Ulcerative colitis in the Indian population of Durban

H. I. RAJPUT, A. R. SEEBARAN, Y. DESAI

Summary

This study on ulcerative colitis in the Indian population of Durban between 1983 and 1987 revealed an incidence of 2.7/100 000 per year. Patients tended to have clinically mild-to-moderate disease, with macroscopic examination showing moderate severity and either extensive or total involvement. No relationship was found between clinical, macroscopic and laboratory indices of severity and extent of disease. The only relationship between laboratory tests and severity was that patients with low albumin values were more likely to have clinically severe disease. Extra-intestinal manifestations were rare, but many patients had liver involvement and colonic strictures. Ulcerative colitis was diagnosed more frequently than tuberculosis of the bowel during the study period, and amoebic dysentery was rarely diagnosed.

Ulcerative colitis has been studied in the Indian population of India and in Indians living in the UK. It has also been described in white, coloured and black populations of the RSA. However, no studies of this disease in the Indian population of Durban or in Indians living in the rest of the RSA have been published. A study was therefore undertaken to describe ulcerative colitis in South African Indians in detail and compare the pattern of disease with that in Indians living in India, those living in the UK, and whites. Indians in South Africa are the 3rd- or 4th-generation descendants of Indians from India, and most of them have settled around Durban.

It has been shown that the clinical severity of ulcerative colitis is not necessarily related to its extent at presentation. Gomes et al. have also shown that the relationship between the macroscopic appearance and the various clinical and laboratory indices of disease activity is inconsistent. However, other studies on Indians in India have shown good correlation between the macroscopic and clinical severity and between extent and severity. We therefore decided to compare these in our population.

Patients and methods

Indians with ulcerative colitis seen for the first time or followed up by the gastro-intestinal clinic at R. K. Khan Hospital between the years 1983 and 1987 were studied. The study was retrospective for the years 1983 - 1985 and prospective thereafter. Patients were referred by general practitioners, mainly from Chatsworth, an area which Indians have occupied for the last 50 years and which forms the catchment area for the hospital. Few patients were referred by specialists. For the purposes of calculating the incidence only patients who lived in Chatsworth were considered. The population of Chatsworth in 1985 was 180 000 (Durban municipality census). General practitioners in the area usually refer their patients with chronic diarrhoea to specialist physicians and surgeons. Specialists serving the area were therefore contacted for details of patients treated by them. These patients were also included in the study.

The diagnosis was based on accepted clinical, sigmoidoscopic, radiological and histological criteria in a patient free from primary bacterial and amoebic infection. Most patients had already received courses of antibiotics and metronidazole. Attention was focused on incidence, age, sex, area of origin in India, religion, clinical features, complications, extra-intestinal manifestations, radiographic findings, laboratory results, treatment and mortality.

Clinical severity was based on a scoring system based on the original study of Truelove and Witts and the more recent study of Powell-Tuck et al. This involved giving patients a score of one for each of the following: general malaise, abdominal pain, anorexia, abdominal tenderness, complications and pyrexia. This was added to the number of loose motions a day (averaged over a week). Macroscopic severity was classified as follows: mild — mild inflammation with loss of vascular pattern plus or minus granularity; moderate — severe inflammation with contact bleeding; and severe — more marked inflammation with friability, ulcers or spontaneous bleeding. Proctitis was defined as inflammation up to 15 cm from the anal margin, rectosigmoiditis as inflammation up to the sigmoid/descending colon junction, and extensive disease as involvement of the rest of the colon but not necessarily of the whole colon. The term total colitis refers specifically to involvement of the whole colon including the ascending colon.

A comparison was made between clinical and macroscopic severity and the extent of involvement. Laboratory measurements (reductions in the haemoglobin (< 14 g/dl) and albumin (< 35 g/l) values, rises in the ESR (≥ 15 mm/1st h) and white cell count (≥ 11 × 109/l)) were correlated with extent of disease and severity. For categorical data, Fisher's exact test and the chi-square test were employed for analysis. The SAS package of the MRC was used for this purpose.

