

# Inflammatory Bowel Disease (IBD) in Colombia: Is our epidemiological profile changing?

Luis Fernando Pineda Ovalle, MD.<sup>1</sup>

<sup>1</sup> Internist, Gastroenterologist and Epidemiologist at the Centro de Enfermedades Digestivas. Associate Editor of the Colombian Review of Gastroenterology Bogotá, Colombia

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Inflammatory bowel disease (IBD) is a chronic condition of uncertain etiology that produces inflammation of the alimentary canal, primarily the small intestine and the colon. Crohn's disease (CD) and ulcerative colitis (UC) are its two main phenotypical manifestations. The current hypothesis for its pathogenesis is that a combination, or combinations, of genetic and environmental factors alter regulation of the immune system.

Epidemiological studies of patterns of geographic and demographic variation constitute invaluable tools for exploration of possible causes for the development of this disease as well as for identification of specific local risk factors that may influence its incidence, evolution and clinical behavior. This information can also be fundamental for making rational decisions about allocation of health care resources and for developing early detection and treatment programs in any community. Nevertheless, there are very large impediments in the way of conducting epidemiological studies of IBD: diagnosis is difficult and there is no gold standard for identifying this disease. Early symptoms are not very specific, and they can simulate many other diseases. Comparative epidemiological studies between populations constitute a great challenge due to the variability of clinical criteria used, and regional variations in availability of endoscopic procedures and the levels of knowledge among doctors. All of this can influence whether or not cases are detected, thus becoming a determining factor in the validity of reports. Many epidemiological studies have been performed based on diagnoses made upon hospital admission. These statistics underestimate the true levels of incidence because a great proportion of patients nowadays are never hospitalized. All of the preceding serves to remind us that, when comparing epidemiological studies, differences between populations can be due to the methodologies used and not to true environmental or genetic differences.

On a global scale IBD annual incidence rates vary widely: from 0.5 to 24.5/100.000 inhabitants for UC, and from 0.1 to 16/100,000 inhabitants for CD. IBD prevalence has reached 396/100.000 (1,4). During the past few years the incidence pattern of both diseases has changed dramatically, especially their geographic distributions (1). Every day more studies add support to the finding that the predominance of UC incidence over CD incidence is diminishing over time. In many countries prevalences of CD are being observed that are greater than those reported in earlier studies (2). Traditionally the highest incidence rates for have been reported in North America and western Europe while the lowest rates have been reported in Eastern Europe, Africa, South America and Asia. These regions of the world traditionally constituted the so called zones of low risk (1,4). Recent studies have shown a change in tendencies from these traditional inci-

dence patterns in which values in regions of low risk are progressively increasing. In some areas they have reached levels similar to those of the developed countries (3 -5). These data indicate that, as each day passes, the conventional epidemiological gap between North and South is closing, and that previous epidemiological paradigms must be reevaluated. The observation that higher risk populations have resided in countries with greater development suggests the hypothesis that urbanization and modification of the environment constitute fundamental risk factors for manifestation of this disease.

Although IBD's North-South epidemiologic gradient is diminishing, current studies continue to indicate that the highest prevalence rates are still being observed in northern latitudes. In fact the two highest incidence rates of CD were reported in regions of Canada (6, 7). CD prevalence in North America is between 26.0 and 198.5/100,000 inhabitants, while that of UC is between 37.5 and 229/100,000. It is calculated that the total number of individuals affected by CD in Canada and the United States is 600,000 people, while 690,000 are affected by UC for a total of 1.3 million people who suffer from IBD (6,7). Data available from European centers are similar, with a prevalence of between 8.3 and 214 cases/100.00 inhabitants for CD, and between 21.4 and 243/100,000 for UC (8, 9) or a total of 1.8 million people with IBD throughout Europe. In the EU and Western Europe the predominance of UC previously reported has now been reported to be diminishing as CD becomes more and more frequent (10). Although IBD incidences and prevalences in East Asia and Eastern Europe are still low when compared to western countries, they have been increasing rapidly (11). The factors implied in this phenomenon are related to the adoption western of life styles. They include diet, smoking and improved sanitary conditions. Some part of these changes in the statistics can be explained by the application of new diagnostic methods, more thorough searches to detect IBD incidence and refinements in the methodological quality of studies. Despite these possible sources of confusion, the consistency of different studies indicates that these statistical changes are probably the result of real increases due to unidentified environmental and population factors.

This issue of the *Colombian Review of Gastroenterology* includes a descriptive study that shows the frequency of IBD incidences among patients, both hospitalized and ambulatory, taken care of in the Pablo Tobón Uribe Hospital in Medellín over a period of 8 years from 2001 to 2009 (12). In that institution there is a special IBD unit that has become a regional referral center to which the majority of IBD cases in Medellín and the neighboring municipalities of the department of Antioquia are sent. This city and region are among the most populous in our

country. Two hundred and two eligible patients were included in the study's sample. The data were recorded consecutively, and well standardized clinical criteria were used to define a diagnosis including severity of the disease and its clinical evolution. Factors associated with unfavorable evolution were also determined. The frequency CD found was 15.8%, that of UC was 80.7%, and that of indeterminate colitis (IC) was 3.5%. A slight predominance of women patients (56.4%) was observed. Average age at onset was 37 years. 27.7% of these patients had extra-intestinal compromises, while the average amount of time that had elapsed between onset of symptoms and diagnosis was 9.2 months for UC and 13.2 months for CD. 35% of the patients with UC presented extensive colitis while 23.1% of them presented severe symptoms. 50% of the patients with CD had ileocolonic compromises, while inflammatory, stenotic and perianal behavior appeared in similar proportions in this group. The 6.0% incidence of colectomies for UC was related to the extension and severity of the disease. In contrast, 50% of the CD patients required surgical treatment, most of them for penetrating or perianal disease. Biological therapy was used for 7.4% of the UC patients and for 47% of the CD patients. This was related to the risks involved in surgical treatment of the two diseases.

