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Epidemiological Characteristics of Ulcerative Colitis in patients from Khuzestan Province, Iran.

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ABSTRACT

Ulcerative Colitis (UC) is considered as one of the most important clinical demonstrations of inflammatory bowel disease. The aim of this retrospective study was to evaluate and clarify the different clinical aspects and epidemiological characteristics of UC in Khuzestan province of Iran. In this case series study, 134 patients with UC who were referred to the gastroenterologists of Ahvaz from the different regions of Khuzestan Province, were evaluated between 2014 and 2015 and different information about patients was collected by a questionnaire and finally SPSS 17 statistical software and the Pearson chi-square, binomial test were used for data analysis. 69 women (51.5%) and 65 men (48.5%) were identified the average age of patients at the time of diagnosis was 32.3 and male / female ratio was reported to be 0.94 to 1. Abdominal pain (56.6%), bloody stools (56.6%) and diarrhea (52.1%) were three of the most prominent clinical signs of this disease. Pan colitis with (45.5%) was determined as the dominant form of this disease. Also extra intestinal manifestations were reported to be present in 74% of patients. Considering the growing trend of the disease and its unknown epidemiological profile, further studies is necessary for the evaluation of patients.

Keywords: Ulcerative Colitis, Epidemiology, Signs and Symptoms, Khuzestan

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INTRODUCTION

Ulcerative Colitis (UC) is a type of inflammatory bowel disease which has an unknown etiology [1]. Three major factors of genetics, immune system and environmental factors are involved in the development of UC. Environmental factors are matters such as diet and Nutritional status, smoking, toxins, drugs and various infections and immune factors are excessive secretion of inflammatory cytokines such as Interleukin 1 (IL-1), Interleukin 6 (IL-6), and Tumor Necrosis Factor alpha (TNF-α) [2-4]. UC is a chronic and recurrent mucosal disease which affects large intestine or colon and leads to inflammation and ulcers in the intestine. During mild inflammation mucosa turns to erythematous and has small granules and in the more severe form, mucosal suffers bleeding, swelling and scarring. Mucosa may seem normal when the disease is in remission but in patients who are suffering for many years, mucosal is atrophy shape and colon is short and narrow [5-7]. The incidence of UC varies in different geographical areas. UC has the highest incidence in Europe, UK and North America. Also the incidence of Ulcerative Colitis is increasing in South Korea, Singapore, India, North and Latin America, although it was previously considered to be low and Amongst the Asian countries, Japan and Korea have the highest incidence of UC disease after India [8, 9]. The same idea was proposed for Iran but increasing data published on UC and other inflammatory diseases is suggesting either increasing its incidence or progress of medical diagnosis in the country. from 1970 to 2012, Iran and Asian articles were evaluated for inflammatory bowel disease and it was concluded that the incidence of UC has been increasing in Iran and the other Asian countries and the greatest difference between Iran and Asia is in extra intestinal demonstrations, and family history of the disease and another study estimate the prevalence of UC and its trend in Iran at national level from 1990-2012, and it was reported that the incidence of it in Iran were similar with Central Asian, Middle Eastern and East European countries, according to these results, UC prevalence increased from 3.62 to 35.52 per 100,000 in 1990-2012 [2, 10, 11].