Results

Sixty-four patients presented with ulcerative colitis; 24 were from Chatsworth (1983 - 4 patients, 1984 - 6, 1985 - 4, 1986 - 5, 1987 - 5). There was an equal number of males and females. The age distribution is shown in Fig. 1. Eighty per cent of the patients were Hindus and the rest were Moslems, except for 1 belonging to the Christian faith; 34 patients were of north Indian and the rest of south Indian origin. The ratio of north Indians to south Indians at the hospital is 1:2. Three patients had a family history of chronic diarrhoeal disease. Three patients were smokers.

The principal symptoms and signs are shown in Table I and the clinical grade of severity is shown in...
Table II. Most of the unclassified patients were studied retrospectively; documentation in this part of the study was incomplete in some cases. The extra-intestinal features and complications are shown in Table III. Of the 4 patients who had arthritis 3 were females; 3 had large-joint involvement. Radiographs of the sacro-iliac joints (done in 90% of patients) showed no evidence of sacro-ileitis. Eye examination (including slit-lamp examination, done in 72% of patients) showed no evidence of disease. Peri-anal disease was diagnosed in 4 patients (fissure in ano — 3 cases, fistula in ano — 1 case). The endoscopic grade of severity as assessed at sigmoidoscopy or colonoscopy is shown in Table IV. The extent of involvement as assessed by colonoscopy or barium enema examination was as follows: proctitis — 8%, rectosigmoiditis — 19%, extensive — 35%, total — 38%. A further breakdown is shown in Fig. 2. The findings on barium enema examination are shown in Table V: 9 strictures were diagnosed in 5 patients (transverse colon — 3, hepatic flexure — 2, descending colon — 3, and caecal — 1). The results of the laboratory investigations are set out in Table VI. Iron deficiency anaemia and leucocytosis were common findings. Six patients had raised alkaline phosphatase levels, suggesting liver involvement; in 3 of these patients, who had levels above twice the upper limit of normal, endoscopic retrograde cholangiopancreatography revealed sclerosing cholangitis. Liver biopsies were not performed on these patients.

Clinical and macroscopic severity were not found to correspond with extent of involvement to a statistically significant extent. No statistically significant relationships were found between laboratory measurements and extent of disease. When comparing laboratory measurements and severity the only statistically significant relationship was between severe disease and low albumin values ($X^2 = 12.309$; and $P = 0.002$).

### Table I. Signs and symptoms at presentation (%)

<table>
<thead>
<tr>
<th>Sign or Symptom</th>
<th>%</th>
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<tr>
<td>Bloody diarrhoea</td>
<td>71</td>
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<tr>
<td>Mucus in stool</td>
<td>59</td>
</tr>
<tr>
<td>Weight loss</td>
<td>37</td>
</tr>
<tr>
<td>Abdominal pain</td>
<td>29</td>
</tr>
<tr>
<td>Anorexia</td>
<td>19</td>
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<tr>
<td>Abdominal tenderness</td>
<td>14</td>
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<tr>
<td>Fever</td>
<td>12</td>
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</tbody>
</table>

### Table II. Clinical grade of severity (%)

<table>
<thead>
<tr>
<th>Grade</th>
<th>%</th>
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<tbody>
<tr>
<td>Mild</td>
<td>50</td>
</tr>
<tr>
<td>Moderate</td>
<td>20</td>
</tr>
<tr>
<td>Severe</td>
<td>12.5</td>
</tr>
<tr>
<td>Unclassified</td>
<td>28.5</td>
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</table>

