

Prevalence and demographic characteristics of inflammatory bowel disease in Cartagena, Colombia

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Abstract

Background: Globally, prevalence of inflammatory bowel disease (IBD) is around 396 cases per 10⁵ inhabitants. However, it has been considered to have low incidence and prevalence in Hispanic populations. To date there is little published epidemiological information on IBD in South America.

Objectives: Estimate the prevalence of IBD in an adult population affiliated to an EPS in the city of Cartagena, Colombia.

Methods: All patients with confirmed IBD who received medical care in COOMEVA EPS up until June 01, 2006 were identified through reviewing their medical records. Prevalence was estimated in relation to the over age 15 patient population enrolled in the EPS at the time of data collection.

Results: 26 patients with IBD were the basis for calculating prevalence in our population. Six individuals had CD and 20 were diagnosed with UC. The estimated overall prevalence of IBD was 29 x 10⁵ (95% CI: 17-40).

Conclusion: IBD still seems to be a rare disease in South America. Its incidence may be increasing according to recent data from other Hispanic communities. Our results are consistent with studies in other populations where IBD is an emerging disease.

Key words

Inflammatory bowel disease, South America, Crohn's disease, ulcerative colitis.

BACKGROUND

Crohn's Disease (CD) and Ulcerative Colitis (UC) are chronic inflammatory diseases of the gastrointestinal tract which primarily affect the small intestine and colon. They are part of a spectrum of diseases known today as Inflammatory Bowel Disease (IBD).

Traditionally, IBD has been regarded as a common pathology in industrialized countries, with the highest incidences found in Europe and North America (1). This indicates that environmental, dietary and genetic factors are involved in the pathogenesis of the disease. Globally, prevalence of IBD seems to be around 396 per 10⁵ people (2). However, this picture appears to change dramatically

depending upon the geographic area in which it is calculated. In recent reviews a north-south gradient of prevalence has been reported (1, 3).

Nevertheless it is likely that prevalences are rising in areas traditionally considered to have low prevalence rates such as Eastern Europe (4-6) and Asia (7). It seems increasingly clear that the incidence of IBD is a dynamic process in which incidence and prevalence in different geographic areas change over time (1).

Although epidemiological data on IBD in Hispanic populations are scarce, recent studies from Puerto Rico (8, 9) and Brazil (10) have now shed some light on this subject. Nevertheless, we are still far from knowing the real prevalence of this disease in Central and South America. The

precariousness of the information systems of the various national health services, the high prevalence of infectious intestinal diseases, the insidious nature of IBD's symptoms, the lack of diagnostic tools such as endoscopy in some geographical areas and physicians' lack of familiarity with this disease all combine to make epidemiological study of IBD in developing countries a difficult task.

In 1993, the Colombian government implemented major reforms, forming entities called "Health Promotion Companies" (Empresas Promotoras de Salud - EPS) to manage the provision of health care. Every Colombian worker must be affiliated to one, and only one, EPS. Independent of their sex, social status or income, each affiliated worker contributes 4% of his or her monthly salary. This has facilitated an improvement in access to medical care and diagnostic tests, making it easier to identify diseases considered less prevalent in this environment. This new insight combined with better information systems have provides us with a great opportunity to initiate epidemiological studies in this population.

METHODS

The initial diagnoses of IBD were obtained from the computerized database of HPC. 90,932 individuals over 15 years of age who had received medical care as of June 1, 2006 were included in the medical record review. Medical records of patients diagnosed with CD or UC were reviewed, and then this data was confirmed with the gastroenterologists involved in the management of these patients.

The Lennard-Jones criteria were used for diagnosis of IBD cases. Cases which were impossible to diagnose were rejected. Then prevalence by age group, diagnosis and gender were calculated. The presence or absence of risk factors such as alcohol consumption, smoking, immunizations and oral contraceptive use could not be determined due to insufficient data in medical records.

STATISTICAL ANALYSIS

Results are expressed as frequencies and percentages with their corresponding confidence intervals. Pearson's Chi-square test was used to compare prevalences between different groups. Statistical calculations were done with EPIDAT 3.1. A p value of <0.05 was considered statistically significant.