The average age of start of Ulcerative colitis is between 15 and 30 years old and another peak has been reported to be between 50 to 80 years old [12, 13]. Appendectomy and smoking are factors that increase the risk of colitis [14]. However, the role of smoking is controversial, because some studies have referred to a protective role of cigarettes against UC [15]. In Iran, like other countries, the prevalence of UC is constantly growing due to changes in the life style on one hand and industrialization of people's life, on the other hand as well as changes in environmental conditions and nutritional habits [16-18]. UC is divided into different types based on the location and severity of inflammation in the intestine. Procolitis, an inflammatory which is limited to the rectum, proctosigmoiditis, includes inflammation of the rectum and sigmoid colon which is a short section of colon and next to rectum and left-side colitis, is an inflammation which starts from the rectum and continues until the left colon and disease severity is divided to the forms of mild, moderate, severe and aggressive or fulminant and the disease pattern in most patients is chronic [19, 20]. The major symptoms of this disease include; diarrhea, bloating, rectal bleeding, mucus excretion and crampy abdominal pains and when the disease goes beyond the rectum, blood is usually mixed with stool and dysentery can be clearly seen [12, 13]. Patients with UC may suffer from various extra intestinal demonstrations such as eye involvement, joint pain, skin irritations and wound inside the oral cavity [13] as well as the fact that patients may have other inflammatory diseases and chronic autoimmune such as rheumatoid arthritis, Graves' disease, celiac disease, cholangitis, ankylosing spondylitis and psoriasis [21-23]. Masjedizadeh et al, carried out a study in order to examine various forms of epidemiological aspects of the disease in 2007 in Khuzestan Province and 166 patients with UC were examined. Their findings showed that the prevalence of UC has been increasing as in other areas of Iran and more women have been reported than men, also extra-intestinal symptoms and colon cancer have been less in these patients [24]. Another study on 200 patients which was conducted by Daryani et al, has shown that Colitis has been similar to other part of the world in demographic characteristics but extra-intestinal complications have been higher compared to other studies [17]. Aghazadeh et al in a study conducted in 2004 on 457 patients with inflammatory bowel disease, reported that the prevalence of this disease is increasing like other countries and the average age of patients with UC is 31.9 [18]. In addition, Emami and colleagues at the Hospital of Ardabil during 2004 to 2010 studied 80 patients with UC, reported male / female ratio to be 0.8 to 1 and also rectal involvement (1.25%), recto sigmoid (33.75%), left-side Colitis(28.75%) and (5%) pancolitis UC were reported [25].

In a study carried out by Shirazi et al, 200 patients with inflammatory bowel disease admitted to a hospital in Tabriz during 2005 to 2007, were examined and 183 patients had colitis. In this study, 10.9% of patients with UC had a close family relationship and among UC patients, left-side colitis has been reported as

the dominant form with 52.5 %. Also the prevalence of this disease in men has been more than women and effective respond to drug therapy has been observed in these patients [26].

Previous reports from Iran demonstrated increasing incidence of UC in Iran, but because of the different ethnicities and wide geographic condition in Iran, further studies are needed. In this study we evaluate the different clinical aspects and epidemiological characteristics of UC in Khuzestan province of Iran.

MATERIALS AND METHODS:

In this case series study, 134 patients with UC who were referred to the clinic of gastroenterologists in Ahvaz, between 2014 - 2015 from various parts of the Khuzestan province took part and the diagnoses was done based on patient history and clinical signs, negative bacterial toxins test of the stool and microscopic analysis and histological examinations of rectum or colon biopsies and endoscopy and colonoscopy. Information about patients was collected using interview and a questionnaire that contained demographical data including age, gender, marital status, ethnicity, monthly income, education level as well as Information on individual's disease such as clinical demonstrations of the disease, family history of disease, tobacco use by patients and their relatives and the usage of treated water. Moreover, age at diagnosis, history of surgery, undergone drug treatment, other underlying diseases and phenotype of the diseases were recorded by gastroenterologist. All the data was analyzed by SPSS version 17 software.

RESULTS:

During this study, 134 patients with UC were studied that a total of 69 patients (51.5%) were female and 65 (48.5%) were male and the ratio of male /female in the study had been 0.94 to 1 and no significant difference was observed in gender distribution between men and women (P value=0.7).

Table 1: Distribution of ulcerative colitis patients by age and gender in Khuzestan (2014-2015)

Age group / year	female	male	total	percent
10-20	3	1	4	3
21-30	18	15	33	24.5
31-40	23	25	48	36
41-50	17	11	28	21
51-60	6	11	17	12.5
61-70	2	2	4	3
Total	69	65	134	100

The data of table1 was evaluated using the Pearson chi-square test and showed that there is no significant correlation between gender and age groups (P value=0.496).

In this study, about 29 patients (21.7%) were single and 105 (78.3%), were married. The average age of these patients at the visit time was 37.57 years with minimum age of 18 years and maximum age was 68 years, also the average age of diagnosis in these patients was reported to be 32.37 years old. 96.3% of patients lived in urban areas and 3.7% of them lived in rural areas. Patients in the study were chosen from different ethnicities of the Khuzestan province, in a way that 71 patients (53%) were Arab, 1 patient (0.75%) was Turk, 59 patients (44.05%) were Fars and 3 patients (2.2%) were Kurd and also binomial statistical analysis test showed that there is no significant differences between ethnic groups (P value=0.195).

