Phenotypes and natural history of Inflammatory Bowel Disease (IBD) in a referral population in Medellín, Colombia

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Abstract
Worldwide the frequencies of inflammatory bowel disease, ulcerative colitis and Crohn’s disease have all increased. In our own environment it has become necessary to establish the epidemiology of these entities and to determine their clinical and endoscopic behavior.

Methodology: This is a descriptive observational study which systematically evaluated patients with inflammatory bowel disease at the Pablo Tobon Uribe Hospital between August 2001 and July 2009.

Results: Of 202 patients with diagnoses of inflammatory bowel disease 80.7% had ulcerative colitis and 15.8% had Crohn’s disease. The ratio was 4.9 to 1 with similar distributions among male and female patients. Patients with ulcerative colitis presented more diarrhea and bleeding, but less abdominal pain and weight loss, than those with Crohn’s disease. This difference was significant (p <0.001). The percentage of our patients with extraintestinal manifestations (27.7%) was similar to other populations in which compromised articulation predominates. A significant association between smoking and Crohn’s disease was found. 19.5% of our patients had proctitis, 45% had left sided colitis, and 35.5% had extensive colitis. The most common location of Crohn’s disease was in the ileocolonic region (50%), while 18.8% were located in the terminal ileum, and 28.1% were in the colonic region. Only 3.1% had upper gastrointestinal tract involvement. Severity of symptoms ranged from asymptomatic or S0 (17.2%) to severe or S4 (23.1%) at study entry. 27.8% had mild activity (S1), and 32.0% had moderate activity (S2). Of the patients with Crohn’s disease, 34.4% presented inflammatory (INF) behavior, 31.3% had fibrostenotic (FS) behavior, 21.9% were perianal, 6.3% had fistulizing/perforating (FP) behavior and 6.3% had fibrostenotic (FS) behavior and were perianal. Biological therapy was only used for 7.4% of the patients with ulcerative colitis and 46.9% of the patients with Crohn’s disease. The colectomy rate for patients with ulcerative colitis was 6.0%. It was significantly related to severity (S3) and extension (extensive colitis). 50% of the patients with Crohn’s disease had surgical resections. INF patients had surgery less often than other patients. The mortality rate of our patients during follow-up was 2.4% for ulcerative colitis patients and 3.0% for Crohn’s disease patients.

Conclusion: Despite finding a predominance of ulcerative colitis, there is a tendency to increased detection of Crohn’s disease similar to what has been reported in other centers. In our environment ulcerative colitis has relatively benign behavior with low surgery and low mortality rates. Crohn’s disease patients present more severe behavior, and have higher rates of hospitalization, surgery and use of biological therapy. This is probably associated with delays in patients treatment after the initial diagnosis has been made.

Keywords
Inflammatory bowel disease, ulcerative colitis, Crohn’s disease.
INTRODUCTION

Ulcerative colitis and Crohn's disease are uncommon chronic inflammatory bowel pathologies of the gastrointestinal tract which primarily affect the colon and small intestine. Their etiology is multifactorial. Their clinical courses are characterized by manifold relapses. During the past few years an increase in their frequency has been detected throughout the world-wide.

Epidemiologic studies of patients with ulcerative colitis and Crohn's disease are not easy because early symptoms are insidious. This often makes precise diagnosis difficult until other causes have been ruled out. Additionally, many of these patients are handled erroneously or diagnosed late because of the low levels of clinical suspicion about this entity since it is uncommon in our region. Historically, studies showing higher incidences and prevalences for ulcerative colitis and Crohn's disease have come from the Scandinavian countries, the United Kingdom and North America. Nevertheless, since occurrence of inflammatory bowel disease is a dynamic process, these old dogmas might be changing (1, 2, 3, 4, 5).

