

Research Article

Epidemiologic study of 80 patients with ulcerative colitis referred to Imam Hospital in Ardabil city during 2004-2011

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ABSTRACT

Background: Ulcerative colitis is one of the inflammatory bowel diseases with unknown etiology. Genetic and environmental factors are thought to be effective in this disease. The aim of this study is to assessment of demographic features and clinical symptoms of ulcerative colitis patients referred to Emam hospital in Ardabil city.

Methods: In this retrospective cross-sectional study, 80 cases of ulcerative colitis referred to Emam hospital in Ardabil city were evaluated during 2004-2011. The diagnosis was confirmed based on clinical features, colonoscopy, and pathology and resulting of other causes. Data were collected through direct interview and analyzed by statistical method in SPSS software.

Results: Mean age of patients was 36.4 (SD=18.4). Duration of symptoms onset until diagnosis was 8 months. Male to female ratio was 0.8/1. 38(47.5%) of patients were male and 42 (52.5%) were female. 3 (3.75%) of patients have history of positive UC and 4 (5%) history of appendectomy. According to colonoscopy finding, 1 (1.25%) have rectum involvement, 27 (33.75%) recto sigmoid, 23 (28.75%) left side colon and 4 (5%) have pan colitis.

Conclusion: Results showed that in compare with other places, clinical signs of ulcerative colitis in Ardabil province are different and so doing other epidemiologic studies based on population to determine incidence and prevalence ulcerative colitis in Ardabil province is necessary.

Keywords: Ulcerative colitis, Signs and symptoms, Left side colon, Rectosigmoid

INTRODUCTION

Ulcerative colitis is a recurrent chronic inflammatory disease of the intestines with unknown etiology and is associated with Crohn's disease which is categorized in IBD class. This disease is caused by abnormal local immune system response to intestinal flora or may be to some self-antigens in genetically susceptible individuals. Ulcerative colitis is a non-granulomatous disease limited to the colon and with exception in severe cases is limited to the mucosa and submucosa.¹ It is estimated that the number of people with this disease in Iran is near to 10000 people. The incidence of the disease has increased in recent decades. The incidence of Crohn's disease and ulcerative colitis in different geographic regions vary

from 0.1 to 11 and 0.5 to 24.5 per 1000 person, respectively.² The disease is more common in whites in the United States and there was no sexual preference. The incidence of Colitis in North America is 10-12 per 100000 people, with a peak age incidence of 15-25 years old.³ The incidence of ulcerative colitis is one in a thousand. The overall shape of the data distribution of ulcerative colitis is as a bi-wavelike in which a second peak occurs in the sixth decade of human life and affects women more than men. Geographical distribution of colitis and colonic diseases in the world is the same with high incidence in United States, Canada, United Kingdom and Scandinavia. High incidence has been seen in northern Europe and America than in southern.⁴ The most incidence rate of inflammatory bowel disease is