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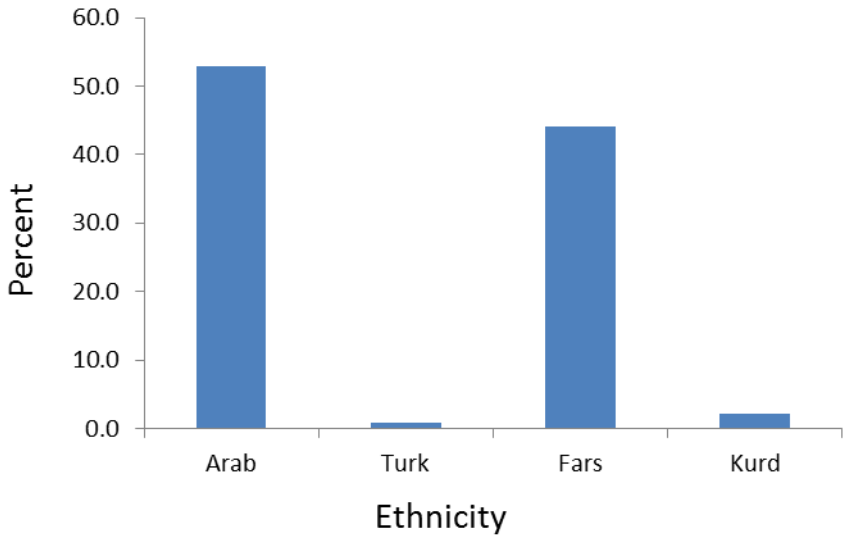

Figure 1. Ethnicity of the Ulcerative colitis patients in Khuzestan (2014-2015)

About 70.7% of patients had an average income of 500.000 to 1.000.000 tomans per month, 22% had an income of 1.000.000 to 1.500.00 tomans per month and the rest, meaning approximately 7.3% of patients had an income equal to or more than 1.500.000 tomans per month. Patients were from different levels of education, in a way that 50.2 % of patients had university education, 34.5% of patients had high school diploma, 10% had the ability to write and read and about 5.3% were illiterate.

Clinical demonstrations; Blood in the stool (56.6%), abdominal pain (55.6%), stress (54.7%) and diarrhea (52.1%) were the most common symptoms and nausea and abdominal mass by 3.3% and 3.4% were reported respectively as the rarest symptoms. Other symptoms included; Constipation 15.3%, fever 21.3%, headache 29.3%, insomnia 12.2%, Mouth ulcers 5%, weight loss 25.3%, rectal bleeding 14.9%, back pain 21.9%, bloating 42.5% and anorexia 12.8%.