Few publications in Latin America and Colombia describe the epidemiology of individuals with IBD. In Colombia a study was published in 1991 with 108 cases of IBD diagnosed between 1968 and 1990 at two centers in Bogota. 98 of these patients had ulcerative colitis and 10 had Crohn's disease. Among the patients with UC females predominated (55.1%), while male patients predominated (60%) among those with Crohn's disease (20). In 1999 a study was published documenting annual IBD incidence of 1.2 per 100,000 inhabitants in Colon, Panama. Curiously, no Crohn's disease cases were detected. In the community of Partido de General Pueyrredon, Argentina annual incidence of IBD was 2.2 per 100,000 inhabitants. Just one case of Crohn's disease was reported 7 years of monitoring between 1987 and 1993. These incidence rates are lower than those reported for the Hispanic population in the United States. This implies that environmental factors may be involved in the appearance of this entity (17). A more recent Chilean study compared clinical characteristics of patients with IBD at two centers, finding a 3.2 to 1 predominance of ulcerative colitis (76%) over Crohn's disease (24%) among 238 patients (18). With this study we attempt to describe the phenotype, clinical behavior, and endoscopic characteristics of IBD at our center, and our experience in the handling of this entity.

MATERIALS AND METHODS

Study Location

The Pablo Tobon Uribe Hospital in Medellin is a hospital of high complexity providing medical care to a large percentage of the city's population. It is a referral center for difficult to manage pathologies such as IBD. In 2001 we created a special consultation service for IBD because of our interest in this pathology. The aim was not only to care for local patients with ulcerative colitis and Crohn's disease, but to turn the hospital into us into a referral center for the whole city for the handling of these entities.

Diagnostic Criteria

We based the diagnosis of Crohn's disease on the presence of 2 or more of the following criteria (8):

1. Typical symptoms including abdominal pain, diarrhea and weight loss for more than six weeks.
2. Macroscopic appearance in endoscopy or surgery of segmental, discontinuous or patchy lesions with or without rectal compromise, aphthous type ulceration, fissures or penetrating or strictured lesions.
3. Radiological evidence of stenosis in the small intestine, segmental colitis or the presence of fistulas.
4. Histological evidence of focal or transmural inflammation or epithelial granulomas with giant cells.

In addition we used serologic markers such as pANCA (Perinuclear Anti-Neutrophil Cytoplasmic Antibodies) and ASCA (Anti-Saccharomyces cerevisiae antibodies). The location and the behavior of Crohn's disease were determined according to the Montreal classification (Table 1).

Table 1. Montreal Classification for Crohn's Disease.

<table>
<thead>
<tr>
<th>Location</th>
<th>Behavior</th>
<th>Montreal</th>
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<tbody>
<tr>
<td>L1: ileal</td>
<td>B1: non stricturing, non penetrating.</td>
<td>A1: less than 16 years.</td>
</tr>
<tr>
<td>L4: isolated upper digestive</td>
<td>P: perianal disease.</td>
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After excluding infectious pathology, ischemia and neoplasia, ulcerative colitis can be definitively diagnosed when three out of four basic criteria are present (12). Those criteria are:

1. Clinical history of diarrhea and/or bleeding and/or mucous in feces for more than 6 weeks or in repeated episodes.
2. Colonoscopic findings of granular friable mucosa with or without ulceration.
3. Histological findings compatible with IBD due to acute or chronic inflammation, with cryptitis and distortion of crypts associated with lymphoplasmacytic infiltrate without granulomas.
4. Suspection of Crohn’s disease ruled out by radiological studies of small intestine, ileocolonoscopy or biopsies. In this study severity and the extension of ulcerative colitis were first determined by colonoscopies. Diagnoses were defined according to the Montreal classification (Tables 2 and 3).

Table 2. Montreal classification: ulcerative colitis extension.

<table>
<thead>
<tr>
<th>Ulcerative Colitis Extension</th>
<th>Anatomy</th>
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<tbody>
<tr>
<td>E1 Ulcerative Proctitis</td>
<td>Limited to the rectum (15 cms), distal rectosigmoid junction</td>
</tr>
<tr>
<td>E2 Left Colitis</td>
<td>Colorectal distal to the splenic flexure</td>
</tr>
<tr>
<td>E3 Extensive Colitis</td>
<td>Extending proximal to the splenic flexure</td>
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Table 3. Montreal classification: ulcerative colitis severity.

