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# The complete picture of changing pediatric inflammatory bowel disease incidence in Spain in 25 years (1985—2009): The EXPERIENCE registry

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#### **KEYWORDS**

Pediatric inflammatory bowel disease; Crohn's disease; Ulcerative colitis; IBD unclassified; Incidence; SPIRIT registry; EXPERIENCE registry

#### **Abstract**

*Objectives*: A growing incidence of pediatric IBD (PIBD) in southern Europe has been recently reported. The SPIRIT registry (1996–2009) confirmed these tendencies in Spain. Our aim is to obtain data from 1985 to 1995 and describe the complete picture of PIBD presentation changes in Spain in the last 25 years.

*Methods:* A retrospective survey of incident PIBD in the period 1985–1995 was performed. Patients' data were obtained from the hospitals' databases and compared with the published data from the 1996 to 2009 period. Seventy-eight IBD reference centers took part in this survey.

Results: Data from 495 patients were obtained: 278 CD (56.2%), 198 UC (40%), and 19 IBDU (3.8%); 51.7% were female, with higher predominance both in UC (58.6%) and in IBDU (57.9%), but not in CD (46.4%). Median (IQR) age at diagnosis was 12.9 (10.0–15.7) years, with significant differences among

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IBD subtypes: CD: 13.1 (10.8–16.0) vs UC: 12.4 (9.4–15.1) vs IBDU: 7.5 (3.0–13.0) (p  $\leq$  0.001). These results are significantly different to the ones in the SPIRIT registry, with a higher proportion of IBDU, younger age and male predominance. The data from both periods taken together give a complete picture of a 25–year period. An annual increase of incident patients was observed, with a ten-fold increase over this period.

Conclusion: These data extend the epidemiological trends to a full 25-year period (1985–2009). PIBD incidence in Spain has experienced a sixteen-fold increase. The IBD subtype, localization of the affected segment, age- and sex distribution observed are in accordance with our previously published ones of 1996–2009.

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#### 1. Introduction

A growing incidence of pediatric inflammatory bowel disease (PIBD; diagnosed below 18 years of age) worldwide has been reported. 1-6 Although the highest incidence figures have been found in the northern parts of North America and in Scandinavia, recent studies have also showed this trend in southern Europe and other Mediterranean countries. The exhaustive systematic review by Benchimol et al. on international epidemiological trends of pediatric IBD oth in developed and developing countries, although most of these countries lacked accurate estimates.

The recently published SPIRIT registry by the IBD working group of the SEGHNP (Spanish Society for Pediatric Gastroenterology, Hepatology and Nutrition) offered for the first time robust data on the increase of PIBD incidence in Spain in the period 1996–2009, and constitutes the most extensive nationwide incidence study from a Mediterranean country.  $^{11}$  According to its results, overall IBD incidence increased from 0.97/10 $^{5}$  inhabitants under 18 years in 1996 (95% CI 0.8–1.2) to 2.8 in 2009 (95% CI 2.4–3.2) (p < 0.001), Crohn's disease (CD) from 0.53 (95% CI 0.3–0.7) to 1.7 (95% CI 1.45–2.03) (p < 0.001) and ulcerative colitis (UC) from 0.39 (95% CI 0.27–0.55) to 0.88 (95% CI 0.69–1.1) (p < 0.001). Both overall IBD and CD incidence at the end of the studied period were found to be three fold higher than baseline, whereas UC experienced a two-fold increase in the same period.

### 2. Objectives

Our aim is to extend our epidemiological data of PIBD in Spain with information about children and adolescents diagnosed between January 1985 and December 1995 and to compare these data with those previously obtained from the period 1996–2009. This new study contributes to the complete description of changes in PIBD presentation in Spain in the last 25 years.

#### 3. Material and methods

This is a collaborative, retrospective, multicenter study called EXPERIENCE (EXtended PEdiatric Registry of IBD Epidemiological Nationwide ChangEs). The study was planned and performed inside the IBD working group of the

Spanish Society for Pediatric Gastroenterology, Hepatology and Nutrition (SEGHNP).

A retrospective survey of incident PIBD (below 18 years at diagnosis) in the "early period" of 1985–1995 was performed. IBD diagnosis was made according to standard clinical, endoscopic, histological, and radiological criteria. 12,13 Patients' data at diagnosis were obtained from the different hospitals' own databases. Both pediatric and adult IBD Units were contacted in order to avoid missed PIBD patients being followed from the beginning in adult services and to obtain the most reliable data. The same seventy-eight reference IBD centers that had previously participated in the SPIRIT registry, both pediatric and general, took part in this new survey (see Appendix A). All the 35 referral PIBD Units from tertiary centers in Spain participated, plus 31 small pediatric Gastroenterology Units in regional hospitals (representing 90% of these hospitals in which PIBD patients can be followed and that usually work in a shared care network with referral IBD Units), and lastly 12 adult hospitals without pediatric services. Distribution of all these centers, spread all over the nation, guarantees that the data collected are representative of the whole country and included mostly all pediatric patients with IBD diagnosed throughout this 25-year period. Every patient was identified in the registry with three letters (initial letter of the name and the two surnames used in Spain) and the date of birth indicated as ddmmyy. Patient's epidemiological and clinical data at diagnosis were obtained: sex, age, type (CD, UC, IBD type unclassified - IBDU) and location of the disease according to the Montreal classification. 14 We decided not to include data from possible upper involvement or perianal involvement in CD (L4 and p variants of the Montreal classification) as we considered these could be not very reliable due to the retrospective nature of the study and the period reviewed starting before the Porto Criteria publication, which emphasized the need for upper GI endoscopy as well as colonoscopy at PIBD diagnosis. 12 We assumed many patients diagnosed before 2005 would only have had an upper endoscopy with significant upper GI symptoms present. These data were compared to our previously published data of incidence changes from the "later period" of the SPIRIT registry (1996–2009). 11

#### 3.1. Ethics

The study was approved by the Ethics Committee of the first author's center, as representative of the rest of the hospitals.

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