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Lecture

Epidemiology of Inflammatory Bowel Diseases

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SUMMARY

Data from epidemiological studies regarding the incidence rates of ulcerative colitis and Crohn's disease have shown that both diseases are more common in the developed countries of North America, Scandinavia and Europe and less common in Asia, Africa and South America. Meanwhile, although the incidence of UC has remained relatively stable over the years, the incidence of CD has increased considerably since its first description in 1932. IBD typically affects young people, but may have a bimodal incidence with a second peak in later life. Men are slightly more likely to be affected with UC and women with CD. Mortality rates have declined in recent years and most individuals are now expected to live a normal life.

INTRODUCTION

The term inflammatory bowel disease (IBD) comprises primarily two disorders: ulcerative colitis (UC) and Crohn's disease (CD). Although UC and CD are generally accepted as clinically distinct conditions with distinguishing anatomical and histological findings it has to be emphasized that about 10% of patients have indeterminate features between UC and CD that cannot be clearly categorized.

Epidemiological data on the distribution of UC and CD in diverse populations over time is extremely helpful in estimating the exact burden posed by these disorders, in determining potential etiologic factors and in measuring the impact of new therapeutic options for treatment and maintenance.

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INCIDENCE

Incidence is the number of new cases of a disease that develop in a specific time interval, commonly 1 year. Data on IBD incidence can provide clues to etiology and the possible effect of environmental factors on disease progression.

Incidence rates for ulcerative colitis tend to be generally higher in North America, Great Britain and the Scandinavian countries (table 1). In these countries the incidence was seen to increase between the 1960s and 1980s, while now it is thought to have reached a plateau.[1-8] Rates in central and southern Europe are somewhat lower (table 1). In Asia, Africa and Latin America the reported incidence for ulcerative colitis was low; however in recent years it appears to be increasing.[1-8]

As regards Crohn's disease, it appears more common in North America, Great Britain and Scandinavia, with lower rates reported in southern Europe, Asia and Africa (table 1).[1-8] In recent years a remarkable rise in disease incidence has been reported and now the incidence of Crohn's disease has exceeded that of ulcerative colitis in many parts of the world, including some parts of North America and Europe (Manitoba – Canada,[9] northern France[10]).

As regards the Greek population, studies from Ioannina and Crete have reported an incidence rate for UC of 4-11.2 per 100 000 inhabitants and an incidence rate for CD of 0.3-3 per 100 000 persons[11-13]. It is of note that in Crete the incidence of both UC and CD appears to be much higher than in the other parts of Greece, a trend that has to be monitored carefully during the years to come.

PREVALENCE

Prevalence is the number of individuals with a specific condition at a given time. Prevalence figures are very

Table 1. Incidence of ulcerative colitis and Crohn's disease from selected registries since 1980

North America	Time period	UC incidence*	CD incidence
Loftus et al[1]	1984-1993	8.3	6.9
Blanchard et al[2]	1987-1996	15.6	15.6
Scandinavia			
Moum et al[3]	1990-1993	13.6	5.8
United Kingdom			
Rubin et al[4]	1985-1994	13.9	8.3
Southern/Central Europe			
Tragnone et al[5]	1989-1992	5.2	2.3
Asia			
Morita et al[6]	1991	1.9	0.5
Africa			
Wright et al[7]	1980-1984	1.9	1.8

**cases per 100 000 persons*

important since they provide information regarding the healthcare burden of a disease, within a population. The highest reported prevalence rates of UC is from Olmsted County, Minnesota (USA), [1] with 229 cases per 100 000 persons, while the highest reported prevalence rates of CD are from Manitoba Canada with 198 cases per 100 000 persons.[9]

It has been estimated that if the prevalence rates in Olmsted County are applied to the United States population, there would be 1 000 000 individuals with IBD in USA. Accordingly, if the higher prevalence figures from European studies are extrapolated to the combined population of Europe, there may be as many as 1.8 million individuals affected.[14]

AGE

IBD is more common in young people. The peak age of onset is 15 to 30 years old, although it may occur at any age. About 10% of cases occur in individuals < 18 years old. Both UC and CD have a bimodal age distribution, with a second smaller peak occurring in individuals aged 50 to 70 years;[15] however some studies of Crohn's disease incidence performed within the past decade have not observed this second peak.[16]

SEX

Several studies have demonstrated that in the case of IBD men and women are generally at similar risk. However, according to literature data, ulcerative colitis is slightly more common in males, whereas CD is marginally more frequent in women, with a reported female to male ratio range 1:1 to 1.8:1.[17]

Both diseases tend to occur in higher socioeconomic groups and in residents of urban areas.[18]

RACE AND ETHNICITY

In the past IBD was thought to be much more common in Caucasians than African-Americans. This was probably due to the fact that most epidemiological studies were conducted in areas were non-white minorities are underrepresented.[16] Although IBD is still affecting more frequently people of Caucasian and Ashkenazic Jewish origin than individuals from other backgrounds,[19] this gap has been closing, with an increased incidence in African Americans and in second generation south Asians who have migrated to developed countries.[20]