<table>
<thead>
<tr>
<th>Ulcerative Colitis Severity</th>
<th>Definition</th>
</tr>
</thead>
<tbody>
<tr>
<td>S0 Clinical Remission</td>
<td>Asymptomatic.</td>
</tr>
<tr>
<td>S1 Mild</td>
<td>&lt; 4 defecations/day, normal VSG.</td>
</tr>
<tr>
<td>S2 Moderate</td>
<td>4-6 defecations/day, low toxicity.</td>
</tr>
<tr>
<td>S3 Severe</td>
<td>&gt; 6 defecations/day, with blood, FC &gt; 90 per minute, Tº &gt; 37.5 ºC, Hb &lt; 10.5 g/dl, VSG &gt; 30 mm/hour.</td>
</tr>
</tbody>
</table>

Patients who did not fulfill the criteria previously established for ulcerative colitis and Crohn’s disease after clinical, radiological, endoscopic, histological and serologic testing were categorized as cases of unclassified IBD (IBDU) in accordance with the Montreal consensus and recent publications (6, 19). Relapse was defined as an increase in symptoms related to IBD that required medical consultation and that led increased doses of medication that the patient had already been receiving, and/or the introduction of new medication or surgery (11).

Active smokers were defined as individuals who smoked at least 1 cigarette per day at the time of diagnosis and that continued smoking during the follow-up. Former smokers were defined as those patients who had stopped smoking before the diagnosis of IBD. Only first and second degree consanguinity were considered for family background. Extraintestinal manifestations considered included peripheral arthropathy, erythema nodosum, gangrenous pyoderma, oral ulcers, scleritis, anterior uveitis, sarcoiditis, ankylosing spondylitis, primary sclerosing cholangitis and associated thrombotic complications. Performance of appendectomy was documented before diagnosis of IBD and during follow-up.

The activity patterns for Crohn’s disease and ulcerative colitis were defined according to pre-established parameters (8, 12) as follows:
1. Initial activity followed by decreasing activity during follow-up.
2. Increasing severity of symptoms during follow-up.
3. Continuous clinical activity.
4. Intermittent activity with periods of relapses and remission.

Type of study
A descriptive and observational study

Study population
We included all patients with inflammatory bowel disease who were admitted to the emergency room, IBD outpaient clinic, or inpatient services of the Pablo Tobon Uribe Hospital from August 2001 to July 2009. Diagnoses of ulcerative colitis and Crohn’s disease in clinical histories were reviewed and personal or telephone interviews were used to obtain additional data from all these patients. The final diagnosis was determined by a clinical Gastroenterologist with experience diagnosing and managing IBD. Internationally accepted criteria for diagnosis previously indicated were used. Patients who did not fulfill strict criteria for Crohn’s disease or ulcerative colitis were categorized as unclassifiable colitis.

Data collection
For purposes of analysis, an SPSS format database was used to collect the following data from each patient:
1. Type of IBD (Crohn’s disease, ulcerative colitis or unclassifiable colitis).
2. Current age and age at time of diagnosis to determine duration of the disease.
3. Patient’s gender.
4. Date of onset, date at diagnosis, and time between onset and consultation at our institution.
5. Predominant clinical manifestations.
7. Number of hospital admission.
8. Anatomical extension and severity of IBD at the time of diagnosis.
9. Modalities of treatment used to manage ulcerative colitis and Crohn’s disease.
11. Current or former tobacco addiction.
12. Family history of IBD.
14. Percentage of relapses of the disease.
15. Use of steroids, immune-suppressants and biological therapy.
17. Number of relapses.

**Statistical analysis**

Descriptive statistics, Chi squared test of statistical significance, survival curves and ANOVA were used.

**Ethical aspects**

The protocol of this study was submitted to the ethics committee of the Hospital Pablo Tobón Uribe where it was approved. The use of informed consent was not necessary since no additional interventions were required and no sensitive information was used. The confidentiality of the information was guaranteed.

