

Inflammatory bowel disease in Jamaica

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Abstract

Background Although inflammatory bowel disease (IBD) has been reported worldwide, it is primarily a disease of the developed world and most studies have reported on Caucasian populations.

Methods All IBD patients seen at the University Hospital of the West Indies, Jamaica, between January 2000 and January 2010 were reviewed.

Results There were 103 patients, 64 had ulcerative colitis (UC) and 39 Crohn's disease (CD), ratio of 1.6:1. In patients with UC there were 21 males and 42 females (M:F=0.5:1), whilst in those with CD 21 were males and 17 females (M:F=1.2:1). The mean age was 32.3 (range 2-84) years. Only 3.9% of patients were current smokers, 6.8% were past smokers. A family history of IBD was present in 7%. In CD patients, 56% had colitis only and 21% had small bowel disease. In UC patients, 31% had pancolitis, and 44% left-sided disease. The duration of disease was 5 years in 32%, 5-20 years in 54%, and more than 20 years in 14%. The main presenting features were diarrhea (93%), rectal bleeding (56%), abdominal pain (48%), weight loss (25%) and nausea and vomiting (19%). For patients with CD, presentation also included fistulas and small bowel obstruction. Extraintestinal manifestations were present in 38% of patients, and joint pain was present in 67.5% of them. Other extraintestinal manifestations were primary sclerosing cholangitis in 20% and pyoderma gangrenosum in 15%.

Conclusion IBD is relatively uncommon in Jamaica. UC is more common than CD. Most cases of CD had colitis only. The clinical features and outcome are similar to other reports.

Keywords Inflammatory bowel disease, ulcerative colitis, Crohn's disease, Jamaica

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Introduction

Inflammatory bowel disease (IBD) is a chronic idiopathic inflammation of the bowel of unknown etiology and consists of two disorders, ulcerative colitis (UC) and Crohn's disease (CD). Although IBD has been reported worldwide, it is primarily a disease of the developed world and most reports have focused on Caucasian populations [1,2].

Knowledge of the different incidence rates of IBD in different geographic areas or among races may provide insight into possible etiologic factors. Similarly, temporal trends in the incidence rates in a given area can provide valuable clues

regarding etiology [3]. Epidemiological studies from Western countries have reported that the incidence rates of IBD are higher in the northern part of the world and among white rather than non-white populations [4]. However, more recent reports from India, Japan and China have shown that it is an emerging problem [2]. Although the prevalence and incidence rates of IBD have recently increased in Hispanics, there is a paucity of reports on all aspects of the disease in Hispanics and African Americans [1]. Incidence and prevalence studies for Puerto Rico have shown an increase in both UC and CD since the late 1990s [5].

Data on IBD in developing countries have been difficult to collect for several reasons: there may be difficulty in making a diagnosis of IBD in areas where infectious colitis is common; there is also a general lack of awareness among doctors about IBD; and there are problems involved in population surveys and the collection of data from hospital-based records [2]. In Jamaica, only limited data is available on all aspects of IBD, and there was only one previous report on CD [6]. It is therefore important to determine the incidence, clinical features, course and outcome of patients with IBD in Jamaica.

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Conflict of Interest: None

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Patients and methods

All IBD patients seen at the University Hospital of the West Indies (UHWI), Jamaica, between January 2000 and January 2010 were reviewed. The hospital charts were obtained by a search of the medical charts library of the UHWI. The search keywords used included inflammatory bowel disease, ulcerative colitis, Crohn's disease, and colitis. Each case was confirmed based on clinical features, radiological and/or macroscopic and histological criteria. The extent of disease for UC was determined by barium enema and/or colonoscopy and for CD by surgery, colonoscopy, barium small bowel follow through or enteroclysis. Upper endoscopy was performed in patients with CD if warranted by symptoms.

Data for each patient was obtained with regards to age, gender, year of onset, presenting complaints, clinical features, smoking history, family history, employment status, treatment, history of appendectomy and outcome. The data was recorded and analyzed.

The Gastroenterology department of the UHWI received referrals from all over Jamaica, being the primary referral center for gastrointestinal disorders. It is therefore likely that the pool of patients seen at this institution is representative of the whole country.

Results

There were 103 patients with IBD reviewed over the study period. All patients were Jamaicans with their ethnicity primarily being of African descent. Of the 103 patients reviewed, 64 had UC and 39 had CD with a ratio of UC:CD=1.6:1. In UC patients there were 21 males and 42 females with a ratio of M:F=0.5:1. In CD patients there were 21 males and 17 females with a ratio of M:F=1.2:1.

The mean age at IBD diagnosis was 32.3 (range 2-84) years. There was no difference in the mean age of diagnosis for either UC or CD and there was also no difference in the mean age of diagnosis in men compared with women for CD and UC. In the study patients, 45.6% were employed, 16.5% were students, and 25.2% were unemployed. Concerning cigarette smoking, 3.9% of the patients were current and 6.8% were past smokers. A family history of IBD was present in 7%.