The epidemiological data available for Latin America is very limited. A recent study from Puerto Rico reported a significant increase in the total IBD incidence of IBD from 1996 to 2000 (13). The study was designed around the recruitment of patients from various gastroenterologists in private practice in the south of the country. Demographic and clinical data were taken from clinical histories of 202 new IBD cases (CD 48, UC 102 and IC 52). A significant annual increase from 3.07 to 7.74 /100.000 people was observed during this period. The incidence of CD increased by a factor of four. The study concludes that the incidence of IBD in Puerto Rico is increasing and that it may be higher than those previously reported in the Latin American population. The annual incidences in Argentina and Panama were of 1.2/100,000 and 2.2/100,000 respectively according to a study based on hospital registries in well defined communities performed between 1987 and 1993. Annual rates of incidence were estimated by dividing the number of cases over the population of the area each hospital serves (14). No CD cases were reported in Panama while only one case was reported in Argentina. The authors argue that the numbers they report represent good estimates of incidence rates in each area due to the ample coverage these hospitals provide in each region studied. They conclude that these rates are lower than those reported for Hispanic communities residing outside their countries of birth. A 20 year long study performed in Brazil from 1980 to 1999 (15) reported a total of 257 new cases (CD 126,

UC 131). During the study period frequency of admissions for the two diseases increased from 40 cases/10,000 to 61 cases/10,000. Gradually CD became more common than UC in this study. For both diseases women patients predominated. Age at hospital admission ranged from 30 to 40 years. Smoking habits were related to complicated forms of CD while extraintestinal manifestations and pancolitis were related to the severity of the UC. The authors conclude that there has been an increase in hospital admissions for IBD, and that CD has become more prevalent. These works are very similar in design to the one undertaken by Dr. Juliao and his colleagues, but with the fundamental difference that they analyzed the temporary tendencies of incidence.

As we have seen, the few studies done in countries in our region show tendencies similar to those reported in other low risk regions where the disease has been observed. IBD rates of incidence have been progressively increasing with increases in the proportion of Crohn's disease. Nevertheless we must emphasize that we cannot infer the incidence and prevalence of IBD in these countries from these data since they were taken from hospital registries in single localities or from peripheral centers of private practice and were not taken from basic population statistics. Colombia does not yet have such basic population studies either. Aside from the study of Dr. Juliao and his colleagues presented in this issue, we have only one previous study done in Bogota in 1991 (16). That series reported 108 patients with IBD of which 10 had CD. Comparing these data with the study of Juliao and his group we observe that there is an increase of CD frequency from 9.2% in 1991 to 15.8% in 2009. Putting potential methodological differences between the two studies aside, it is necessary to emphasize that, while both are series of cases based on hospital registries, they were conducted over different periods of time, at and different sites, and in different referral centers in the two biggest cities of the country. Since this is a comparison between different studies we cannot affirm that there is any epidemiologic evidence of an increase in the incidence of IBD, especially of CD, in Colombia. However, there are not many reasons to think that this change is not occurring here. The study published by doctor Juliao and his group makes invaluable contributions to the knowledge of IBD in our country and our region. First, it has one of the biggest samples of the studies reported in Latin America, plus it offers valid and reliable first hand local data about demographic characteristics of the disease, its clinical evolution, comparative frequencies of CD and UC, and anatomical locations compromised. Also it sends an alarm signal to Colombian doctors about of the relatively long delays in diagnosing the disease and the great proportion of patients who arrive at our institutions in advanced and severe stages of IBD,

especially of CD. The results of this study should be taken as important epidemiologic reference points for Colombia because the hospital Pablo Tobón Uribe is recognized as a specialized referral center to which the majority of the new cases are sent. Consequently, we can be confident that the data represents the characteristics of the disease in that region. Although the data were recorded over a period of time rather than at one single point in time, a valuable opportunity to analyze the tendency of the disease over time was lost. During each year the study could have established whether there were upwards or downwards variations in the number of reported new cases in relation to the total number of patients taken care of in the institution. This method establishes the incidence of an event in a certain place. Unfortunately, this analysis was not performed. Although this data could not in any case be used to establish the incidence rate for the entire country, it would be useful for evaluating the dynamics of epidemiologic change in Colombia, and for comparing the Colombian profile with those observed in other latitudes.

Knowledge of different disease loads is essential for the integral development of a country, especially for the efforts that the institutions and the governments undertake, even if they will never be enough. Here in Colombia we still have a debt to the nation to carry out a great countrywide cooperative effort that will allow us to determine the epidemiologic behavior of IBD. The work done by the Pablo Tobón Uribe Hospital is an example that shows that it is possible. Finally, it gives me pleasure to tell you that this work was part of the special session of "the best of DDW" last May in New Orleans during the Digestive Disease Week sponsored by the American Gastroenterological Association. This indicates the importance for the world that of characterizing IBD on our continent, and it emphasizes the valuable contribution that this study has made to the small amount of research that has been done to date here in Latin America.

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