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Inflammatory Bowel Disease: A Retrospective Study

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Background: Inflammatory bowel diseases (IBDs), Crohn's disease (CD) and ulcerative colitis (UC) are a group of chronic intestinal inflammatory conditions.

Objective: To evaluate inflammatory bowel diseases in Bahrain.

Design: Retrospective study.

Setting: Department of Medicine, Gastroenterology Unit, Salmaniya Medical Complex.

Method: One hundred patients with IBD were included in the study from July 2007 to January 2008. Data collected include characteristics of patients, clinical presentation, endoscopic findings, histopathology, radiologic studies, extent of disease, complications, exacerbations, hospital admissions, associated medical diseases and management, medical or surgical.

Result: IBD affected 55 (55%) females and 45 (45%) males. The presenting symptoms were: 64 (64%) had diarrhea, 69 (69%) had gastrointestinal bleed and 57 (57%) had abdominal pain. The main complication was intestinal bleeding in 47 (47%). Steroid dependency was seen in 21 (21%) patients. The following medications were used: Asacol (Mesalazine) in 83 (83%), Azathioprine (Imuran) in 50 (50%) and infliximab in 8 (8%) patients.

Conclusion: IBD affected more females than males. Diarrhea, gastrointestinal bleed and abdominal pain were the most common presenting symptoms. More than half of cases of UC involved the left side of colon, while in CD the majority of cases involved small and large bowels. Most common drugs used were Mesalazine, Azathioprine and Infliximab.

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Inflammatory bowel disease (IBD) is a group of inflammatory conditions of the large and small intestine; it includes Crohn's disease (CD) and ulcerative colitis (UC)[1-3].

IBD have significant long-term morbidity and healthcare resource consequences. IBD is a common cause of gastro-intestinal disease in the Western world, the combined prevalence is 100-200/100,000[4]. In the Middle East, no sufficient data is available.

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The exact cause of IBD remains unknown, but several theories have been proposed. Hygiene theory suggests that an alteration in the microbial environment of patients facilitates the evolution of chronic immune-mediated diseases and development of IBD. Recent studies showed that there is an increased incidence of IBD because of exogenous infections, use of antibiotics and diet. Medical treatment options have rapidly expanded in recent years.

Current medical therapy is facilitative and supportive rather than curative. The principles of medical treatment are approximately the same for ulcerative colitis and Crohn's disease. Treatment emphasizes, besides drugs, the individuality of the therapeutic response[5].

Current disease management guidelines have therefore focused on the use of anti-inflammatory agents, aminosalicylates, corticosteroids, immuno-modulators and more recently biological drugs in addition to surgery.

The aim of this study is to evaluate inflammatory bowel diseases in Bahrain.

METHOD

One hundred patients with IBD were reviewed, from July 2007 to January 2008. Data collected include: patients' characteristics (age, sex, nationality, occupation, age at diagnosis, duration of disease, smoking and family history of IBD), clinical presentation, endoscopic findings, histopathology, radiologic studies (abdominal ultrasound, Barium studies and abdominal CT studies), extent of disease, complications (intestinal and extra intestinal), exacerbations, hospital admission, associated medical diseases and treatment, medical or surgical.

RESULT

One hundred patients were reviewed. Patients' characteristics are shown in the table 1. Fifty-eight (58%) patients were 30-50 years old. IBD affected 55 (55%) females and 45 (45%) males. Eighty-five (85%) patients were Bahrainis. Forty-nine (49%) patients were not working. Most of the employed patients are semiskilled and 91 (91%) were indoor workers.

Table 1: Characteristics of Patients with IBD

Variables	Number and Percentage
Unemployed	49 (49%)
Place of work	
Indoor Work	91 (91%)
Outdoor Work	9 (9%)
Age Groups (Years)	
0-20	4 (4%)
21-30	16 (16%)
31-40	31 (31%)
41-50	27 (27%)
51-60	13 (13%)
61 and above	9 (9%)
Sex	
Male	45 (45%)
Female	55 (55%)
Nationality	
Bahraini	85 (85%)
Non-Bahraini	15 (15%)
Occupation	
Professional	6 (6%)
Skilled	16 (16%)
Semiskilled	23 (23%)
Worker	6 (6%)

Eighty-two (82%) patients had ulcerative colitis; 16 (16%) had Crohn's disease and 2 (2%) were undetermined, see Figure 1. Fifty-nine (59%) patients were diagnosed between 20-40 years. Forty-four (44%) patients had IBD between 0-5 years, 23 (23%) 6-10 years, twenty-four (24%) 11-15 years, 7 (7%) 16-20 years and 2 (2%) patients 20 years or more. Ninety-eight (98%) IBD patients were non-smoker. Most patients gave negative family history for IBD, see table 2.