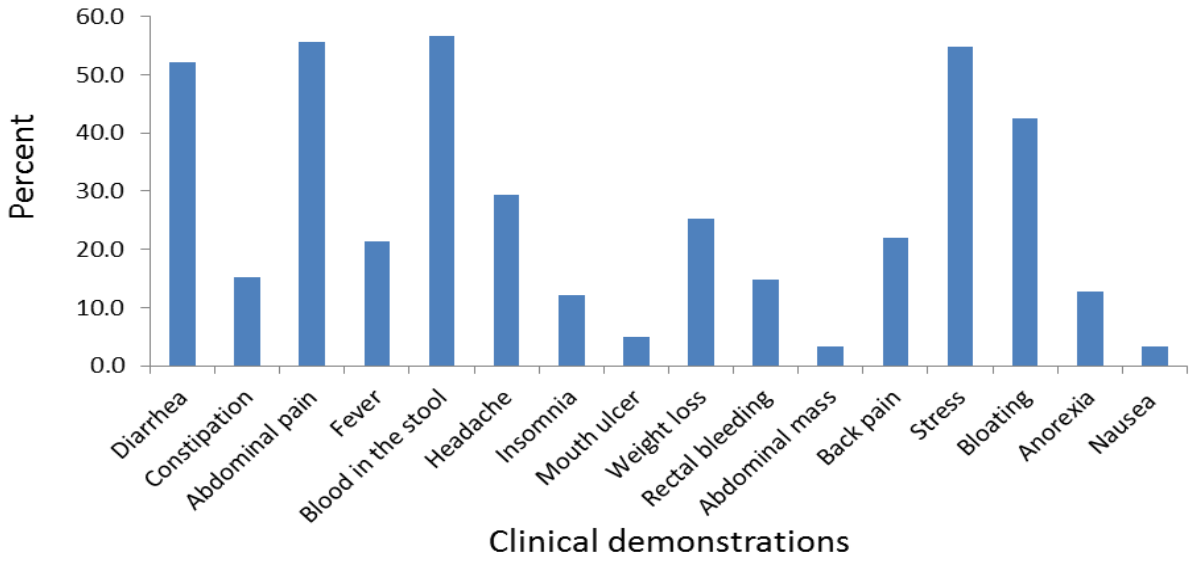

Figure 2. Clinical demonstrations of Ulcerative colitis patients in Khuzestan (2014-2015)

Extra intestinal demonstrations of patients included skin irritation 13.35%, eye involvement 10.7%, and joint pain 37.7% and liver and billiary involvement 12.8% (Figure 3).

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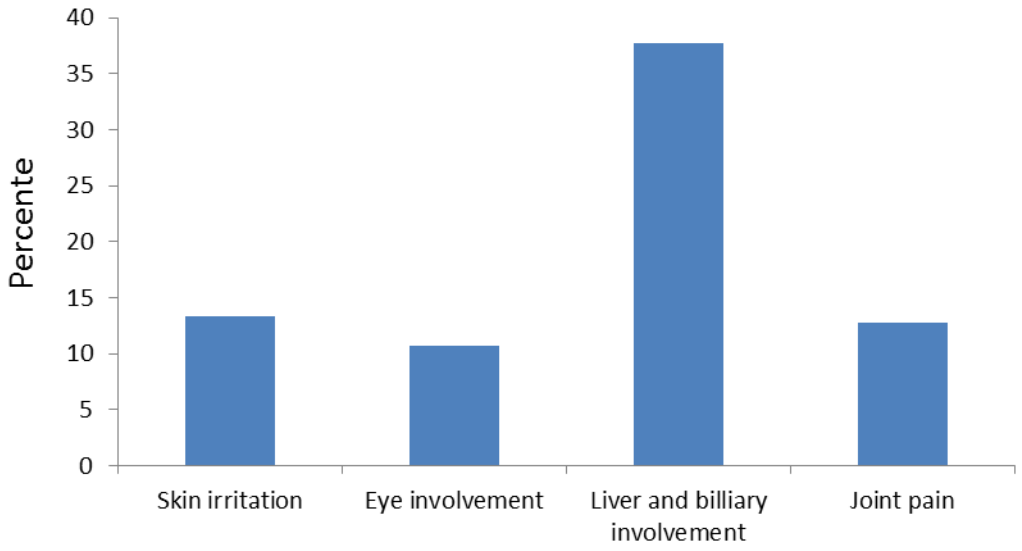

Figure 3. Extra intestinal protests of UC patients in Khuzestan (2014-2015)

Among all patients, 88.95% smoked cigarettes and about 78.75% of patients used treated drinking water. Additionally 5.7% of the patients had a history of keeping pets. Also among 69 female patients with UC, 7 (10.1%) were using birth control pills and from 134 patients with UC, 7 (5.2%) had a family history of UC disease. As for the anatomical distribution of the disease and its phenotype, the patients were divided in different forms. The most common form of disease was pan-colitis with 61 patients (45.5%), and the lowest amount was related to proctitis with 18 patients (13.5%) (Figure 4).