**RESULTS**

This is a descriptive and observational study in which 229 histories were systematically evaluated. Of these 202 patients fulfilled the diagnostic criteria for inflammatory bowel disease. 27 patients were excluded from the study (11.1%). 11 had been wrongly diagnosed with IBD (6 had irritable bowel syndrome, 3 had constipation, and 2 had fecal incontinence.) Data could not be collected for 10 patients, and 6 patients had other types of colitis (3 had eosinophilic colitis, 2 had ischemic colitis, and 1 had cytomegalovirus colitis.)

**Epidemiological characteristics**

Of the patients included in the sample, 80.7% had ulcerative colitis, 15.8% had Crohn's disease, and 3.5% had unclassified inflammatory bowel disease (Figure 1). The relation between ulcerative colitis and Crohn's disease was of 4.9 to 1. 114 patients (56.4%) were women, and 88 (43.6%) were men. The proportional relation was 1.2 to 1. The female/male proportion for ulcerative colitis was 1.3 to 1.0; whereas the female/male proportion for Crohn's disease is the inverse: 1.0 to 1.2. These differences are not statistically significant. The average age at appearance of IBD symptoms was 37.62 years. Average time between onset and diagnosis was 9.71 months: 9.2 months for ulcerative colitis and 13.2 months for Crohn's disease. The average age at diagnosis of all types of IBD was 38.46 years, with a range from 2 to 77 years. The median age at diagnosis was 37 years, and 50% of the patients were diagnosed between 27 and 49 years of age. In regard to age at time of diagnosis, 50% of the patients with Crohn's disease were in category A3 (> 40 years) according to the Montreal classification. 46.9% were in category A2 while only 3.1% were in category A1 (Figure 2). The average patient follow-up time for those with ulcerative colitis was 40.2 months, with a range of 1 month to 96 months. For Crohn's disease patients the average was 38.0 months, and the range was from 2 months to 156 months. For IBDU the average was 26.0 months, and the range was 3 months to 60 months. There were no significant differences among the groups.

**Risk factors**

Risk factors such as tobacco addiction, appendectomy or family history of EII were analyzed. There was one statistically significant difference (p=0.26): a greater proportion (47.8%) among the patients were in the group with Crohn's disease than in the other two groups. 25.1% of the current and former smokers had UC, while 24.6% of them had IBDU. A more detailed analysis showed the Odds Ratio (OR) of CD to UC and CD to IBDU both to be equal to 2.297 (p = 0.031). Only 4 patients (2.4%) out of 163 with ulcerative colitis and 2 patients (6.0%) with Crohn's disease had undergone appendectomies before diagnosis or during follow-up. This is a very small number for establishment of any association with, or influences of, the disease. Similarly, only 1 patient with Crohn's disease (3.0%) and 5 (3.0%) patients with ulcerative colitis had family antecedents in the first and second degrees of consanguinity.

**Clinical manifestations**

The most frequent symptom, diarrhea, was present among 96% of those in the study. It was followed by bleeding, abdominal pain and weight loss. Crohn's disease is cha-
Characterized by a lower incidence of diarrhea, bleeding, and major weight loss than are the other forms of presentation of the disease. These differences were significant (p<0.001). Ulcerative colitis presents a lower proportion of abdominal pain than the other two. This difference was also significant (Figure 3).

Figure 3. Most frequent clinical manifestations in patients with IBD.

The intermittent clinical pattern was most frequent for both CD (62.5%) and UC (76.1%). No patients were found with delayed activation of the disease. 15.9% of the patients with ulcerative colitis presented only one episode of activity and soon entered remission during the follow-up study. However, for patients with Crohn’s disease the percentage was 21.8% (Figure 4).

Figure 4. Predominant clinical pattern in Ulcerative Colitis and Crohn’s disease.