All patients were prescribed sulphasalazine; 4% required no other treatment, whereas 32% needed topical steroids in addition. Oral steroids were given to 2% at some time during the course of their illness. Six patients, all of whom had total colitis, required proctocolectomies. All these patients had clinically severe disease (2 patients had been ill for 15 years, 2 for 4 years, and 2 for 2 and 6 years respectively). Two of these patients had undergone ileo-anal anastomosis with construction of an ileal pouch. One patient with responsive disease required total parenteral nutrition in addition to steroids, with good response. Three patients died; 2 had severe colitis and Gram-negative sepsicaemia, while the 3rd died of a perforation following barium enema examination.
The higher incidence of weight loss and abdominal pain in comparison with Western populations was in keeping with studies on Indians in India.11,12 We did not observe the eosinophilia found by Benfield et al.13 in Indians in the UK. Eosinophilia has not been observed by others in Indians in India or the UK.14,15 While iron deficiency anaemia was a common finding, as in India and the UK, its higher prevalence among male patients was surprising.15

Extra-intestinal manifestations and complications are rare in South African Indians. Our patients have a higher incidence of liver disease and colonic strictures and a lower incidence of psuedopolyps and joint disease than Indians in India, those in the UK, and whites.15,16 Our arthritic patients have large-joint involvement, as do patients from Western countries, but Indians in India tend to have small-joint disease.15,17 In contrast to the situation in the UK, we did not find a high incidence of cutaneous lesions or oral ulcers.18 When a patient with ulcerative colitis presents with rectal bleeding the doctor is likely to respond by intensifying treatment for the colitis. We have found that haemorrhoids can occur in these patients, and it is wise to exclude this condition by proctoscopy. We are aware of one other study in which this association has been noted.19

Ulcerative colitis is more common than Crohn’s disease in South African Indians, in keeping with the findings in India, the UK and other parts of the world.15,18 Indians in the UK and India are more likely to have intestinal tuberculosis than ulcerative colitis, whereas in our population the incidence of ulcerative colitis is higher (unpublished data). The incidence of ulcerative colitis (2.7/100 000 per year) is low in our population, and is similar to that in whites in eastern European countries.15 The ratio of ulcerative colitis to Crohn’s disease is 3.7:1 in our population.19 We did not find a higher incidence of ulcerative colitis in the Moslem community, as was suggested by Findlay,7 and were unable to show a statistically significant difference in incidence between Indians originating from south India and those whose ancestors came from the north. Studies in India have shown that north Indians are more prone to this illness.15,20

This study shows that in Indians in South Africa there is no relationship between clinical, macroscopic and laboratory indices of severity and extent of disease. When comparing laboratory indices and severity it was found that patients with severe disease were likely to have albumin levels under 35 g/l. Future studies should focus on histological correlations with the previously mentioned variables.

In conclusion, ulcerative colitis in the Durban Indian is clinically mild, with moderate severity macroscopically and extensive or total involvement. Extra-intestinal manifestations are rare, but patients tend to have liver involvement and colonic strictures.

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Umbilical artery Doppler velocimetry in the prediction of intrapartum fetal compromise

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Summary

The value of early intrapartum umbilical artery Doppler velocimetry in the prediction of fetal compromise was studied. One hundred patients were recruited into the study and fetal compromise was diagnosed by abnormal first- or second-stage fetal heart rate traces, a 5-minute Apgar score less than 7, or the development of hypoxic ischaemic encephalopathy. Fetal compromise developed in 30 patients. An umbilical artery resistance index (RI) of 0.66 or less did not predict fetal compromise (sensitivity 13%, specificity 89%, positive predictive value 25%, negative predictive value 70%). Since the mean umbilical artery RI was identical in the compromised and the non-compromised groups, we conclude that early intrapartum Doppler velocimetry is of very little clinical value in predicting fetal compromise at term.

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REFERENCES


Patients and methods

Women with singleton pregnancies, in early spontaneous labour (3 - 6 cm cervical dilatation) with cephalic presentation, who arrived in the labour ward at Tygerberg Hospital between 08h00 and 15h00 from Mondays to Thursdays, were asked to participate in the study. None refused, and 100 women were recruited from April to August 1990.