seen in the second and third decades of life. The incidence of inflammatory bowel disease varies in different geographic areas.⁵ The highest incidence of Crohn's disease and ulcerative colitis occurs in Europe, United Kingdom and North America.⁶⁻⁷ Inflammatory bowel disease with except of Israel Australia and South Africa is rare in other regions.⁸⁻⁹ The highest mortality rate in patients with IBD is during early years of disease and in long-term is because of colon cancer. The prevalence of IBD is high in urban areas than in rural areas and in rich socio-economic classes than poor.¹⁰ Inflammatory bowel diseases are more prevalent in the West and in Iran because of changing foods from traditional form to fast foods, the incidence paradigm is changed. Inflammatory bowel disease was low in the past but now the disease is increasing. The exact cause of the Crohn's disease and ulcerative colitis and their effects on suffered patients has not known. Some people live with this disease for a long time without any signs of disease but in others the disease constantly recurs so that, it may chronically occur at any age. Crohn's disease and ulcerative colitis are not of common gastrointestinal diseases and are not associated with high mortality but, are considered in some countries due to its impact on quality of life, increased mortality, recurrence and the recent increase in their prevalence. Recognition of epidemiological features and risk factors play an important role in disease management. Based on a report from Sweden, the prevalence rate of Crohn's disease during years is increased from 2.4% per 100 thousand children in 1990-1992 to 4.5% per 100 thousand children in 1996-1998. Contrary, incidence of ulcerative colitis is constant.¹¹ In Iran, a report indicated 140 patients with Crohn's disease during years 1989-1999 indicates that however Crohn's disease is rare in Iran but, its incidence is growing up.¹² The reasons for the increase of IBD in Iran can note to the changes in diet and lifestyle, increase in urban population, increase in sanitary level and vaccination as factors affecting the development of IBD. It seems that, modernization of lifestyle such as changes in diet and sanitary in developing countries like Iran has occurred decades later than in Western societies and has caused increase in inflammatory bowel disease in recent years. For this reason, determination the prevalence rate and its risk factors can reveal the severity of the problem and reveal the necessity of prevention, ways of prevention and reduction of incidence.¹³⁻¹⁴ Appendectomy before age 20 and smoking increase the incidence of ulcerative colitis.¹⁵⁻¹⁶ Many references have noted ulcerative colitis as an autoimmune disease.¹⁷ In contrast of colon disease, ulcerative colitis is less occurred in smokers than non-smokers.^{18,19} Due to the lack of comprehensive studies in this filed, present study designed for epidemiologic evaluation of ulcerative colitis and its clinical signs in Ardebil city of Iran.

METHODS

This study was conducted as retrospective cross-sectional method in that 80 patients with ulcerative colitis were

examined. This study was carried out during 2003-2011 on patients referred to Imam Khomeini hospital of Ardebil. Diagnosis was based on clinical signs, fecal examination, colonoscopy and pathology findings and rejection of other similar disorders such as infectious colitis, drugs, ischemic colitis, diverticular colon diseases, colon cancer and single lesion of colon. Data were obtained from patients' document archived in hospital. Data were recorded in the questionnaires which were information about patients' demographical and clinical characteristics including age, marital status, anatomic status, drugs used, history of smoking, history of consumption of OCPs and history of appendectomy. In colonoscopy, criteria indicating colon disorders were graded as follow:

Grade 1: Rectal involvement

Grade 2: Recto-sigmoid involvement

Grade 3: Left colon involvement

Grade 4: Pancolitis

Grade 5: None of the above mentioned factors

Data were analyzed using SPSS and descriptive methods. Data were given as Mean \pm SD.

RESULTS

Of 80 patients with ulcerative colitis (age range 10-85 years old and age average 36.41 ± 18.43), 38 of them were male (47.5%) and 42 of them were female (52.5%). 20 of them were single (25%) and 60 of them got married (75%). 53 of them were urban (66.25%) and 27 of them were rural (33.75%). 22 of them were uneducated (27.5%), 54 of them were sub-diploma (67.5%) and 4 of them were higher educated (5%) (Table 1).

3 patients (3.75%) had family history of ulcerative colitis. 5 patients (6.25%) had history of smoking, 2 patients (2.5%) had history of opium and 4 patients (5%) had history of alcohol. Of 42 women, 22 (52.38%) of them had history of OCP consumption. Among patients, 4 (5%) of them had history of appendectomy. Colonoscopic findings showed that 1 patient (1.25%) had rectal involvement, 27 (33.75%) of them had recto-sigmoid involvement, 23 (28.75%) of them had left colon involvement, 4 (5%) of them had pancolitis and in 25 (31.25%) of them determination of inflammation period has not been made because of incomplete colonoscopy. 31 patients (38.75%) were positive in term of biopsy (Table 2). 39.5% of men and 26.2% of women were in age range 20-30 years old (Figure 1). The maximum incidence was in age range 20-30 years old with 26 patients (32.5%) (Table 3). Based on results of present study, incidence and prevalence rate of ulcerative colitis in Ardebil city calculated 2.72 and 19.1 per 100 thousand people (Table 4).

Table 1: Demographic properties of patients with UC.