The percentage of patients with ulcerative colitis who presented relapses was 76.1% (124 patients). Of these, 52.4% relapsed in the first year, 39.5% between 1 and 5 years after initial onset, and 8.1% relapsed after 5 or more years. Patients younger than 40 years old have more relapses during the first year (62.2%), compared with patients older than 40 years old (38.0%), p: 0.03. Patients who experience more than 5 relapses presented serious extensive ulcerative colitis more
often than do those that experience less than 5 relapses (p: 0.02). 22 patients with Crohn’s disease (68.7%) experienced relapses. Of these, 72.7% relapsed in the first year, 18.2% suffered relapses between 1 and 5 years after initial onset, and 9.1% relapsed 5 or more years after onset.

**Extraintestinal manifestations**

The percentage of IBD patients of all types that presented extraintestinal manifestations was 27.7%. There were no significant differences between the different types of the disease. For ulcerative colitis the percentage was 25.8%, and for Crohn’s disease it was 40.6%. The most frequent extraintestinal manifestation appeared in the joints (20.3%): 18.4% for UC cases and 31.3% for CD cases. Manifestations in the liver, skin and/or eyes and thromboses or lymphomas appeared in less than 2% of the cases of each type.

**Anatomical characteristics and clinical behavior**

In the endoscopic distribution of ulcerative colitis at the time of diagnosis, 19.5% presented proctitis, 45% presented left colitis and 35.5% presented extensive colitis (Figure 5). Severity of the patients was measured at the beginning of the study in accordance with the Montreal classification. 17.2% were asymptomatic (S0), 27.8% showed slight activity (S1), 32% were moderate (S2), and 23.1% were severe (S3) (Figure 6). The anatomical locations of Crohn’s disease were also established. 18.8% were in the terminal ileum, 28.1% were colonic, 50% were ileocolonic, and 3.1% were in the upper digestive tract (Figure 5). Behavior at the time of the diagnosis according to the Montreal classification was as follows: inflammatory bowel 34.4%, stricturing 31.3%, penetrating 6.3% and perianal 21.9%. In 6.3% the behavior was equally strictureing and perianal (Figure 7).

The percentage of patients with ulcerative colitis who required hospitalization was 42.9%: 75.0% for CD and 28.6% for IBDU. This difference was significant (p: 0.002) (Figure 8). The proportion of patients with who required hospitalization was 60% for those with extensive ulcerative colitis, 40.8% for those with left colitis, and 15.2% for those with proctitis. This difference was statistically significant (p < 0.001) (Figure 9). The rate of hospitalization was related to the use of steroids for ulcerative colitis (94.3%) (p < 0.001) and Crohn’s disease (95.8%) (p: 0.039). The rate of hospitalization was also related to the use of biological therapy. 91.7% of the patients with ulcerative colitis who used biologics required hospitalization (p < 0.001). For Crohn’s disease it was 93.3% (p: 0.041).

**Medical treatment**

5-aminosalicylic acid (5-ASA) was chosen to treat 88.3% of the patients with ulcerative colitis. The differences of proportions used for CD and IBDU are statistically significant (p < 0.001). The medication was generally administered orally (93.3%). Oral 5 ASA was used for 93.2% of these patients, while it was administered topically for only 6.8%. Patients with proctitis were treated topically in only 2.1% of the cases. 73.8% of the patients with IBD have received steroids. 71.8% of the patients with ulcerative colitis received steroids at some point in the course of the disease, while
87.5% of the individuals with Crohn’s disease and 57.1% of the patients with IBDU were treated with steroids. 31.6% of the patients with ulcerative colitis and 39.3% of those with Crohn’s disease only required one cycle of steroids. On the other hand, 14.5% of the patients with ulcerative colitis and 14.3% of those Crohn’s disease were steroid dependant during follow-up. AZT was used for 27% of the patients with ulcerative colitis and for 40% of those with Crohn’s disease. We have not determined statistical differences among the different types of IBD in relation to the use of this medicine. Biological therapy was used for 13.4% of the patients with IBD. Half of the patients with Crohn’s disease received this type of treatment (46.9%), while it was only used for 7.4% of the individuals with ulcerative colitis (p<0.001) (Figure 10). The biologic used most often was Infliximab (77.8%). Among patients with ulcerative colitis only those with severe cases (S3) received biological therapy (p <0.001), and there was no significant difference related to the extension of the disease. 25% of the patients with ulcerative colitis receiving biological therapy required surgery, whereas the rate of colectomies for patients not receiving biological therapy was only 4.6% (p: 0.028). 73.3% of the patients with Crohn’s disease receiving biological therapy required surgery, whereas those not receiving biological therapy only required surgery in 29.4% of the cases (p: 0.016).