In CD patients, 56% had colitis only and 21% had involvement of the small bowel. In UC patients, 31% had pancolitis, and 44% left-sided disease. The duration of disease was 5 years in 32%, 5-20 years in 54%, and more than 20 years in 14% of patients.

The main overall presenting features were diarrhea (93%), rectal bleeding (56%), abdominal pain (48%), weight loss (25%) and nausea and vomiting (19%) (Table 1). In CD patients, the presentation also included fistulas and small bowel obstruction requiring surgery. Extraintestinal manifestations were present in 38% of patients, comprising joint pain (67.5%), primary sclerosing cholangitis (PSC) (20%), and pyoderma

gangrenosum (15%). PSC was more common in UC (n=7) than in CD (n=1) (P=0.139). Also, pyoderma gangrenosum was more common in UC (n=5), than in CD (n=1) (P=0.313).

The majority of patients (93%) were placed on 5-amino salicylate compounds, in addition, 65% of patients were treated with prednisone, 17% of patients were on other immunosuppressants such as azathioprine, 1% of patients were on metronidazole and 9% of patients on biological therapy. Of the patients receiving biological agents, 7 had CD and 2 UC. 61.5% of CD patients were maintained on steroids compared to 67.1% of UC patients. 9% UC patients were on immunosuppressants compared to 28% CD patients. Side effects of treatment were minimal in most patients. However, 6 patients on steroids had side effects including weight gain (n=2), diabetes mellitus (n=1), Cushing's syndrome (n=1), psychosis (n=1), and weight gain (n-1).

Twenty six percent of patients were treated as outpatients only; 46.6% of patients were admitted 1-2 times; 11.7% were admitted 3-5 times; and 10.7% more than 5 times. Of the patients admitted more than 5 times, 5 had CD and 6 UC.

At the time of diagnosis, 3 CD and 3 UC patients had undergone appendectomy. Surgery was required in 11 (17%) UC and in 7 (18%) CD patients.

Discussion

Although the incidence of IBD is lower in developing countries and among people of African descent, studies have been limited in the past, and recent studies have shown an increase in IBD in several developing nations and in non-Caucasian populations [1,3,4]. Therefore, it seems that previously noted racial and ethnic differences are narrowing and may indicate that environmental factors may play a role [7]. The present series consisted predominantly of Jamaican patients of African descent. There were no patients with an obvious European ancestry which would therefore decrease the likelihood of a genetic predisposition in our patients.

Table 1 Presenting symptoms in patients with ulcerative colitis and Crohn's disease

Symptoms	Ulcerative colitis	Crohn's disease
	No (%)	No (%)
Diarrhea	63 (98)	30 (79)
PR bleed	41 (64)	15 (39)
Abdominal pain	25 (39)	24 (63)
Weight loss	18 (28)	08 (21)
Nausea and vomiting	07 (11)	12 (32)
Oral ulcer	02 (3)	00
Fistulas	02 (3)	04 (11)
Intestinal obstruction	00	03 (8)

PR, *per rectum*

The review of 103 cases of IBD indicates that it is a relatively uncommon disease over the study period.

A comparison of prevalence of UC across the world revealed that the prevalence in Asian countries is relatively low compared to North America and Northern Europe. In Japan, the prevalence of UC is 18.12 cases per 100,000 population, in South Korea it is 30.87, whereas India has a prevalence of 44.3 [8]. In Mediterranean countries, both the incidence and the prevalence of UC are much lower, 5.87 per 100,000 in urban areas [9]. In the Caribbean, Barbados reported 44.3 cases per 100,000 person-years [10]. However, the prevalence of UC was 269 per 100,000 population in the United Kingdom and 169.7 per 100,000 in Canada [9,11].

CD prevalence in Japan was 5.85 cases per 100,000 population, 11.24 in South Korea, and 16.7/100,000 person-years in Barbados [8,10]. In Canada, CD prevalence was 198.5 per 100,000 person-years [11].

Sporadic disease accounts for the majority of IBD cases, indicating that it is more likely to be engendered by a unique environmental trigger or by a more subtle abnormality within the enteric immune system. Current etiologic theories concerning IBD focus on environmental triggers, genetic factors, immunoregulatory defects, and microbial exposure [11]. Differences in incidence across age, time, and geographic region suggest that environmental factors significantly modify the expression of CD and UC. Environmental factors identified are cigarette smoking and appendectomy [12]. Epidemiological studies suggest that UC is more common in non-smokers, while CD is 2-4 times more common in smokers [4]. Smoking increases the risk of developing CD but not the risk of UC. Smoking cessation increases the risk of a UC flare while CD patients are more likely to show a decrease in disease severity [13]. Smoking has a negative effect on the course of CD, whilst having a protective effect, or has been shown to improve the disease severity of UC. In this study, there were a small number of patients who smoked and thus no conclusion could be made regarding the effect of smoking. It has been proposed that the excision of the appendix may have an immune-modulating effect that protects against UC [9]. Therefore a lower incidence of appendectomy is associated with a higher prevalence of UC. In this study, no conclusion could be made as only 3 patients with UC and CD had undergone appendectomy.

