Original Article

Estimation of Ulcerative Colitis Incidence in Hormozgan Province, Southern Iran

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ABSTRACT

Background : The incidence of inflammatory bowel disease (IBD) may have changed over time. The incidence and prevalence of IBD appears to be lower in Asia and South America. Although once believed to be infrequent in Iran, there has been a rising trend in IBD over the past two decades. However, in Iran there is no data about the incidence and prevalence of IBD.

Materials and Methods : Demographic and clinical features, extension of disease in new patients with UC that referred to Shahid Mohammadi Hospital Gastroenterology Clinic and one private clinic, the only gastroenterology centers in Hormozgan Province, were assessed over a two-year period (2004-2006).

Results : There were 37 patients seen in 2004-2005 and 42 patients in 2005-2006, who were diagnosed with UC. The estimated incidence of UC was at least 3.25:100,000. The mean±SD age at diagnosis was 32.8±16 years, with a male to female ratio of 0.8. Most patients presented with rectal bleeding. The rectum was affected in 36.2% of cases and rectosigmoid colitis was reported in 29%, left-sided colitis in 26%, and pancolitis in 8.7% of cases.

Conclusion : Geographic variation of the incidence of IBD within a country has also been observed and the incidence of IBD may have changed over time. The true epidemiologic profile of IBD in Iran is unknown, but with the continuing rise in IBD, more attention should be directed for evaluation of this disease.

Keywords : Ulcerative colitis; Inflammatory bowel disease; Epidemiology; Iran

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INTRODUCTION :

The incidence and prevalence of inflammatory bowel disease (IBD) differ considerably depending on the geographical region that is studied. The incidence of ulcerative colitis (UC) is 1.2 to 20.3 cases per 100,000 persons per year and its prevalence is 7.6 to 246.0 cases per 100,000 per year(1-4).Epidemiological studies from Western countries have reported higher incidence rates of IBD in the northern part of the world and among Caucasians, rather than in nonwhite populations(1,5).

Until recently, only limited data was available on the epidemiology of IBD in Iran, however reports have noted an increase (6-11). Most studies in Iran have investigated IBD retrospectively over short time periods, using small populations. There are no true population-based registries in Iran that systematically collect information on IBD and hospital-based studies have been used to analyze clinical characteristics. It is well known that hospital-based studies may include only select patients, and therefore underestimate true

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incidence rates (1). In this study, we aim to obtain approximate information on the epidemiology, in particular the incidence of UC, in Hormozgon Province, Iran.

MATERIALS AND METHODS :

We conducted a retrospective, descriptive, collaborative epidemiologic study between 2004 and 2006 in Hormozgan, a province in southern Iran (Figure 1). All patients were diagnosed according to a standard protocol for case ascertainment and definition of IBD, in Hormozgan a province in south of Iran and north of Persian Gulf (Fig. 1). From 156 UC patient only 79 new patients in 2004-2006 with UC for estimation of ulcerative colitis incidence were studied. Demographic and clinical features, extension of disease of 37 new patient in 2004-2005 and 42 new patients in 2005-2006 with UC that referred to Shahid Mohammadi hospital gastroenterology clinic and one private clinic that are the only gastroenterology centers with ability to perform colonoscopy in Hormozgan province assessed by only one gastroenterologist in two years period, 2004 -2006. We don't have reliable data from other patient that were diagnosed in other province gastroenterology center. The exact course of physicians' visits of patient was asked through face-to-face interview. IBD diagnosis was based on the typical clinical course of the disease (patients with histories of chronic diarrhea or presence of blood or pus in the stool) and typical endoscopic examination, with histopathologic findings compatible with diagnosis of UC. UC was categorized by the extent of disease, which was defined macroscopically by the proximal limit of inflammation seen upon colonoscopy and was divided into the following four categories:

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

Clinical notes of index cases were reviewed to ensure the accurate diagnosis of IBD. Cases were only included if they met diagnostic criteria, with the diagnosis certain at follow-up.

Patients with undifferentiated colitis were excluded and patients with the diagnosis of Crohn's disease (CD) were not included due to their low numbers. References from articles that fulfilled the selection criteria were also reviewed. The endpoints considered in the review were IBD incidence rate, its geographical differences, and evolution over time.

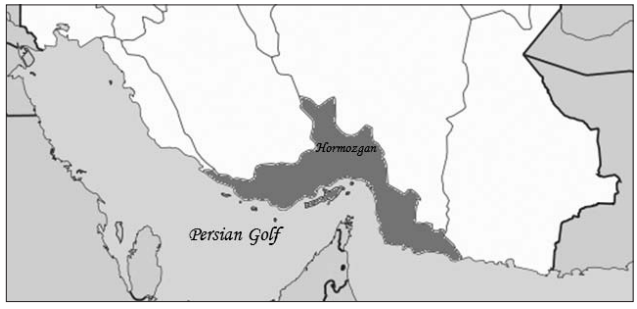

Figure 1: Map of Hormozgan Province, Iran.