![Figure 7](https://example.com/figure7.png)

**Figure 7.** Crohn’s disease behavior at diagnosis according to the Montreal classification.

### Surgical treatment

We found that the use of surgery was relatively low (12.9%) as a therapeutic option. A statistically significant difference (p<0.001) exists between the need for surgery in patients with Crohn’s disease (up to 50% of the cases) and that for patients with ulcerative colitis (only 6.0%) (Figure 11). In our study only 10 (6.0%) out of 163 patients with ulcerative colitis required colectomies during follow-up: 5 of these patients were treatment refractory, 3 had dysplasia, and 2 had colon perforations.
the cases, whereas left colitis does not require it and proctitis only required it in 1 case (3%) (Figure 13).

The location of the disease and age at diagnosis are not factors related to the need for surgical treatment for patients with Crohn’s disease. In this group, the behavior of the disease at onset was an important factor for surgery (p=0.001). Inflammatory behavior did not require surgery, but stricturing, penetrating and perianal presentations required surgery in 70%, 100% and 100% of the cases, respectively (Figure 14).

**Mortality**

The mortality rate for patients during follow-up for IBD was 2.5%. None of the clinical conditions predisposed patients for death. Only 4 patients (2.5%) with ulcerative colitis passed away during the follow-up: 2 for reasons related to the activity of the disease. 1 patient with dysplasia required a colectomy following which the patient presented proctitis, pioderma gangrenosum and steroid dependency. The patient required biological therapy. The patient passed away due to sepsis. Another patient passed away due to bile duct cancer related to primary sclerosing cholangitis (PSC). A third individual passed away due to pancreatic cancer. The last patient died of complications of diabetes mellitus. Only 1 patient (3.1%) with Crohn’s disease passed away during follow-up. The cause was sepsis subsequent to surgery.

**Figure 10.** Comparison of accumulated medical treatment used in ulcerative colitis and Crohn’s disease.

**Figure 11.** Surgery rate in patients with inflammatory bowel disease.

**Figure 12.** Relationship between colectomy rate and severity of ulcerative colitis.

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We also diagnosed Crohn’s disease in our patients more frequently than those reported in Holland (34 years old), Chile (39 years old) and Olmsted, Minnesota (29.5 years old) (17, 34, 35). The average diagnosis age for ulcerative colitis in our series was 38.5 years old, similar to those reported in Denmark (34 years old), Hong Kong (40.6 years old) Chile (30 years old) and Holland (42 years old) (10, 13, 18, 9).

In our study, the most common anatomical location of Crohn’s disease was ileocolonic (50%) with only 3.1% of the patients presenting upper digestive tract compromise. This is very similar to other countries’ findings. The EC-IBD found 14.8% located in terminal ileum, 42.1% in the colon, 37.4% with ileocolonic compromise and 5.5% with upper digestive compromise (13). Another Dutch study found terminal ileum compromises in 31% of their cases, colonic compromises in 27%, ileocolonic in 31% and higher digestive tract compromises in 5% of the cases. The IBSEN group from Norway reported 27.0% located in the terminal ileum, 48.5% located only in the colon, 22.7% ileocolonic and 1.6% higher digestive (8). In Chile, 37% were located in the ileum, 47% were colonic, 19% ileocolonic, and 4% were upper digestive (esophageal) compromises (18).