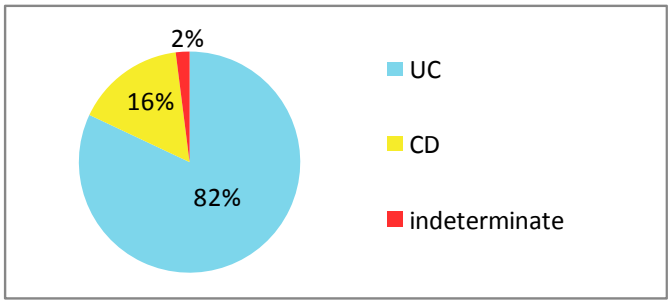

Figure 1: IBD Diagnosis

Table 2: Clinical Pattern of IBD

Variables	Number and Percentage
Diagnosis	
UC	82 (82%) M 39 (39%) F 43 (43%)
CD	16 (16%) M 5 (5%) F 11 (11%)
Indeterminate	2 (2%) M 1 (1%) F 1 (1%)
Patient Age at Diagnosis	
0-20	19 (19%)
21-30	29 (29%)
31-40	30 (30%)
41-50	16 (16%)
51-60	9 (9%)
61 and above	0 (0%)
Duration of Disease (Years)	
0-5	44 (44%)
6-10	23 (23%)
11-15	24 (24%)
16-20	7 (7%)
21 and above	2 (2%)
Smoking	
Smokers	2 (2%)
Average Duration of Smoking (yrs)	2.2 (2.2%)
Family History of IBD	
Ulcerative Colitis	
Father	1 (1%)
Mother	1 (1%)
Brother	2 (2%)
Sister	1 (1%)
Crohn's Disease	
Father	0 (0%)
Mother	0 (0%)
Brother	2 (2%)
Sister	0 (0%)

The presenting symptoms were: 64 (64%) had diarrhea, 69 (69%) had gastrointestinal bleed and 57 (57%) had abdominal pain. Less common symptoms were: 8 (8%) had weight loss, 5 (5%) had perianal and anal symptoms, 4 (4%) had fever and 3 (3%) had dyspepsia, see table 3 and Figure 2. Ninety-four (94%) patients had colonoscopy, 32 (32%) had esophagogastroduodenoscopy (OGD) and 18 (18%) had sigmoidoscopy.

Table 3: Presentation of IBD

Variables	Number and Percentage

Diarrhea	64 (64%)
GI Bleeding	69 (69%)
Abdominal Pain	57 (57%)
Others	23 (23%)
Weight Loss	8 (8%)
Perianal and Anal symptoms	5 (5%)
Fever	4 (4%)
Dyspepsia	3 (3%)
Arthralgia	1 (1%)
Jaundice	1 (1%)
Pallor	1 (1%)

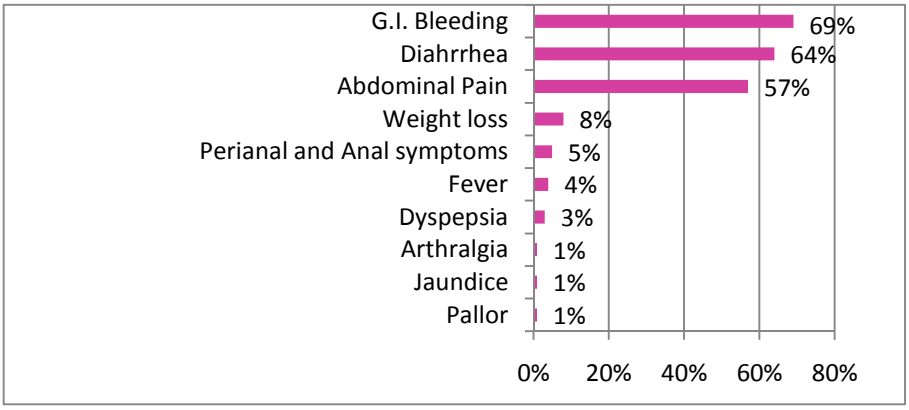

Figure 2: Presentation of IBD

Histopathology was done for 94 (94%) patients, barium study for 20 (20%), abdominal ultrasound for 17 (17%) and abdominal CT for 14 (14%), see table 4. Forty-three (52.4%) of UC patients involved the left side of the colon, 33 (40.2%) had pancolitis, and 6 (7.3%) had distal colitis, see figure 3.