Variable	Frequency
Sex	
Man	38 (47.5%)
Woman	42 (52.5%)
Age	
Age range	85-10
Mean	36.42
Mode	26
Median	30
Variance	339.79
Standard deviation	18.43
Marital status	
Single	20 (25%)
Married	60 (75%)
Location	
Urban	53 (66.25%)
Rural	27 (33.75%)
Education	
Uneducated	22 (27.5%)
Sub-diploma	54 (67.5%)
High educated	4 (5%)

Table 2: Clinical findings and risk factors.

History	Frequency (percent)	
Positive	3 (3.75%)	
Smoking	5 (6.25%)	
Opium	2 (2.5%)	
Alcohol	4 (5%)	
OCP	22 (52.38%)	
Appendectomy	4 (5%)	
Colonoscopic findings	Rectal	1 (1.25%)
	Recto-sigmoid	27 (33.75%)
	Left colon	23 (28.75%)
	Pancolitis	4 (5%)
Other	25 (31.25%)	
Biopsy compatible with UC	31 (38.75%)	

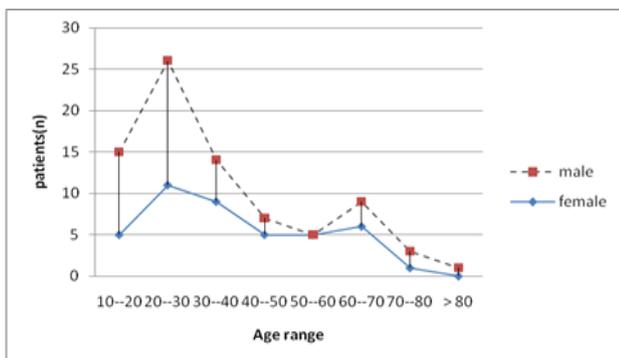


Figure 1: Age distribution of patients in term of sex.

Table 3: Patient's distribution based on age and sex.

Sex Age range	Man		Woman	
	No.	%	No.	%
10-20	10	26.3	5	11.9
20-30	15	39.5	11	26.2
30-40	5	13.2	9	21.4
40-50	2	5.3	5	11.9
50-60	0	0	5	11.9
60-70	3	7.9	6	14.3
70-80	2	5.3	1	2.4
>80	1	2.6	0	0
Total	38	47.5	42	52.5

Table 4: calculation of Ardebil population, prevalence and incidence rate.

Year	Calculated population	Man	Woman	Total	Incidence
2003	398213	7	4	11	2.78
2005	405441	3	10	13	3.2
2007	412669	5	8	13	3.15
2008	419897	5	9	14	3.3
2009	427125	8	5	13	3.04
2010	434353	9	2	11	2.53
2011	441581	1	4	5	1.1
Years	Average	Total men	Total women	Incidence rate	Prevalence rate
8	419897	38	42	2.72	19.1

DISCUSSION

One of the reasons for referring patients to gastroenterology specialists is inflammatory bowel disease in which, ulcerative colitis, is the most common among them. The causes of the disease are unknown, but make long-term complications and have variable gastrointestinal side effects. Due to the lack of recordkeeping centers in IRAN, studies have not been performed about UC. Based on the material contained in the reference books and medical texts it seems that the disease in women is partially more than men, and in most cases is almost identical.¹ In present study also women were (52.5%) and men were (47.5%) with the sexual ratio of 0.8:1. Studies carried out in Tehran and Kerman also showed 55 and 55.3% of women respectively.^{1,9} The age average I present study was 36.4 years old which was a little more than other studies with 33.3 years old.^{1,18,19} Studies carried out in European societies in two age range but our study was carried out in age range 20-30 years old and results showed compatibility with previous studies.¹⁸⁻²⁰ which indicates disease peak in this age group. Based on some studies, smoking has preventive effects on incidence of UC but its reason is not clear.¹⁰ Based on results of present study, only in 6.25% of patients, the history of smoking was seen, which is in line with other studies.^{13,18} and observed that it has protective effect in UC. According to the previous studies, consumption of OCP has reverses effect in UC. In present