In our study of IBD extensiveness at the moment of diagnosis, we found that 19.5% of those in the study had proctitis, 45% had left sided colitis, and 35% had extensive colitis. The Norwegian study of the IBSEN group, found 32.9% with proctitis, 35% with left sided and 32.1% with extensive colitis. The EC-IBD study found proctitis in 30.1% of those studied, left sided colitis in 44.8%, and extensive colitis in 25.0%. The Dutch study mentioned above (4) found 38% with proctitis, 43% with left sided colitis and just 13% with extensive colitis. In Chile the distribution found was: Proctitis 21%, proctosigmoiditis 30%, left sided colitis 21% and pancolitis 28% (18). The relatively low percentage of proctitis patients in our study may be associated with the strict application of the Montreal classification in which the proctosigmoiditis groups do not exist and only patients with rectum compromise and a maximum extension of 15 cm are included. If the compromise was bigger, a patient was classified as having left sided colitis.

Crohn’s disease’s behavior at the moment of admission to our study was inflammatory in just 34.4% of the cases. This is lower than reports in the literature. In the EC-IBD study Crohn’s disease’s behavior at the moment of diagnosis was inflammatory in 73.7% of all cases, stricturing in...
15.9%, penetrating in 8.3% and a combination of stricture-
ing and penetrating in 8.3% (7). In the Dutch study 76% of
the patients presented inflammatory, 14% stricture,
ing, 7% penetrating and 3% stricture and penetrating (9).
The IBSEN group from Norway determined that, at the
moment of diagnosis, 62.0% of its patients showed in-
flammatory behavior, 27.0% stricture and 11% penetra-
ting. The discrepancy between our results and the other
results can be explained by the fact that we determined the
disease’s behavior at the moment of admission to our cen-
ter, and not at the moment of diagnosis. The average time
between the onset of symptoms and the appointment with
our group was very prolonged (Table 4).

Our study found that extra intestinal manifestations were
present in 27.7% of the patients. Articular manifestations
were predominant in our data. This was similar to the data
reported in the Chilean study in which 20% of the patients
had extra intestinal manifestations, among which articular
manifestations predominated (18). In Hong Kong,
13.7% of the patients with ulcerative colitis presented extra
intestinal manifestations (13). In Holland, 15% of the CD
patients presented extra intestinal manifestations as did 7% of
the UC patients.

In our study the percentage of relapse-free patients with
ulcerative colitis during follow up was 15.9%. This result is
similar to other studies which found that 12% of patients
had no relapses after 12 years of follow up (9). Hoie found
that 22% of patients studied were relapse-free after 10 years
of follow up (11), while Langholz in Denmark found that
10% were relapse free after 25 years of follow up (10).
The relapse rate among our UC colitis patients was 76.1%
during the follow up, of which 52.4% relapsed during the
first year. Other studies have found relapse rates of 67%,
83%, and 85% after 10 years of follow up (11, 12, 9).
Youth has been related to shorter times between among relapses.
This was checked in our study, and higher total number of
relapses was found among young patients (14, 11). The
IBSEN group found that patients who were 50 years old or
older presented fewer clinical relapses and had lower risks
of surgery (12).

Our surgery rate during the follow up of CD patients was
50%. This is similar to those of other centers. Although
inflammatory behavior did not require surgery, stricture,
penetrating and perianal presentation did require surgery
in 70%, 100% and 100% of these cases respectively. Disease
location and age at diagnosis age had no relation with the
need for surgical treatment need among CD patients.

The Dutch group reported an identical accumulated rate
of resection for CD patients of 50% (9). The EC-IBD study
reported a total surgery rate of after 10 years of only 31.6%,
while the Norwegian IBSEN group reported surgery rates
of 13.6% after 1 year, 27.0% after 5 years, and 37.9% after 10
years of follow up (7,8).