Table 4: Diagnostic Procedures

Variables	Number and Percentage
Endoscopic procedures	
OGD	32 (32%)
Colonoscopy	94 (94%)
Limited Colonoscopy	6 (6%)
Sigmoidoscopy	18 (18%)
Histopathology Study	94 (94%)
Abdominal Ultrasound	17 (17%)
Barium Study	20 (20%)
Abdominal CT	12 (12%)

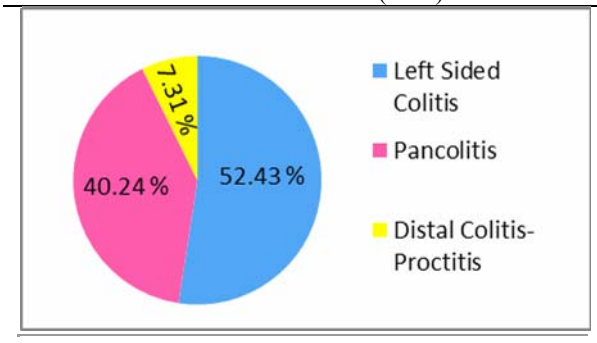

Figure 3: Extent of UC

Twelve (75%) of CD involved small and large bowels, 2 (12.5%) involved small bowel alone, one patient (6.25%) involved large bowel alone and one patient (6.25%) involved perianal area, see table 5 and figure 4. Forty-seven (47%) had intestinal bleeding, 14 (14%) had sepsis, 10 (10%) had polyps, 6 (6%) had fistula, 4 (4%) had stricture and 3 (3%) had obstruction.

Table 5: Extent of Disease

Disease	Number and Percentage
Ulcerative Colitis	82 (82%)
Distal Colitis -Proctitis	6 (7.3%) of UC
Left Sided Colitis	43 (52.4%) of UC
Pancolitis	33 (40.2%) of UC
Crohn's Disease	16 (16%)
Small Bowel alone	2 (12.5%) of CD
Large Bowel alone	1 (6.25%) of CD
Small and Large Bowel	12 (75%) of CD
Perianal	1 (6.25%) of CD

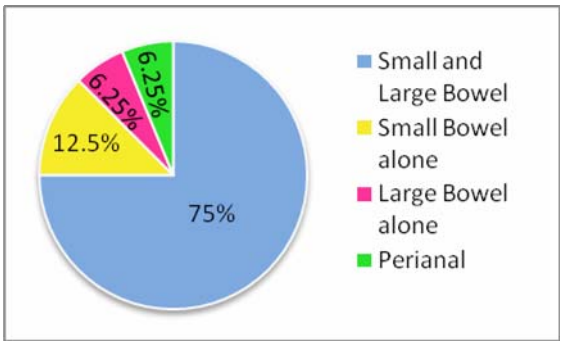

Figure 4: Extent of CD

Twelve (12%) patients had arthritis, 11 (11%) had skin lesions and 7 (7%) had anemia. Sclerosing cholangitis was seen in 2 (2%) patients and autoimmune hepatitis was seen in one patient (1%), see table 6 and figure 5.

Table 6: Complications of IBD

Intestinal	Number and Percentage
Toxic Colitis	0 (0%)
Obstruction	3 (3%)
Stricture	4 (4%)
Bleeding	47 (47%)
Perforation	1 (1%)
Fistula	6 (6%)
Sepsis	14 (14%)
Cancer	0 (0%)

Polyp	10 (10%)
Extraintestinal	
Sclerosing cholangitis	2 (2%)
Autoimmune hepatitis	1 (1%)
Arthritis	12 (12%)
Skin	11 (11%)
Other	
Eye disease	5 (5%)
Arthralgia	3 (3%)
Anemia	7 (7%)