RESULTS :

From 156 UC patient only 79 new patients in 2004-2006 with UC for estimation of ulcerative colitis incidence were studied. There were 37 patients included in the study during 2004-2005 and 42 patients during 2005-2006 who were diagnosed with UC. The male to female ratio was 0.8. The mean±SD age at diagnosis was 32.8±16 years. The mean lag time between the onset of symptoms and diagnosis was 9 months. Most patients presented with rectal bleeding. The most reported complaints were: proctitis (36.2%); proctosigmoiditis (29%), left-sided colitis (26%); and pancolitis (8.7%). Extraintestinal manifestations were diagnosed in 8% of patients. Among extraintestinal manifestations of ulcerative colitis, arthritis had the highest frequency that found in patients. Surgery was performed in one patient .The estimated incidence of UC (2004-2006) was at least 3.25:100,000.

DISCUSSION:

The incidence of IBD differs depending on the geographical region studied. IBD was believed to be infrequent in Iran, but both UC and CD seem to have experienced an important change in terms of incidence over the past decades(3,7,10,12-15). IBD is a heterogeneous group of diseases that are not always easy to diagnose, even more difficult to classify, and diagnostic criteria are not always uniform. Sufficient population-based studies are not abundant, whereas hospital-based studies are common. Thus, comparisons among different geographical areas or populations are not always reliable. Although several authors have demonstrated an increase in IBD in Iran over time, however no data exists regarding the incidence

and prevalence of IBD in Iran (16-17).
In our study, the mean incidence of UC in Hormozgan Province was 3.25 cases per 100,000 per year (Figure 2) and there is no previous data about epidemiology of UC in Hormozgan province for comparison. Limited access to health care, differences in diagnostic practices, limited availability of diagnostic facilities, a lack of physician and patient awareness, acute and chronic infections, in addition to the quality of studies and accurate population data might have affected the quality of epidemiologic data. This may have caused either over- or underestimation of the actual incidence of IBD. Thus, incidence data may be less reliable, making standardization and comparison of data impossible. Despite these limitations, it is possible to obtain some valuable information from such studies. At least, an approximation regarding the epidemiology of UC is possible; however the limitation of our study is that it has used clinic- and hospital-based data (1, 2). Although the true epidemiologic profile of IBD in Iran is still unknown, it is not as rare as previously thought. It seems the gradual adoption of a Western lifestyle may be associated with the continuing rise in IBD (7). Some studies have shown differences in IBD incidence between different regions in Iran (9). A report of 108 patients during a 3 year study period in a population of about 1.5 million from Golestan Province, northern Iran is noteworthy(6). A case series from Tehran, Iran has suggested very low incidence rates. The authors reported only a total of 448 IBD patients were referred to or diagnosed in two university hospitals and two private gastrointestinal clinics between 1992 and 2002(7). Most studies in Iran have retrospectively investigated IBD over a short period of time and in small populations. Recent trends however have also indicated a change in the epidemiology in Iran, since those previously low incidence areas have now reported a progressive rise in UC. Some of these changes may represent differences in diagnostic practices and increased disease awareness (2, 6-8, 16).
The incidence rate of UC varies greatly, between 0.5-24.5/100,000 inhabitants worldwide. Differences in geographic distribution, particularly changes in incidence over time within one area may provide insight into possible etiological factors (2, 4, 18, 19, 20). Recent data from Southern and Eastern Europe in addition to Asia in the mid-1990s has reported a rise in incidence values in some areas, comparable to rates that have been reported from Northern Europe or North America. The gap between areas with conventionally high and low incidence rates is diminishing. The rise in incidence began in the early 1990s, parallel with changes in governing systems and the social environment (2,14,16,19,21).
The incidence and prevalence rates of IBD in Asian countries are still low compared with those of Western countries, but have been increasing rapidly during the past two decades, particularly in East Asia. In most undeveloped countries, there are few epidemiological studies and, until now, the few published studies have been retrospective studies that were limited to very specific areas for a centralized hospital and often retrospectively. Data from Japan and Korea have suggested that westernization of lifestyles, including dietary habits as well as environmental changes caused by industrialization, in addition to improved sanitation and urbanization are probably responsible for the change in incidence. There are substantial variances