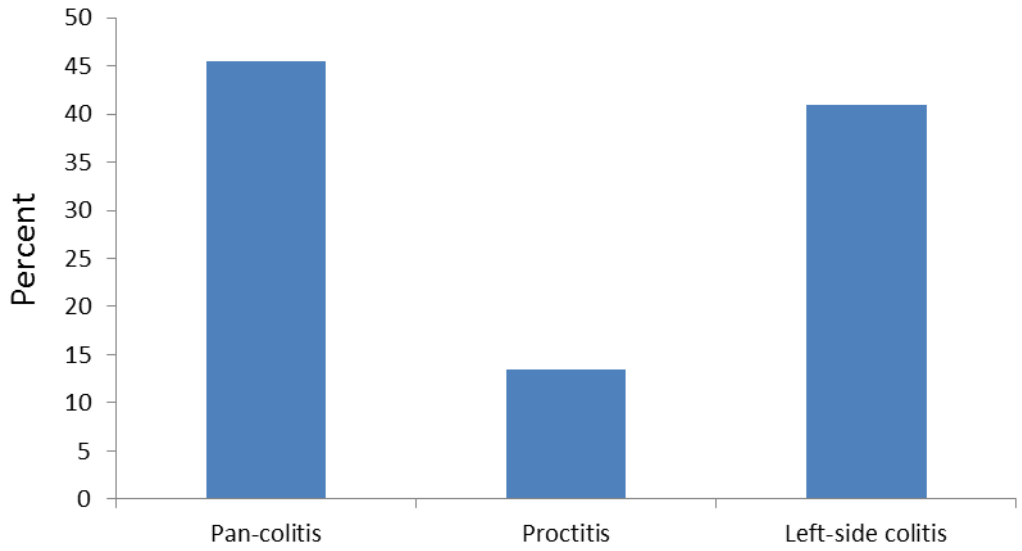

Figure 4. Anatomical distribution of Ulcerative colitis in Khuzestan (2014-2015)

In this study, 55.57% of patients used drugs that inhibit the immune system such as; (azathioprine, Azaram , prednisolone) and 43.13% of patients used anti-inflammatory drugs including; (mesalazine, asacol, sulfasalazine) and about 1.3% of patients were using Monoclonal antibodies, (Infliximab) which is an anti TNF-α drug (Figure 5).

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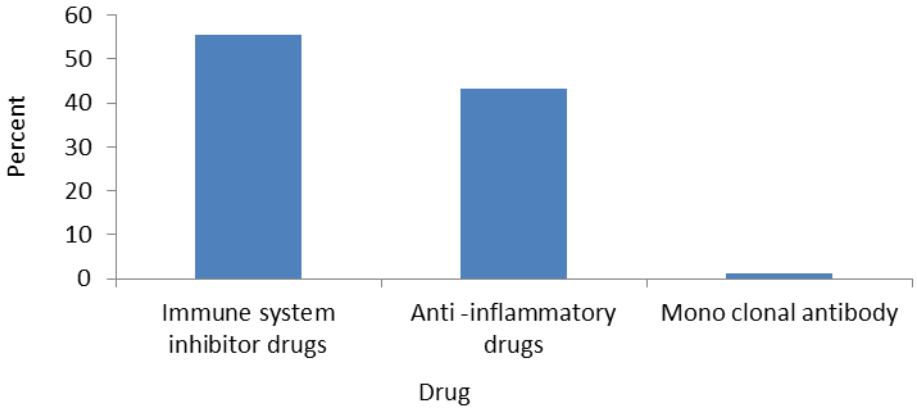

Figure 5. Drug used by Ulcerative colitis patients in Khuzestan (2014-2015)

DISCUSSION

In the first study that was conducted in Iran on inflammatory bowel disease, it was thought that the prevalence of UC is extremely rare, on the other hand due to the lack of a demographic data recording system and low amount of studies conducted in this regard, there is still no accurate and comprehensive information about the amount of outbreak and epidemiological data of these patients, but the results of a series of studies on UC show an increasing rate in Iran and other countries [14, 18, 27]. This study aimed to determine the prevalence rate of the disease and epidemiological profile of UC. In a study conducted by Derakhshan and colleagues, they find that Male / female ratio for UC is 1 to 0.78 and men have been reported as the dominant gender and they reported the average age for developing the disease to be 33.01 [28].