RESULTS

Among the 90,932 individuals whose records were reviewed, 60 IBD diagnoses were identified. 34 cases were dismissed after a review of clinical records, most of them

because of a wrong initial diagnosis. Finally, 26 patients with IBD became the basis for calculation of prevalence in our population. Six individuals had CD, and 20 were diagnosed with UC (figure 1). The mean age of our subjects was 40 + or - 12.7 years (range 17-79). Estimated overall prevalence of IBD was 29 per 10⁵ (95% CI 17-40). Most of this was due diagnoses of CU which had an estimated prevalence of 22 per 10⁵ (95% CI 12-22). CD diagnoses were less frequent. Estimated CD prevalence was 7 per 10⁵ (95% CI 1-12) (Table 1). UC prevalence among women was 30.4 per 10⁵ (95% CI 14-47), considerably higher than the prevalence among men which was 12 per 10⁵ (95% CI 4-28). No gender differences were found for prevalences of CD (6.1 per 10⁵ for women vs. 7.2 per 10⁵ for men). In general, the prevalence of IBD was higher in females, 37 per 10⁵ (95% CI 19-54), than in men, 19 per 10⁵ (95% CI 5-34) (Table 2). The highest prevalence, 67 per 10⁵ (95% CI 22-155) was in the 45-49 year old group which had 6 cases of IBD. The next highest prevalence rate was among the group of patients aged 50-54 years. With 3 cases of IBD this group had a prevalence rate of 54 per 10⁵ (95% CI 11-158) (Table 3).

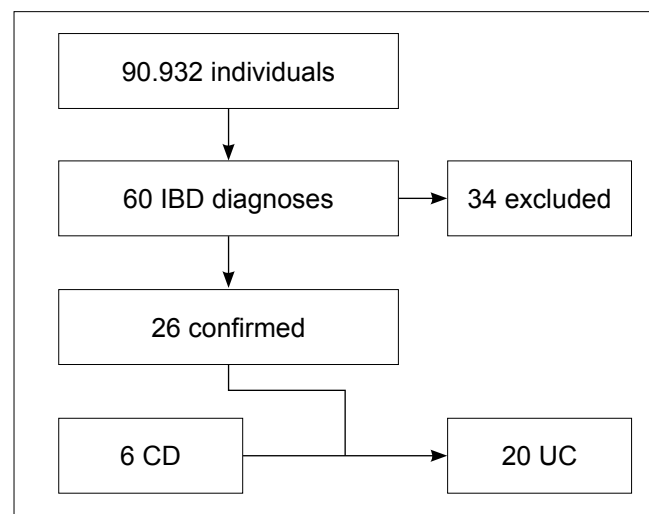


Figure 1. Identification of cases.

DISCUSSION

The first published epidemiological data about IBD in South America come from studies performed in hospital populations. Their primary aim was to describe clinical and demographic characteristics of patients with IBD (11-14).

A study conducted by Linares et al in Argentina and Panama (15) reported incidences of 2.2 per 10⁵ and 1.2 per 10⁵. For their calculations they based prevalence rates on the number of new cases which occurred in each of two hospitals over a period of seven years. They divided

these cases by the population living in the area of influence of each institution. Based upon this, they concluded that incidences of IBD were even lower than those estimated for Hispanic communities living outside of Latin America. Nevertheless, the facts that only one case of CD has been identified in Argentina, and none have been identified in Panama suggest that actual cases of IBD were underestimated. As has already been seen, CD is rare, but not non-existent in other Hispanic-American populations.

Tabla 1. Prevalence and diagnoses.

	Frequency	Percentage	Number of subjects	Prevalence (95% CI)
Crohn's	6	23,1	90.932	7 x 10 ⁵ (1-12)
Ulcerative Colitis	20	76,9	90.932	22 x 10 ⁵ (12-22)
Total	26	100,0	90.932	29 x 10 ⁵ (17-40)

Tabla 2. Prevalence and gender.

	Frequency	Percentage	Number of subjects	Prevalence (95% CI)
Women	18	69,2	49.275	37 x 10 ⁵ (19-54)
Men	8	30,8	41.657	19 x 10 ⁵ (5-34)
Total	26	100	90.932	29 x 10 ⁵ (17-40)

Tabla 3. Prevalencia y edad.

Age	Frequency	Percentage	Number of subject	Prevalence (IC 95%)
20-24	1	3,8	10.830	9 (0-51)
25-29	3	11,5	13.017	23 (5-67)
30-34	1	3,8	11.205	9 (0-50)
35-39	5	19,2	10.373	48 (16-112)
40-44	4	15,4	9.568	42 (11-107)
45-49	5	19,2	7.509	67 (22-155)
50-54	3	11,5	5.550	54 (11-158)
55-59	1	3,8	4.158	22 (1-125)

More recently, the results of the Appleyard group (9) in Puerto Rico and Victoria (10) in Brazil, have contradicted the findings of the Linares study. These newer studies observed not only higher rates of incidence but also clear upward trends (Table 4).