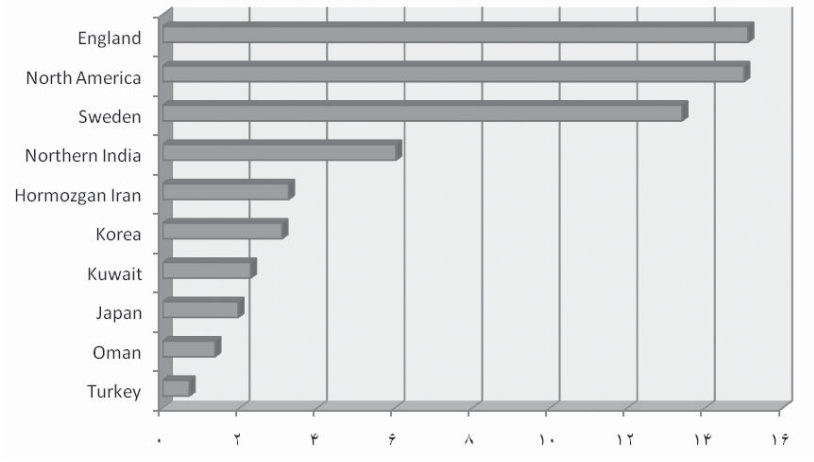

Figure 2: The annual incidence of ulcerative colitis per 100,000.

in the incidence and prevalence rates of IBD among different races or ethnic groups in Asia, with the highest rates in India, Japan, and some Arab countries. Studies from England have indicated that the incidence of UC among migrant South Asians is higher than seen in Europeans, which suggests that South Asians are genetically predisposed to UC. Although many studies have claimed that the course of UC is milder among Asians than among Western populations, it is difficult to draw any firm conclusion due to the lack of sufficient data(1,2,16 ,18,22-24).

In Asia, the data is scarce, inconsistent and of low methodological quality, thus it is difficult to make comparisons. There is only little study in Hong Kong, Japan, Korea, India, China, and Kuwait and in Oman, and most suggest lower incidence rates of IBDs in these areas than Western countries(1,2,18,23-30).

In the current study, most patients presented with rectal bleeding and proctitis. The characteristics of IBD in our geographical area do not differ substantially from those in other regions of Iran(6,7). The clinical phenotypes and complication rates of Asian IBD resemble the Caucasian population in general, however differences such as lower surgical rates, higher prevalence in males, and low frequency of primary sclerosing cholangitis among IBD patients in East and Southeast Asia exist(22,31,32). After determining the clinical pattern of IBD, we found a slight predominance in females which has been seen in some previous studies, but not in others(6,8). Although comparison of disease extent between different populations is difficult due to differences in diagnostic modality, definition of disease extent, and completeness of case ascertainment among different studies, there is no definite evidence that disease extent is different between Asian and Western countries(1,3,6,8).

In conclusion, despite the globalization of IBD there remains a difference in disease prevalence between developed and developing countries, however the gap is not as wide as previously projected. The observed increase in IBD in Asia during the past decade is actual, and if same trend is sustained, the prevalence rates may catch up with the West. India probably heading the list of UC incidence in Asian and Hormozgan province in south of Iran maybe second. A greater awareness and better availability of health care and/or improved study methods may have contributed to this increase, however these factors alone do not explain the surge in the number of patients. Additional studies and the initiation of a disease registry in our country are needed to better define the burden of illness and epidemiology of IBD.

REFERENCES

1. Suk-Kyun Y, Edward V, Loftus J, William JS. Epidemiology of Inflammatory Bowel Disease in Asia. *Inflamm Bowel Dis* 2001;7:260–70.
2. Lakatos PL. Recent trends in the epidemiology of inflammatory bowel diseases: Up or down? *World J Gastroenterol* 2006;14:6102-8.
3. Pajares JM, Gisbert JP. Epidemiology of inflammatory bowel disease in Spain. A systematic review. *Rev Esp Enferm Dig* 2001;93:481.
4. Danese S, Fiocchi C. Ulcerative colitis. *N Engl J Med* 2011;365:1713-25.
5. Whelan G. Epidemiology of inflammatory bowel disease. *Med Clin North Am* 1990;74:1–12.
6. Semnani SH, Azarhoush R, Abdolahi N, Besharat S, Roshandel GH,Jabbari A, et al. Inflammatory bowel disease (IBD) in northeast of Iran. *Journal of Clinical and Diagnostic Research* 2008;2:731-4.
7. Aghazadeh R, Zali MR, Bahari A, Amin K, Ghahghaie F, Firouzi F. Inflammatory bowel disease in Iran: a review of 457 cases. *J Gastroenterol Hepatol* 2005;20:1691-5.
8. Yazdanbod A, Farzaneh E, Pourfarzi F, Azami A, Mostafazadeh B, Adiban V, et al. Epidemiologic profile and clinical characteristics of ulcerative colitis in northwest of Iran: a 10-year review. *Trop Gastroenterol* 2010;31:308–11.
9. Vahedi H, Merat S, Momtahen S, Olfati G, Kazzazi AS, Tabrizian T, et al. Epidemiologic Characteristics of 500 Patients with Inflammatory.Bowel Disease in Iran Studied from 2004 through 2007.*Arch Iran Med* 2009;12:454 – 60.
10. Fallahi GH, Moazzami K, Tabatabaeiyan M, Zamani MM, Asgar-Shirazi M, Najafi M, et al. Clinical characteristics of Iranian pediatric patients with inflammatory bowel disease. *Acta Gastroenterol Belg* 2009;72:230-4.
11. Mir-Madjlessi SH, Forouzandeh B, Ghadimi R. Ulcerative colitis in Iran: a review of 112 cases. *Am J Gastroenterol* 1985;80:862-6.
12. Nikpour S, Ali Asgari A. Colonoscopic evaluation of minimal rectal bleeding in average-risk patients for colorectal cancer.*World J Gastroenterol* 2008;14:6536-40.
13. Sotoudehmanesh R, Ainechi S, Asgari AA, Kolahdoozan S. Endoscopic lesions in low-to average-risk patients with minimal bright red bleeding from midline anal fissures. How much should we go in? *Tech Coloproctol* 2007;11:340-2.
14. Wilson J, Hair C, Knight R, Catto-Smith A, Bell S, Kamm M,et al. High incidence of inflammatory bowel disease in