The 6.0% total colectomy rate for ulcerative colitis during
follow up in our study is lower than in studies of high pre-
valence populations. In Denmark, Langholz et al. reported
total colectomy rates of 23.7% after 10 years, 29.9% after
15 years, and 32.4% after 25 years of follow up (10). The
IBSEN group found colectomy rates of by 3.5% after 1 year,
7.6% after 5 years, and 9.8% after 10 years of follow up (12).
The Dutch study presents a colectomy rate of 8.3% after 10
years of follow up (9). The average colectomy rate in both
Chilean centers was 18% (18). The average colectomy
rate in the Hong Kong study was 5.5% (13). In our study
the S3, or severe, classification had a significant relation
with the colectomy rate as 20% of these patients required
collectomies. 15% of those patients with extensive colitis
had colectomies, and 3% of the patients with proctitis.
No patients with left sided colitis need this surgery. These
results are similar to the ones reported by the IBSEN group.
After 10 years of follow up, they reported a colectomy rate
for extensive colitis patients of 19%, 8% for patients with
left sided colitis, and 5% for proctitis patients. A study with
1,116 patients from Cleveland, Ohio (USA) found higher
collectomy rates. 60% of Pancolitis patients reported requi-
red surgery, as did 50% of those with left colitis in 50%, and
15% of those with proctitis (16). All of the above could be
explained by the use of more effective medical therapies in
recent years (as we show have shown in our study), and by
more conservative handling by gastroenterologists who are

Table 4. Comparison of behavior according to Montreal classification in patients with diagnosis of E. Crohn’s, at different centers.

<table>
<thead>
<tr>
<th>Type of behavior</th>
<th>Inflammatory</th>
<th>Stenosing</th>
<th>Penetrating</th>
<th>Stenosing / Penetrating</th>
<th>Perianal</th>
</tr>
</thead>
<tbody>
<tr>
<td>EC-IBD (1)</td>
<td>73.7%</td>
<td>15.9%</td>
<td>8.3%</td>
<td>1.9%</td>
<td>___</td>
</tr>
<tr>
<td>IBSEN (2)</td>
<td>62%</td>
<td>27%</td>
<td>11%</td>
<td>3%</td>
<td>___</td>
</tr>
<tr>
<td>Netherlands (3)</td>
<td>76%</td>
<td>14%</td>
<td>10%</td>
<td>___</td>
<td>___</td>
</tr>
<tr>
<td>HPTU</td>
<td>34.4%</td>
<td>31.3%</td>
<td>6.3%</td>
<td>6.3%</td>
<td>21.9%</td>
</tr>
</tbody>
</table>

aware of the complications that can occur in these types of surgery. This was shown in a recent study from Copenhagen in which colectomy rate after 1 year decreased from 9% to 6% (22).

In our series, the percentage of ulcerative colitis patients which required hospitalization was 42.9%. It was significantly related to the use of steroids, biological therapy and extensive colitis, although no causal relations were established. A recent study found that UC patients who require hospitalization have a higher risk for colectomies than do those who do not require hospitalization (20.4% vs. 4.2%, OR: 3.1) (15). The same higher risk for colectomies was found for biological therapy with Infliximab (51.8% vs. 22.4%, OR: 3.1) (15).

Our study’s mortality rates during follow up were 2.4% for UC patients and 3.0% CD patients. These rates were lower than those in other centers. The Dutch study found mortality rates during the follow up of 4% for CD patients and 7% for UC patients (9).

In conclusion, we can say that despite finding a preponderance of ulcerative colitis in our study, there is a tendency to higher rates of detection of Crohn’s disease in our Latin-American countries than in previous studies. In our environment, ulcerative colitis has relatively benign behavior. Both surgery and mortality rates are low compared to other countries with higher prevalences of severity (S3) and extensive colitis, both of which are risk factors for colectomy. Our patients with Crohn’s disease, at presented more severe behaviors at admission than did CD patients reported elsewhere. This was probably because the delay before coming to our center was too long, resulting in longer evolution times for the disease. As a result, our surgery rate was similar to those among other populations, and due to this rate required a high percentages of steroids, immunosuppressors and biological treatment. Consequently, we do not know if genetic or environmental factors contribute to different clinical behaviors of IBD here, than they do among European and American patient populations.

REFERENCES