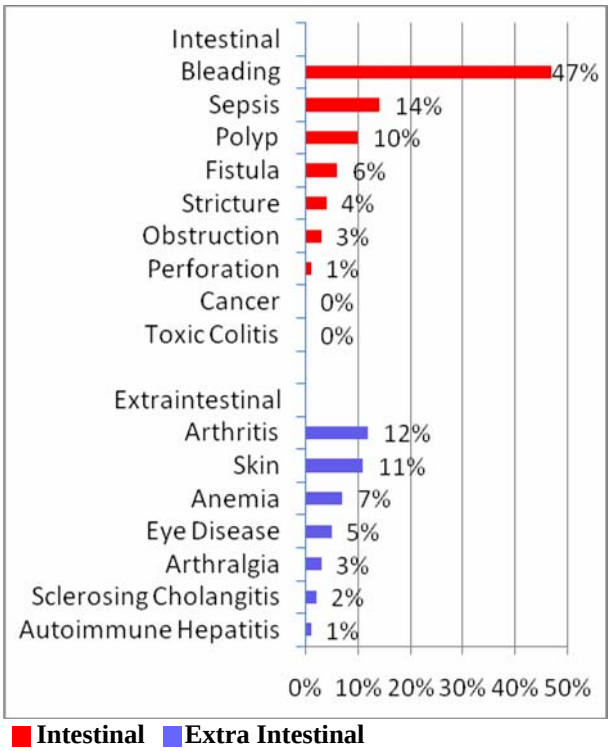

Figure 5: Complication of IBD

The average exacerbation of IBD was once per year in 27 (27%) patients, two exacerbations per year were seen in 13 (13%) patients, once in two years in 19 (19%) and once every 3 to 5 years in 20 (20%). Fifty-two (52%) patients required admission to hospital, see table 7. The following diseases were associated with IBD: diabetes Mellitus was found in 11 (11%) patients, hypertension in 10 (10%), G6PD deficiency in 6 (6%), sickle cell trait in 6 (6%), hyperlipidemia in 4 (4%), and sickle cell disease in one patient (1%), see table 8.

Table 7: Average Attacks of Exacerbation and Admission of IBD Patents

Exacerbation	Number and Percentage
No exacerbation (0)	17 (17%)
one attack every 6-10 years	1 (1%)
once every3-5 years	20 (20%)
once every two years	19 (19%)
1 per year	27 (27%)
2 per year	13 (13%)
3 per year	3 (3%)
Admission per year	
Not Admitted (0)	48 (48%)
One every 6-10 years (0.1)	5 (5%)
Once 3-5 years (0.25)	15 (15%)
Once every two years (0.5)	5 (5%)
1 per year (1)	23 (23%)
2 per year (2)	2 (2%)
3 per year (3)	2 (2%)

Table 8: Associated Diseases

Disease	Number and Percentage
Diabetes Mellitus	11 (11%)
Hypertension	10 (10%)
Ischemic Heart Disease	3 (3%)
Rheumatoid Arthritis	1 (1%)
Others	
G6PD decreased activity	6 (6%)
Sickle Cell Trait	6 (6%)
Hyperlipidemia	4 (4%)
Irritable Bowel Syndrome	3 (3%)
Hypothyroidism	3 (3%)
Osteoporosis	3 (3%)
Sickle Cell Disease	1 (1%)

Twenty-one (21%) patients were steroid dependent (steroid dependence was defined as a requirement for steroid therapy ≥ 10 mg/day during the preceding six months, with at least two attempts to discontinue the medication)[6]. Six (6%) patients had GI surgery, 3/6 patients (50%) had small bowel surgery, 3/6 patients (50%) had perianal surgery. Eight (8%) patients had endoscopic polypectomy.

The following drugs were used: Asacol (Mesalazine) in 83 (83%) patient, Imuran (Azathioprine) in 50 (50%), Steroid in 21 (21%), Asacol suppository in 17 (17%), Pentasa (Mesalazine) in 13 (13%), Infliximab in 8 (8%) and Folic acid in 71 (71%), see table 9.

Table 9: Management

Steroid Dependency	Number and Percentage
Steroid Dependent	21 (21%)
Steroid Non-Dependent	79 (79%)
Endoscopic Polypectomy	8 (8%)
Surgery(All surgeries)	24 (24%)
GI Surgery	6 (6%)
No Surgery	76 (76%)
Type of Surgery	
Colectomy	0 (0%)
Small Bowel Surgery	3 (3%) (50% of GI surgeries)
Perianal Surgery	3 (3%) (50% of GI surgeries)