In the study of Masjedizadeh et al, in Ahvaz, women were identified as the dominant gender for UC and the average age for the disease was reported to be 38.6. Also among patients, Fars ethnicity with 79.5% had the highest number of the patients [24]. In the present study the incidence of the disease has been more common in women than men which is consistent with the study of Masjedizadeh et al, but among different ethnicities, Arabs with 53% had the highest amount of people with UC disease and after that Fars ethnicity was in the second place with frequency of 44.05%. 2.2% of the patients were Kurd and eventually Turks formed 0.75% of patients with UC.

Shirazi and colleagues, in Tabriz reported that the ratio of the UC in men is more than women and patients have a good response to treatment. Also left-side Colitis was reported as the most frequent while the dominant form of the disease in the current study was Pan Colitis with 45.5% [26] and in the article of Sood and colleague in the Punjab state of North India, Pan colitis with 46.7% was reported as a dominant form of the disease and 40% of the patients had left-side Colitis [29].

In this study, no significant difference was observed in gender distribution between men and women and a national wide study from Iran in 1990-2012, was reported no significant difference in prevalence between men and women for UC, too [10].

In the study of Vahedi and colleagues from 2004 through 2007 in Tehran, 9.6% of UC patients had a positive history of the disease and appearance of UC was more common in urban than rural populations [30], in our study 7 (5.2%) had a family history of UC disease and 96.3% of patients lived in urban areas. In the study conducted by Taherkhani and colleagues in Imam Khomeini Hospital in Ahvaz, the most common form of the disease is related to the recto sigmoid and the disease in men was more common than women [31]. In the book of Harrison's Internal Medicine, The male to female ratio (1: 1) has been reported to be equal and risk of colitis in smokers is 40% higher than non-smokers. In the present study women were affected more than men and 88.95% of patients were non-smokers. In this study, married individuals with UC were 78.3%

