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ORIGINAL ARTICLE

Inflammatory Bowel Disease (IBD) in Northeast of Iran

SEMNANI SH*, AZARHOUSH R, ABDOLAHI N, BESHARAT S***, ROSHANDEL GH****, JABBARI A****, ROSHANDEL D*****, KALAVI KH******

Abstract:

This study was designed to provide the clinical and epidemiological data on Inflammatory Bowel Disease (IBD) in the Golestan province (northeast of Iran). We carried out a retrospective study with regards to all IBD patients (pathologically confirmed cases) during 2001- 2004.

Registered cases were 108 [104 with Ulcerative Colitis (UC) and 4 with Crohn's disease (CD)]. Information about age, sex, education, colitis extent, extra intestinal manifestations, the lag between onset of the disease, and time of final diagnosis, were recruited. Data were analyzed using SPSS –V12 analytical software.

There was a slight female predominance in UC cases. Most of the cases (83.3%) were highly educated, and 65.7% were living in urban areas. Patients with US mainly presented with diarrhoea, whereas those with CD complained of abdominal pain. The predominant form of UC was left sided colitis, which affected almost 35.4% of patients. The most extensive form (pan colitis) was present in 22.1%. Mean age was significantly different with regards to anatomical sites; patients with proctitis was younger than other groups (p =0.001). The mean lag time between the onset of symptoms and definite diagnosis was 2.2± 1.1 and 5 months in UC and CD, respectively. Extra intestinal manifestations were seen in 10 patients.

In the Golestan province, IBD is predominant in females, and its most severe form is higher than that documented in European studies.

Keywords:
IBD, Ulcerative Colitis (UC), Crohn's Disease (CD), Iran

*Associated Professor, Department of Internal Medicine; Faculty of Medicine, Golestan University of Medical Sciences, Golestan Research Centre of Gastroenterology and Hepatology. Gorgan, Iran.

** Assistant professor, Department of pathology, Faculty of Medicine, Golestan University of Medical Sciences.

****Physician, Golestan Research Centre of Gastroenterology and Hepatology. Gorgan, Iran.

*****Medical student, Golestan University of Medical Sciences, Golestan Research Centre of Gastroenterology and Hepatology.

******MSc of Hematology, Golestan University of Medical Sciences, Golestan Research Centre of Gastroenterology and Hepatology.

***Corresponding Author; Physician, Golestan Research Centre of Gastroenterology and Hepatology. E-mail: s_besharat_gp@yahoo.com. Tel: 0098-171-2240835, Fax: 0098-171-2269210. Address: Research Deputy, Falsafi Medical University, West entrance of Gorgan city, Golestan Province, Iran

Introduction:

Inflammatory Bowel Disease (IBD) is a chronic disease with unknown aetiology [1]. Geographic variations in the incidence of IBD can help to identify aetiological factors [2]. The two most common entities of IBD, Ulcerative Colitis (UC) and Crohn's Disease (CD) are more common in developed countries than developing countries [1]. Numerous studies in Europe and North America have provided a wealth of information regarding the epidemiological and clinical characteristics of IBD [3]. In contrast, there are few data in literature, describing the pattern of the disease in Asia. In Iran, there have been studies on IBD that are largely attributed to the lack of a national registry system, as well as to the traditional beliefs on the rarity of IBD [4-9]. On the other hand, as Golestan province is a region of different ethnicities, and there are no reports of IBD, we aimed to define the

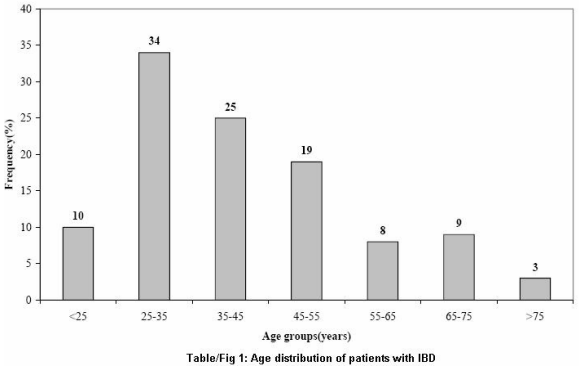
demographic features and clinical characteristics in patients with IBD who had been referred to the endoscopy center of Golestan province during 2001-2004.