Other Surgery (Not GIT)	18 (18%)
Types of Drugs Used in Treatment	
Asacol (Mesalazine)	83 (83%)
Pentasa (Mesalazine)	13 (13%)
Steroid	21 (21%)
Immunosuppressive - Imuran	50 (50%)
Infliximab	8 (8%)
Folic Acid	71 (71%)
Other	
Omeprazole	14 (14%)
Iron	11 (11%)
Librax	5 (5%)
Asacol Suppository	17 (17%)
Salazopyrin	5 (5%)
Steroid Enema	1 (1%)
Anti TB	2 (2%)

DISCUSSION

This study showed that age ranged 30 to 50 years, a mean of 40.69 years. A review study, the median age of onset of IBD was 35 years[7]. In another study, the age of patients showed biphasic distribution with two peaks between 20 and 30 and 50 and 70 years[8].

In this study, females are affected more than males, for both types of IBD, UC and CD. Other studies showed that men and women at similar risk for UC. In CD, males are affected more than females, while in Western population females are affected more than males[7]. In a study in Lebanon, more males have been affected than females in CD (69.3%) and in UC (61.4%)[9].

Fifty-one (51%) patients were employed; ninety-one (91%) were indoor workers. In a study, the mortality was higher in sedentary indoor workers compared to farmers and construction workers[10]. Sonnenberg suggested that employment involving outdoor air and physical activity is protective against IBD[11].

In this study, the age at diagnosis of IBD was between 20-40 years, other studies showed that the peak age was 15-30 years old, although IBD can occur at any age[10].

In this study, most patients were non-smoker; this is similar to other studies where smoking prevalence was significantly lower in UC patients than in general population (9% versus 28%)[12].

In this study, the common presenting symptoms were Diarrhea, gastrointestinal bleed and abdominal pain, less common symptom was weight loss. The cardinal symptom of UC is bloody diarrhea; symptoms of colicky abdominal pain, urgency or tenesmus may be present. Symptoms of CD are more heterogenous, but typically include, abdominal pain, diarrhea and weight loss[13].

In this study, the following investigative procedures were performed: colonoscopy 94 (94%), sigmoidoscopy 18 (18%) and histopathology 94 (94%). Compared with other studies diagnostic criteria were endoscopy, histopathology and radiology[14,15].

In this study, Forty-three (52.4%) of UC patients involved the left side of the colon, 33 (40.2%) had pancolitis, and 6 (7.3%) had distal colitis; our result is comparable with other studies[14].

In this study, CD involved small and large bowel in 12 (75%), small bowel alone in 2 (12.5%), large bowel alone in one patient (6.25%) and perianal area in one patient (6.25%). Butt et al, in a study of CD showed that ileo-colonic disease affected 52%, ileal disease 24% and colonic 24%[16].

Intestinal complications of IBD in this study were: forty-seven (47%) had intestinal bleeding, 14 (14%) had sepsis, 10 (10%) had polyps, 6 (6%) had fistula, 4 (4%) had stricture and 3 (3%) had obstruction. In a study of patients who had Crohn's disease, gastrointestinal complications particularly abdominal sepsis, intestinal ischemia, and intestinal hemorrhage accounted for the excess of mortality[17]. Twelve (12%) patients had arthritis, it was the most common extraintestinal complication seen in our study, 11 (11%) had skin lesions and 7 had (7%) anemia, compared with other studies, joints manifestations were the most common[18,19].

In our study, average exacerbation of IBD was once per year in 27 (27%) patients, while in another study relapses was seen in 32.9%, that study suggested that stressful life events do not trigger exacerbations in patients with IBD[20]. Elderly patients with IBD using mesalazine and corticosteroid lead to adverse effects including osteoporosis, bone fractures, changes in mental status, diabetes and hypertension[21].

In this study, steroid dependency was seen in 21 (21%) patients with IBD, which is comparable to other studies[22,23]. In patients with steroid dependency, it might be advisable to consider the use of biological agent (such as infliximab) for better control of IBD.

CONCLUSION

IBD affects females more than males. Eighty-two (82%) patients had Ulcerative Colitis, 16 (16%) had Crohn's disease and 2 (2%) were undetermined. Diarrhea, gastrointestinal bleed and abdominal pain were the most common presenting symptoms. More than half of the cases of UC involved left side of colon, while in CD, the majority of cases involved small and large bowels. 21 (21%) patients were steroid dependent. The most common drugs used was Asacol (Mesalazine), Imuran (Azathioprine) and Infliximab. This study is limited and does not reflect the whole problem of IBD in Bahrain.

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