and in the study of Zahedi and colleagues married individuals were also the largest population with about 75.3% and 22.35% of patients had extra intestinal complications which was lower compared to other studies. In the present study, external gastrointestinal demonstrations increased to 74.5% [32]. Aghazadeh et al, have reported an average age of UC of 31.9 years and male to female ratio of 0.8 to 1 [18] and in the present study, the average age at the time of referral has been 37.5 years and the average age at diagnosis has been 32.3 years and the ratio of male to female has been 0.94 to 1. In this study, the prevalence of the disease had increased compared to previous years. Shayeste and his colleagues collected data from various studies and reported that the incidence of UC in Iran has been increasing like other regions and the mild form of the disease is common in Iran and women are the dominant gender [11]. During the study, which was conducted by Massoudi in Hormozgan, the average age of developing UC was reported to be 32.2 ± 16 and man/woman ratio had been 0.8 and increased incidence of UC in Iran was mentioned [33]. Also During studies carried out by Semnani and his colleagues in Golestan Province, predominant population of patients with UC was women. According to their report, 3/83% of the patients were educated and the predominant form of the disease was reported to be left-side colitis with 35.4% [1]. In the present study, individuals with a college degree were 50.2% of patients. In the study of Aghazadeh 67% of patients had a high school diploma or higher education level [18] and in the other study in Trakya University, Turkey, 22 (45%) patients were primary school graduates, 26 (53%) were high school or university graduates [34]. Taghavi and his colleagues in Fars province reported the average age at diagnosis to be 34.64 ± 1.44 and disease has been more common in women than in men and 69.4% of patients had diarrhea and 54.3% of patients had abdominal pain [35]. In the study of Fakheri, 53.2% of UC Patients had dysentery, 16.7% had abdominal pain and 22% had weight loss and left-side colitis was the most common form [36]. In the present study 56.6% of patients had blood in the stool and 55.6% of patients had abdominal pain and 25.3% of patients reported weight loss. Blood in the stool (56.6%), diarrhea (52.1%) and abdominal pain (55.6%) in this study were the most common clinical signs, this corresponds to the study that was done in Kerman and Namazi hospital in southern Iran. In Namazi hospital in southern Iran (Shiraz) 52% of children with UC were boys and 84.6% of them had bloody stools and in the article of Fallahi 60% of children with UC were boys, and 78.3% of patients had bloody stools [32, 37, 38]. Some articles refer to the protective effect of smoking on the UC [39, 40]. In the study of Tezel in Turkey, UC is low in current smokers, and people who have never smoked are at lower risk than ex-smokers [34] In a way that in a study in Tehran's Imam hospital which was done during five years, 11% of smokers and 13% of people who had stopped smoking were UC patients and [17]. In the present study 88.95% of patients did not have a history of smoking. In the studies concluded by Aghazadeh and Ghadir, respectively 84.5% and 87.3% of patients were non-smokers [18, 41]. Mixed results have been reported in various articles about the extent of UC. In a study that was conducted in Hormozgan, 2/36% of patients had rectum involvement, 29% had recto sigmoid and 26% of patients had left-side colitis [33]. In Kerman 8.3% of the disease was limited to the rectum, 23.5% was related to recto sigmoid and 18.8% was related to Pan Colitis and 28.2% was related to recto sigmoid and descending colon [32]. In Shirazi's article in Tabriz 52.5% left colitis and 17.5% Pan Colitis were reported [26], and in the present study 45.5% Pan Colitis, 41% left colitis and 13.5% proctitis were reported and left-side colitis is in the second position with a small margin of about 4.5%. In the study of Naderi, left-side Colitis was reported as the highest form with an abundance of 47% [42]. In our study, skin irritation was reported 13.35%. In the study of Moravvej in Shohada-e Tajrish Hospital, the prevalence of cutaneous manifestations in UC patients was 4.07% [43]. In the present study, other diseases were also reported in patients with UC such as; Asthma, vitiligo, involvement of prostate, kidney and liver failure and gallbladder surgery and skin irritation. In the study of Shirazi and colleagues 6.6% of patients had urinary stones, 9.3% had urological disorders, 16.39% had bile and liver involvement [26]. In the study of Ghanaei, during the 2002-2012 in Guilan, 0.7% of patients used immune suppressive drugs and 0.1% of patients used an anti TNF- α drugs [44]. In the present study, 55.57% of patients used immune suppressive drugs, about 1.3% of patients were using an anti TNF- α drug and 43.13% of patients used anti-inflammatory drugs. 45% of patients with UC in the study of Taherkhani used drugs that inhibit the immune system [31]. In Kalantari's article in Isfahan weight loss is reported in 75% of patients [4]. In our study weight loss was reported 25.3%. From other clinical demonstrations in patients with UC, Fever in 21.3% of patients, stress in 54.7% of patients, anorexia in 12.8% of patients, skin irritation in 13.3% of patients, insomnia 12.2%, joint pain 37.7%, headache 29.3%, oral ulcers 5%, bloating 42.5%, 14.9 rectal bleeding and 3.4% abdominal mass were reported and generally 74.5% of patients had extra intestinal involvement. In the study of Aghazadeh, 31.4% of patients with UC had extra-intestinal complications. In the study of Qadir, 20% of patients had at least one extra-intestinal complication. In the study of Ghanaei 24.5% of UC patients had extra-intestinal manifestations and finally in the study of Yazdanbod in Ardabil University of Medical Sciences, 7.6% had extra-intestinal manifestations which was lower than other studies from Iran [18, 41, 44, 45]. In the study of Zahedi 22.35% of patients had extra-

intestinal complications, also 11.2% weight loss, 4.4% Fever, 20% abdominal pain, 92.2% dysentery were reported [32]. In addition, in the study of Balaie and colleagues in Tehran's Taleghani hospital, women with 53% of the population formed the majority of patients, diarrhea and dysentery were the most common symptoms of UC patients which corresponds with the present study but unlike the present study, left-side Colitis with 40.2% was reported as the most common form of the disease [46]. In the study of Qureshi in karachi, Pakistan, male/female ratio was reported the equal, 72% of the UC patients had mild to moderate disease and left-side Colitis with 60% was reported as the most common form of the disease [47].

CONCLUSION

Finally, in this conducted study it appears that Clinical and Demographical characteristics of UC have almost the same pattern in different parts of Iran and in terms of patients gender, no significant difference was observed and most patients had mild form of UC disease Unlike European countries, advanced form of the disease and cancerous process of UC, does not have a high prevalent in our country. Due to the arising trend of the disease in recent decades and severe complications in these patients, identifying clinical disorders and measuring their frequency in different populations will be a great help in identifying the risk factors for the disease and treatment of the patients.

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