. and Watkinson, G. (1967) *British Medical Journal,* **2,** 193.
13. Greenstein, A., Janowitz, H. and Sachar, D. (1976) *Medicine,* **55,** 401.
14. Wright, R., Lumsden, K., Luntz, M. H. *et al.* (1965) *Quarterly Journal of Medicine,* **34,** 229.
15. Johnson, M. L. and Wilson, T. H. (1969) *Gut,* **10,** 255.
16. Sharma, M. P., Kar, P. and Malviya, A. N. (1982) *Journal of the Association of Physicians of India,* **30,** 29.
17. Huizenga, K. A. (1980) in *Inflammatory Bowel Disease,* 2nd edn, pp. 202–16. (ed J. B. Kirsner and R. G. Shorter.) Philadelphia: Lea and Febiger.
18. Edwards, F. C. and Truelove, S. C. (1964) *Gut,* **5,** 15.
19. Thayer, W. R. (1980) in *Inflammatory Bowel Disease,* pp. 265–78. (ed J. B. Kirsner and R. G. Shorter.) Philadelphia: Lea and Febiger.
20. Lennard-Jones, J. E., Morson, B. C., Ritchie, J. *et al.* (1977) *Gastroenterology,* **73,** 1280.