study, use of OCPs (52.4%) was more than other studies with 6 and 19.1% and because of absence of control group, we couldn't conclude about results statistically significance.^{13,18} Recent studies have described reverses significant difference between appendectomy and UC.¹⁹ In previous studies, the history of appendectomy was 1.8 and 5.9% respectively which was incompatible with our results of 5%.^{18,21} The protective role of appendectomy was not the aims of present study. Various studies in Asian and western countries have reported different extent of the disease.²² In a research in Korea, result showed 34% proctitis patients, 35.1% left colon colitis and 30.9% diffused colitis.²³ In Arak, rectal 26.8%, recto-sigmoid 29.9% and pancolitis observed 11.3%.¹¹ In Kerman, rectal 8.3%, recto-sigmoid (23.5%) and pancolitis observed 18.8%.¹⁸ In present study, rectal 1.25%, recto-sigmoid 33.75% and pancolitis observed 5% which was relative compatible with other studies. In our research, Recto-sigmoid and left colon was the most common site of involvement (33.75 and 28.75% respectively) and pancolitis observed 5% of patients. Ebrahimi et al., 2001 showed rectal and recto sigmoid as high prevalence with 70 and 14% respectively then showed pancolitis 8% prevalence.¹⁸ In other studies, it has been shown that 40-50% of patients have rectal and recto-sigmoid involvement and 30-40% have upper tract involvement and 20% is related to large intestine.^{18,19} It seems that, the results obtained from present study is according to the world statistics, however, severe pancolitis in present study was lesser than other studies. The incidence and prevalence of UC in present study was 2.72% and 19.1 per 100000 people. The average of prevalence in men and women was 18.1 and 20 per 100000 people respectively. The prevalence and incidence rates in present study was not according to other studies in Sweden (incidence 2.1%), America (prevalence 35-100%), Colombia (prevalence 29%), Amman (prevalence 10.4%), Barbados (incidence 1.85), California (incidence 3.2) per 100000 people.^{11,22,24-27} Study carried out in Colombia showed prevalence 30.4 for women and 12 for men which was in contrast of our study.²⁵ can state that, IBD is a most common in West of the world and its incidence has increased since 1950.²⁸ Jess et al., 2007 worked on manifestations, clinical course and prognosis of IBD in 3 different groups and concluded that the patients' suffered from IBD and Crohn's disease is increased since 1962-2005 and the time spent from incidence till diagnosis has been decreased. The prevalence of proctitis was more in patients with UC as well as the operation was decreased and mortality was increased.²⁹ Increase in prevalence and incidence rates of UC is increased in Asian countries and according to the studies from 1990 to 2006 it has been shown that of 73 patients with age average of 40.6 and average of disease course 72 months, 38.4% proctitis UC, 26% left colon UC and 35.6% extended UC was observed.²⁰ Chronic UC has increasingly violent course in developing countries, in Amman, 372 UC patients has been recorded from 1994 to 2007. Dysentery and abdominal pain were the most prevalent signs (84%). Age average of patients was 31.8

and in 2.3% of patients, the diagnosis was made 1 year post incidence.²² The age average in present study was 36.4 years old which is consistent with that study. Karoui et al., 2007 worked on 70 patients with UC from 1984 to 2004 and showed that the primary site of involvement was rectum and recto-sigmoid with 25 and 45 cases, respectively in which by tracking of patients for 49.4 month, the 10% of disease was extent to proximal areas in 7 patients. Most cases of recurrence in patients were with colon condition.³⁰ The findings show that smoking reduces disease symptoms and has a protective role against developing ulcerative colitis which is confirmed in our study. Age, sex, primary site of involvement, treatment and diagnosis of distal UC were not associated with increased risk of colon. In present study, recto-sigmoid was more incidence rate which is in contrast of Jess et al., 2007.²⁹ Lakatos 2006 indicated that smoking is an important environmental factor in patients with IBD and has different effects on patients with UC and Crohn's disease.²⁸ By analyzing of previous results it shown that smoking has positive protective effect on UC and may improve healing after incidence and reduces the need to colonoscopy whereas, smoking increased the rate of Crohn's disease and severe it and increased need to immunosuppressor steroid. Stop smoking aggravates ulcerative colitis and is improved Crohn's disease. The incidence risk of IBD is at any age but UC is seen mostly in adults. In present study, patients' age range was 36.42 years old which is compatible with other studies.²⁴⁻²⁶ Aghazadeh et al., 2005 showed that age range among 457 patients with UC is 31.9 years old with men to women ratio 0.8:1, 84.5% non-smokers and 51.9% of UC were proctosigmoid.² UC is more common in urban than rural areas because of easier access to health care, jobs, the environment and nutrition which is consistent with our results (66.25% VS 33.75%). UC was more common in patients with low educations (67.5%) which indicates close relationship between public awareness and UC (P = 0.001).