MORBIDITY - MORTALITY

IBD is a chronic condition without a medical cure, which commonly requires a lifetime of care. It can cause significant morbidity, but it is not generally associated with increased mortality. In the era of immunoregulative therapies most patients are able to live a normal, productive life and epidemiological studies have indeed shown that mortality rates for both UC and CD have declined during the last decades.[21,22]

It has been estimated that each year in the United States, IBD accounts for 700 000 physician visits, 100 000 hospitalizations and disability in 119 000 patients. Over the long-term up to 75% of patients with CD and 25% to 33% of those with UC will require surgery.[14]

REFERENCES

1. Loftus E, Silverstain M, Sandborn W, et al. Ulcerative colitis in Olmsted County, Minnesota, 1940-1993: incidence, prevalence and survival. Gut 2000; 46:336-343.
2. Blanchard J, Bernstein C, Wajda A, et al. Small area variations and sociodemographic correlates for the incidence of Crohn's disease and ulcerative colitis. Am. J. Epidemiol. 2001; 154:328-335.
3. Moum B, Vatn M, Ekbom A, et al. Incidence of Crohn's disease in four counties in southeastern Norway, 1990-93. A prospective population based study. The Inflammatory Bowel South Eastern Norway (IBSEN) Study Group of Gastroenterologists. Scand. J. Gastroenterol. 1996; 31:355-361.
4. Rubin G, Hungin A, Kelly P, et al. Inflammatory bowel disease: epidemiology and management in an English general practice population. Aliment Pharmacol Ther 2000; 14:1553-1559.
5. Tragnone A, Corrao G, Miglio F, et al. Incidence of inflammatory bowel disease in Italy: a nationwide population-based study. Gruppo Italiano per lo Studio del Colon e del Retto (GISC). Int j Epidemiol 1996; 25:1044-1052.
6. Morita N, Toki S, Hirohashi T, et al. Incidence and prevalence of inflammatory bowel disease in Japan: nationwide epidemiological survey during the year 1991. J Gastroenterol 1995; 30(suppl 8):1-4.
7. Wright J, Froggatt j, O'Keefe E, et al. The epidemiology of inflammatory bowel disease in Cape Town 1980-1984. S Africa Med J 1986; 70:10-15.
8. Stowe P, Redmond S, Stormont J, et al. An epidemiologic study of inflammatory bowel disease in Rochester, New York. Hospital incidence. Gastroenterology 1990; 98:104-110.
9. Bernstein C, Wajda A, Blanchard J. The clustering of other chronic inflammatory diseases in inflammatory bowel disease: a population based study. Gastroenterology 2005; 129:827-836.
10. Molinie F, Gower-Rousseau C, Yzet T, et al. Opposite evolution in incidence of Crohn's disease and ulcerative colitis in Northern France (1988-1999). Gut 2004; 53:843-848.
11. Tsianos E, Masalas C, Merkopoulos M, et al. Incidence of inflammatory bowel disease in norhtwest Greece: rarity of Crohn's disease in an area where ulcerative colitis is common. Gut 1994; 35:369-372.
12. Manousos O, Giannadaki E, Mouzas I, et al. Ulcerative colitis is as common in Crete as in northern Europe: a 5-year prospective study. Eur J Gastroenterol Hepatol 1996; 8:893-898.
13. Manousos O, Koutroubakis I, Potamianos S, et al. A prospective epidemiologic study of Crohn's disease in Heraklion, Crete. Incidence over a 5-year period. Scand J Gastroenterol 1996; 31:599-603.
14. Hanauer S. Inflammatory bowel disease: Epidemiology, pathogenesis and therapeutic opportunities. Inflamm Bowel Dis 2006; 12 (suppl 1):S3-S9.
15. Andres P, Friedman S. Epidemiology and the natural course of inflammatory bowel disease. Gastroenterol Clin North Am. 1999; 28:255-281.
16. Sandler R, Loftus E. Epidemiology of inflammatory bowel disease. In: Sartor R, Sanborn W, eds. Kirsner's Inflammatory Bowel Disease, 6th ed. Philadelphia, PA: WB Saunders; 2004: 245-262.
17. Loftus E, Schoenfeld P, Sandborn W. The epidemiology and natural history of Crohn's disease in population based patient cohorts from North America: a systematic review. Aliment Pharmacol Ther 2002; 16:51-60.
18. Loftus E, Sandborn W. Epidemiology of inflammatory bowel disease. Gastroenterol Clin North Am. 2003; 31:1-20.
19. Niv Y, Abuksis G, Fraser G. Epidemiology of ulcerative colitis in Israel: A survey of Israeli kibbutz settlements. Am J Gastroenterol 2000; 95:693-698.
20. Carr I, Mayberry J. The effects of migration on ulcerative colitis: a three year prospective study among Europeans and first and second generation South Asians in Leicester (1991-1994). Am J Gastroenterol 1999; 94:2918-2922.
21. Persson G, Bernell O, Leijomnarck C, et al. Survival and cause specific mortality in inflammatory bowel disease: a population based cohort study. Gastroenterology 1996; 110:1339-1345.
22. Jess T, Winther K, Munkholm P, et al. Mortality and causes of death in Crohn's disease: follow up of a population based cohort in Copenhagen County, Denmark. Gastroenterology 2002; 122:1808-1814.