A number of studies have demonstrated aggregation of cases of UC or CD in families and of cases of both diseases in the same families, suggesting that patients may share a genetic background. First-degree relatives have a 10-fold higher risk of getting any of the two conditions. In our study, 7% had a family history of IBD, similar to reports from Asian countries but lower than that in Puerto Rico, where a family history was present in 19.3% of patients with UC and 17.5% with CD [3,5].

In the present study, UC was more prevalent than CD with a ratio of 1.6:1. This pattern is similar to reports from other developing countries as greater proportions of Hispanic and Asian patients were diagnosed with UC than with CD and the prevalence of CD was significantly less than UC in several Asian and other developing countries [1,3]. In North America and Europe, UC is more prevalent than CD [9,12,14].

However, the incidence of CD seems to be increasing especially in developed countries [4].

For patients with UC there was a female preponderance with a ratio of M:F=0.5:1 in this study. This is unusual as most countries report a similar gender occurrence or a slight male predominance [3,12]. However, in an earlier study in patients with UC, there were significantly more females similar to the present series [15]. In the present study there was a slight male predominance in patients with CD with a ratio of M:F=1.2:1. In other reports, there is usually a slight male predominance or an equal gender affliction reported [3]. However, in an early report of 103 cases, there were more women than men found [16].

Comparison of the present data with that of the rest of the Caribbean, reveal that in Barbados there was also a predominance of UC in a 2.6:1 ratio and a predominance of women [10]. In the French West Indies, there was also a predominance of UC with a female predominance. The median age of diagnosis was 29 years for CD and 34 years for UC, similar to our study population [17].

UC is classified according to the area of colon involved and include proctitis, left-sided colitis (involving the sigmoid colon with or without involvement of the descending colon), or pancolitis. A minority of patients also develop ileal inflammation (backwash ileitis). In this series of UC, left-sided colitis was present in 44%, with pancolitis being second in frequency, 31%. The predominance of left-sided colitis has been reported in other series [9]. It has been observed that the distribution of disease activity in a cohort of patients is remarkably constant each year [18].

In CD, any area of the intestinal mucosa may be affected from mouth to anus. It is segmental with skip lesion in the midst of diseased areas. Although the anatomical location of CD remains fairly stable over time, behavior of the disease varies substantially during its course [19]. The most prominent change is from non-stricturing to either stricturing (27%) or penetrating (29%) disease [20]. The Montreal classification consists of: a) age of diagnosis (below 16 years, 17-40 years, >40 years); b) location (ileal, colonic, ileocolonic, upper disease); and c) behavior (non-stricturing and non-penetrating, structuring, penetrating, perianal disease) [21]. In this series, most of the cases of CD had colitis only, with a fewer cases having involvement of the small bowel. This is unlike the pattern from other series in which ileitis, ileocolitis, and colitis accounted for about one third of cases, this pattern was also seen at the time of diagnosis [19]. However, it is possible that in our patients the disease may progress to involve the small intestine over time as the disease may be dynamic. It is of interest that in a study in Sweden ileal disease in CD was stable over time but there was an increase in colorectal disease [22]. In a series of patients in Texas, 27% of African Americans had colitis only compared to 15% in whites [23]. Another possible explanation is that in Jamaica colonic disease is the predominant area of involvement due to environmental factors. Epidemiologic studies have provided valuable information about the burden of illness and highlight differences in incidence of IBD across age, time, and geographic region,

suggesting that environmental factors can significantly modify the expression of these conditions. Further studies are needed to understand how these factors influence the expression of IBD, and to identify new risk factors [12].

In the present study there was a high prevalence of extra-intestinal manifestations (38%). This is similar to the 36% of the entire series of patients in an early report and 34.7% in 150 patients reported from India but higher than the 27% reported from Puerto Rico [5,24,25]. The high prevalence of extra-intestinal manifestations in our study population may be due to severe and complicated cases being referred to an academic center.

The main limitations of the study are the retrospective nature of obtaining information and the relatively small patient number. Also, the study enrolled patients at the main academic institution at which most patients are referred but it may not be representative of IBD in Jamaica.

In conclusion, IBD is a relatively uncommon disease in Jamaica. UC is more common than CD. The clinical features and outcome are similar to other reports. Further studies are necessary to determine the incidence and prevalence of IBD in developing countries and to establish its association with environmental factors and change in epidemiology.

Summary Box

What is already known:

- Inflammatory bowel disease (IBD) is primarily a disease of the developed world and in Caucasian populations
- There is an increase in IBD in several developing nations and in non-Caucasian populations
- Difference of prevalence between countries may be due in part to environmental factors

What the new findings are:

- IBD is relatively uncommon in Jamaica, primarily in ethnic groups of African descent
- Most cases of Crohn's disease in Jamaica had colitis

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