CONCLUSION

Based on present study, UC in Iran is close in results of previous studies carried out worldwide; however, there are some differences in some factors and needs to accurate treatment and medicine administration. We conclude that, colon involvement in UC is varying in different geographic regions thus we recommend that it still needs to other studies with different and accurate methods with designated criteria in research centers to achieve accurate statistic about colon involvement in UC for better detection and treatment.

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REFERENCES

- Zahedi M, Darvish S, Hayatbakhsh M, Dalir Z. Demographic characterised and clinical results of Ulcerative colitis in Kerman city 2005-7. *J Kerman Univ Med Sci.* 2008;16(1):45-53.
- Aghazadeh R, Zali MR, Bahari A, Amin K, Ghahghie F, Firouzi F. Inflammatory bowel diseases in Iran: a review of 457 cases. *J Gastroenterol Hepatol.* 2005 Sep;20:1691-5.
- Kornbluth, Asher, David B. Sachar. Ulcerative colitis practice guidelines in adults (update): American college of gastroenterology, practice parameters committee. *Am J Gastroenterol.* 2004 Jul;99(7):1371-85.
- Hanauer SB, Hanauer, Stephen B. Inflammatory bowel disease. *N Engl J Med.* 1996;334(13):841-8.
- Podolsky DK. Inflammatory bowel disease. *N Engl J Med.* 2002;347(6):417-29.
- Shivananda S, Lennard-Jones J, Logan R, Fear N, Price A, Carpenter L, et al. Incidence of inflammatory bowel disease across Europe: is there a difference between north and south? Results of the European collaborative study on inflammatory bowel disease (EC-IBD). *Gut.* 1996;39(5):690-7.
- Sonnenberg A, McCarty DJ, Jacobsen SJ. Geographic variation of inflammatory bowel disease within the United States. *Gastroenterology.* 1991 Jan;100(1):143-9.
- Hanauer, Stephen B, William Sandborn. Management of Crohn's disease in adults. *Am J Gastroenterol.* 2001;96(3):635-43.
- Fauci A, Braunwald E, Kasper D, Hauser S, Longo D, Jameson J, et al. Inflammatory bowel disease. In: Fauci A, Braunwald E, Kasper D, Hauser S, Longo D, Jameson J, et al., eds. *Harrison's Internal Medicine.* 17th ed. New York: McGraw-Hill Medical; 2008: 1937.
- Darakhshan F, Khojini E, Balaii H, Naderi N, Firouzi F, Farnood A, et al. Epidemiology of inflammatory bowel disease in Iran: a review of 803 cases. *Gastroenterol Hepatol Bed Bench.* 2008 May;1(1):19-24.
- Askling J, Grahnquist L, Ekbom A, Finkel Y. Incidence of pediatric Crohn's disease in Stockholm, Sweden. *Lancet.* 1999 Oct;354(2):1179-80.
- Malekzadeh R, Varshasaz S, Vahid AA. Crohn's disease: a review of 140 cases from Iran. *Iranian J Med Sci (IJMS).* 2000 Dec;25(3-4):138-43.
- Bahari A, Firouzi F, Zali MR, Aghazadeh R, Maleki B, Ardalan A. Ulcerative colitis, Crohn's disease, Risk factor. *Pejouhandeh Quarterly Res J.* 2004 Nov;7(8):495-500.
- Fani A. A study on the pattern of prevalence of inflammatory bowel disease and its clinical presentation in Arak. *Rahavard Danesh J Arak Univ Med Sci.* 2002 Sep;18(5):28-3.