Torres et al reported overall IBD prevalence of 106.1 per 10⁵ inhabitants (62 per 10⁵ for UC and 41.4 per 10⁵ for CD) in a population receiving medical services from a private insurer in Puerto Rico. However, because of the privacy policy of the insurance company they were unable to

review patients' clinical histories to verify diagnoses. This could have resulted in an overestimation of the number of cases if alternative diagnoses had been arrived at late, as occurred in our study in which 56.6% of cases initially diagnosed with IBD were rejected for this reason.

Tabla 4. Incidence.

Linares	1,2-2,2 x 10 ⁵
Appleyard	3,07 x 10 ⁵ (1996) a 7,74 x 10 ⁵ (2000)
Victoria	1,99 x 10 ⁵ (1990) a 19,5 x 10 ⁵ (2005)

Recently, Appleyard estimated the incidence and prevalence of IBD from 1996 to 2000 in a population of 814,256 (2000 census) in southern Puerto Rico. They found a prevalence of 5.89 per 10⁵ for CD and 12.53 per 10⁵ for UC. Total IBD prevalence of 24.81 per 10⁵ also included cases of indeterminate colitis. These authors acknowledge that they may have underestimated the true incidence of IBD due to the loss of some cases that were not addressed in the study area. However if 93 cases diagnosed before 1996 had been included, their values would have been slightly higher (16).

Finally, a study conducted in the state of Sao Paulo, Brazil (10) found overall prevalence of IBD of 22.6 x 10⁵ (CU: 14.81 x 10⁵, CD: 5.65 x 10⁵).

Our results are closer to those estimated by the last two authors (Table 5). Cartagena is located on the Caribbean coast of Colombia. Its population is composed mainly of descendants of Africans and southern Europeans as are the populations of Puerto Rico and Brazil. Nevertheless, large socioeconomic differences among these three countries make comparisons more difficult to assess. The fact that in our population, women were more likely to have IBD was not confirmed in the study of Appleyard (9) but appears to coincide with the data from Brazil (10). In accordance with the findings of other Latin American authors, we also found a higher prevalence of UC than of CD (p < 0.01) (9, 10, 14).

Tabla 5. IBD prevalence in Latin America.

	n	General	CD	UC
Appleyard	814.256	24,81 x 10 ⁵ (21-28)	5,89 x 10 ⁵ (4,17-7,62)	12,53 x 10 ⁵ (10,05-15)
Torres	802.726	106,1 x 10 ⁵ (99,1-113)	41,4 x 10 ⁵ (37-46,1)	62,2 x 10 ⁵ (56,9-67,9)
Victoria	553.508	22 x 10 ⁵ (18-26)	5,65 x 10 ⁵ (3,25-7,23)	14,81 x 10 ⁵ (10,41-16,69)

Our results are comparable to those of studies in Croatia (17, 18) and Japan (19) in which the findings suggest that the incidence of UC is higher than that of the CD in popu-

lations where IBD is an emerging disease. Usually, increased incidence of UC precedes an increase in the incidence of CD by 15 to 20 years.

The small number of cases in our study may have affected the accuracy of our results. Like our colleagues, we may have underestimated the number of patients affected since our sample was small compared with the study population of Cartagena which has a population of 985,400 people (20).

However, the high cost of medicine in Colombia coupled with the fact that these individuals can be affiliated to one, and only one, EPS, make it unlikely that they would have sought medical care in other medical centers or cities. This, together with the fact that our figures are consistent with those reported in other Latin American populations and in countries where IBD seems to be an emerging public health problem, gives strength to our results.

CONCLUSIONS

Our results suggest that IBD is not a frequent occurring pathology in Cartagena, a finding that is in agreement with recent data from studies in other Latin American communities. Nevertheless, these observations should be confirmed with prospective studies designed specifically to study the incidence and prevalence of IBD in this population. The epidemiology of gastrointestinal diseases should become the object of continuous research in this country. Knowledge of the real epidemiological profile of these pathologies, including those that occur infrequently, will aid us in the development of efficacious health care strategies and keep us alert to opportune diagnostic possibilities.

Conflicts of interest

None.

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