Materials and methods:

Data from all patients with IBD (colonoscopy confirmed diagnosis) from 2001 up to 2004, which were referred to the GI clinic (in Gonbad and Gorgan city, the two greatest cities of the province) in Golestan province, were included in the study. IBD diagnosis was based on the typical clinical course of disease and endoscopic examination, with histological confirmation of UC or CD. Patients with undifferentiated colitis were excluded. Clinical characteristics at the initial presentation were obtained by reviewing of their medical records. Endoscopic and pathological reports were reviewed too. Ulcerative colitis was categorized by the extent of disease, which was defined macroscopically by the proximal limit of inflammation at colonoscopy, and was divided into the following four categories:

1. Proctitis: Inflammation confined to the rectum only
2. Rectosigmoid colitis: Inflammation involving rectum and sigmoid colon
3. Left-sided colitis: Inflammation extending from the rectum to the splenic flexure
4. Pancolitis: Inflammation proximal to the splenic flexure.

Data about age, sex, education, smoking, place of residence, type of disease, lag time between the onset of complaints, and definite diagnosis, were obtained from the medical records, and in the case of incomplete data, telephone calls were used. Measured values were shown as mean ± SD. Non- parametric kraskull- wallis and chi-square or Fisher's exact tests were used to analyze data. A p-value of less than 0.05 was considered statistically significant.



Table/Fig 1: Age distribution of patients with IBD

Results:

During the period of study, 108 patients with IBD (mean age 37.7± 15.1 years) were registered. Among these cases, 104(97.3%) were diagnosed as ulcerative colitis, and only 4 (3.7%) were diagnosed as CD.

Therefore, the UC/CD ratio was 26/1. Patients with CD were younger at the time of diagnosis (32.7± 3.8 vs. 37.8 ± 15.1; range 12-77 years), and a slightly female predominance was observed in both types of disease (female /male ratio was 1.2/1 in UC and 3/1 in CD). The majority of the subjects were living in urban areas (65.4 % and 75% for UC and CD patients, respectively).

Meanwhile, 83.3% of IBD cases were highly educated . Among the males, 30 cases with UC and 1 with CD were smokers. Pack year data were not available. The main chief complaint was diarrhoea in UC, and abdominal pain in CD patients. There were no significant differences in the age of diagnosis between men and women (37.8 ± 15.3 vs. 37.5 ± 15.1 years, p=0.93).

Age histogram of the patients showed a peak between 25 and 35 years of age [Table/Fig 1]. The age of disease onset was associated with the extent of colitis. The highest proportion of proctitis was found in patients less than 30 years of age (68.8%).

Table/Fig 2: Demographic characteristics of studied patients with Ulcerative Colitis

Patients characteristics		Proctitis (n=16)	Pancolitis (n=23)	Rectosigmoid colitis (n=28)	Left sided colitis (n=37)	Df	Asymp sign
Age at diagnosis(year)		28.2±14.3	36.6±14.9	38.8±14.4	42.32±15.3	3	0.01
Gender	Male	8	9	16	13	3	0.9
	Female	8	14	12	24		
Place of residence	Urban	7	15	21	25	3	0.2
	Rural	9	8	7	12		
Educational level*	High	14	20	24	30	3	0.9
	Low	2	3	4	7		
Smoking	No	13	20	23	32	3	0.9
	Yes	3	3	5	5		
Time of becoming symptomatic to Dx		2.8±1.9	3.5±1.8	4.1±1.7	4.1±3.2	3	0.19

*Educational level: -High=graduated from high school/college
-Low= illiterate or undergraduate

The predominant form of UC was left sided colitis, which affected 35.6% (n=37) of the studied patients. The most extensive form (pan-colitis) was present in 22.1% of patients. (n=23). The extent of UC was age – dependent, and the mean age of patients with pan-colitis was 36.6± 14.9, that of patients with left side colitis was 42.3± 15.3, and that of patients with proctitis was 28.2± 14.3 years (p=0.01). There were no significant differences related to the extent of UC with respect to sex, place of residence, and smoking [Table/Fig 2]. The mean lag time between the onset of complaints and definite

diagnosis was 2.2± 1.4 months for UC, and 5 months for CD. Extra intestinal manifestations were seen in 10 patients (9.25%) as follows: fatty liver in 5 patients, primary sclerosing cholangitis in 4 patients, arthritis in 3, and pyoderma gangrenosum in one. The mean age of these patients was 36.8±9.8 years, and 60% of them were female.