- Baumgart DC, Sandborn WJ. Inflammatory bowel disease: clinical aspects and established and evolving therapies. *Lancet.* 2007;369(9573):1641-57.
- Calkins BM. A meta-analysis of the role of smoking in inflammatory bowel disease. *Dig Dis Sci.* 1989;34(12):1841-54.
- Lakatos PL, Szamosi T, Lakatos L. Smoking in inflammatory bowel diseases: good, bad or ugly? *World J Gastroenterol.* 2007;13(46):6134-9.
- Ebrahimi Dariani N, Mohammadi HR, Airamloo M. Clinical and epidemiological characteristics in ulcerative colitis patients referred to Imam hospital, 1995-2000. *J Tehran Faculty Med.* 2001 Oct;4(59):85-90.
- Mirmajlesi H, Frouzandeh B, Ghadimi R. Ulcerative colitis in Iran. *J Med Iran.* 1999;10(1):46-54.
- Gheorghe C, Pascu O, Gheorghe L, Lacob R, Dumitru E, Tantau M, et al. Epidemiology of inflammatory bowel disease in adults who refer to gastroenterology care in Romania: a multi-center study. *Eur J Gastroenterol Hepatol.* 2004;16(11):1153-9.
- Karlinger K, Gyorke T, Mako E, Mester A, Tarjan Z. The epidemiology and the pathogenesis of inflammatory bowel disease. *Eur J Radiol.* 2000 Oct;35(3):124-67.
- Abramson O, Durant M, Mow W, Finley A, Kodali P, Wong A, et al. Incidence, prevalence, and time trends of pediatric inflammatory bowel disease in Northern California, 1996 to 2006. *J Pediatr.* 2010 Aug;157(2):233-9.
- Yang SK, Hong WS, Min YI, Kim HY, Yoo JY, Rhee PL, et al. Incidence and prevalence of ulcerative colitis in the Songpa-Kangdong district, Seoul, Korea, 1986-1997. *J Gastroenterol Hepatol.* 2000;15(9):1037-42.
- Radhakrishnan S, Zubaidi G, Daniel M, Sachdev GK, Mohan AN. Ulcerative colitis in Oman. A prospective study of the incidence and disease pattern from 1987 to 1994. *Digestion.* 1997;58(3):266-70.
- Barreto I, Carmona R, Díaz F, Jiménez I. Prevalence and demographic characteristics of inflammatory bowel disease in Cartagena, Colombia. *Rev Col Gastroenterol.* 2010 Jun;25(2):106-9.
- Edwards CN, Griffith SG, Hennis AJ, Hambleton IR. Inflammatory bowel disease: incidence, prevalence, and disease characteristics in Barbados, West Indies. *Inflamm Bowel Dis.* 2008 Oct;14(10):1419-24.
- Al-Shamali MA, Kalaoui M, Patty I, Hasan F, Khajah A, Al-nakib B. Ulcerative colitis in Kuwait: a review of 90 cases. *Digestion.* 2003;67:218-24.

28. Lakatos PL. Recent trends in the epidemiology of inflammatory bowel diseases: up or down? *World J Gastroenterol.* 2006 May;12:6102-8.
29. Jess T, Riis L, Vind I, Winther KV, Borg S, Binder V, et al. Changes in clinical characteristics, course, and prognosis of inflammatory bowel disease during the last 5 decades: a population-based study from Copenhagen, Denmark. *Inflamm Bowel Dis.* 2007 Apr;13(4):481-9.
30. Karoui S, Kallel L, Dahmani Z, Boubaker J, Filali A. Frequency of proximal colonic extension of distal ulcerative colitis. *Tunis Med.* 2007 Aug;85(8):669-72.

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