Australia: a prospective population-based Australian incidence study. *Inflamm Bowel Dis* 2010;16:1550-6.
15. Wang YF, Zhang H, Ouyang Q. Clinical manifestations of inflammatory bowel disease: East and West differences. *J Dig Dis* 2007;8:121-7.
16. Gismera CS, Aladrén BS.Inflammatory bowel diseases: a disease (s) of modern times? Is incidence still increasing? *World J Gastroenterol* 2008;14:5491-8.
17. Saro GC, Riestra MS, Milla CA, Sánchez FR, Lacort FM, Argüelles Fernández G, et al.Incidence and prevalence of inflammatory bowel disease. Austrian study in 5 areas (EII-CEA). Spain.*An Med Interna* 2003;20:3-9.
18. Sood A, Midha V.Epidemiology of inflammatory bowel disease in Asia. *Indian J Gastroenterol* 2007;26:285-9.
19. Goh K, Xiao SD. Inflammatory bowel disease: a survey of the epidemiology in Asia. *J Dig Dis* 2009;10:1-6.
20. Colombel JF, Vernier-Massouille G, Cortot A, Gower-Rousseau C, Salomez JL. Epidemiology and risk factors of inflammatory bowel diseases. Bull Acad Natl Med 2007; 191:1105-18.
21. Bernstein CN. Epidemiologic clues to inflammatory bowel disease. *Curr Gastroenterol Rep* 2010;12:495-501.
22. Thia KT, Loftus EV Jr, Sandborn WJ, Yang SK. An Update on the Epidemiology of Inflammatory Bowel Disease in Asia. *Am J Gastroenterol* 2008; 103:3167–82.
23. Yang SK, Yun S, Kim JH, Park JY, Kim HY, Kim YH, et al. Epidemiology of inflammatory bowel disease in the Songpa-Kangdong district, Seoul, Korea, 1986-2005: a KASID study. *Inflamm Bowel Dis* 2008;14:542-9.
24. Ahuja V, Tandon RK. Inflammatory bowel disease in the Asia-Pacific area: a comparison with developed countries and regional differences. *J Dig Dis* 2010;11:134-47.
25. Leong RW, Lau JY, Sung JJ. The epidemiology and phenotype of Crohn's disease in the Chinese population. *Inflamm Bowel Dis* 2004;10:646-51.
26. Sood A, Midha V, Sood N, Bhatia AS, Avasthi G. Incidence and prevalence of ulcerative colitis in Punjab, North India. *Gut* 2003;52:1587-90.
27. Al-Nakib B, Radhakrishnan S, Jacob GS, Al-Liddawi H, Al-Ruwaih A. Inflammatory bowel disease in Kuwait. *Am J Gastroenterol* 1984;79:191–4.
28. 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;58:266-70.
29. Morita N, Toki S, Hirohashi T, Minoda T, Ogawa K, Kono S, et al. Incidence and prevalence of inflammatory bowel disease in Japan: nationwide epidemiological survey during the year 1991. *J Gastroenterol* 1995;30:1-4.
30. 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;15:1037-4.
31. Malaty HM, Hou JK, Thirumurthi S. Epidemiology of inflammatory bowel disease among an indigent multi-ethnic population in the United States. *Clin Exp Gastroenterol* 2010; 3:165-70.
32. Walker DG, Williams HR, Kane SP, Mawdsley JE, Arnold J, McNeil I, et al. Differences in inflammatory bowel disease phenotype between South Asians and Northern Europeans living in North West London, UK. *Am J Gastroenterol* 2011;106:1281-9.