Discussion:

The first immediate observation demonstrated that the prevalence of IBD cases is high in the Golestan province. Previous studies from 2 hospitals in Tehran (1992-2002) registered 401 patients with UC, and 47 with CD throughout 10 years [9]. These patients were from the capital city of Iran (Tehran); but in this study, the data originated from a small region of Iran which has a population about 1.5 millions. Thus; the report of 108 patients during 3 years from this small region is noticeable. Better diagnostic techniques, access to health care facilities, and increased awareness of health care professionals, have undoubtedly contributed to this difference.

However, this can only explain part of the rise, and it is widely thought that a westernized lifestyle, including diet habits and increasing urbanization and industrialization, may also have had an effect. We demonstrated the predominance of IBD in the urban population and in highly educated patients. Maybe the detection rate of IBD is lower in those living in rural areas and with lower educational levels.

The hygiene hypothesis is thought to be a significant contributor to the growing incidence of inflammatory bowel disease (IBD) around the world, although the evidence for specific factors that underlie the hygiene hypothesis in IBD is unclear. This hypothesis comes from observations that the rise in incidence of IBD, both in developed and developing countries, has coincided with improvements in hygiene over the 20th century. These improvements in hygiene include access to clean water, a hot water tap, a smaller family size, and thus, less crowding, non-contaminated food, and hygienic products such as toothpaste [10].

UC is decisively more common than CD (ratio 26/1). Similarly, in most European and Asian countries, UC is more common, with a few exceptions in the United Kingdom, France and Germany [3],[11-13].

As our results showed, the diagnosis of IBD can be made at any age, but CD is more frequent in younger patients than in UC. These findings are similar to the European studies [3],[9],[14-15). Unlike other Asian countries, and studies performed by Malekzadeh et al. and Aghazadeh et al [8],[9],[11-12], the present study showed a smaller second peak among older patients, that should be considered as an alarm sign for physicians to mention symptoms of these group.

The mean age of patients with proctitis was significantly lower than other groups. No other study showed this as an important finding.

Data on anatomical extent cannot be easily compared, mainly due to variations in terminology, while our data about the extent of colitis is in agreement with many other studies, except for the severe form that is higher than other Iranian studies [5],[9],[16].

After determining the clinical pattern of IBD, we found a slight predominance in females, which had been shown in some previous studies and has not been shown in some others [13],[17]-[20]. Maybe the higher sensitivity and/or hormonal stresses/changes could explain this predominance, to some extent. In order to know the aetiology, complementary studies are suggested.

It is reported that non smokers have a higher risk for developing UC. In contrast, smoking is known as a risk factor for CD [21],[22]. The present data cannot support this hypothesis; because we don't know the exact prevalence of smoking in the normal population.

We found that 9.8% of IBD patients had more than one extra intestinal manifestation. This percentage was 41.4% in Aghazadeh's report, 34.7% in Indian population, 24.1% in Korean patients, and 21 to 41% in western studies [9], [23],[24],[25]. It is probably a failure of the registration system. Inflammatory bowel disease is a systemic illness, not limited to the gastrointestinal tract. A substantial fraction of patients develop extra-intestinal manifestations, which itself can cause additional morbidity and complications [26].

In conclusion; the occurrence of UC is higher than that of CDs in the Golestan province.. Female predominance was observed, and the most common clinical presentations were left – sided colitis and pancolitis. Extraintestinal manifestations were less common than other studies.

Although consideration of patterns of geographic variations, age and gender distribution and the impact of known risk factors

may yield valuable clues to the cause of IBD, determining the prevalence and incidence rates of IBD among the Iranian population seems to be necessary.
To meet this demand, a systematic registry should be set up for IBD in different referral centers.

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