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Diagnostic delay in a French cohort of Crohn's disease patients

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Abstract

Diagnostic delay is frequent in Crohn's disease (CD) and may partly depend on socioeconomic status. The aim of this study was to determine the diagnostic delay and to identify associated risk factors, including socioeconomic deprivation in a French cohort of CD patients.

Methods: Medical and socioeconomic characteristics of all consecutive CD patients followed in 2 referral centers between September 2002 and July 2012 were prospectively recorded using an electronic database. Diagnostic delay was defined as the time period (months) from the first symptom onset to CD diagnosis. A long diagnostic delay was defined by the upper quartile of this time period. Univariate and multivariate analyses were performed to identify the baseline characteristics of patients associated with a long diagnostic delay.

Results: Three hundred and sixty-four patients with CD (mean age = 29.2 ± 12.6 years, 40.8% men) were analyzed. Median diagnostic delay was 5 months, and a long diagnostic delay was more than 12 months. Fifty-six patients (15.3%) had perianal lesions, and 28 patients (8.6%) had complicated disease at diagnosis. None of the following factors were associated with a long diagnostic delay: age, gender, CD location and behavior, marital and educational, language understanding, geographic origin and socioeconomic deprivation score measured by the EPICES score.

Conclusion: In this French referral center-based cohort of CD patients, the median diagnostic delay was 5 months. None of the baseline characteristics of the CD, including socioeconomic deprivation, influenced diagnostic delay in this cohort.

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1. Introduction

Crohn's disease (CD) is a chronic and disabling condition leading to irreversible bowel damage over time. Due to unspecific symptoms and limited test accuracies, a diagnostic delay is frequent in CD. In the Swiss inflammatory bowel disease (IBD) cohort, the median diagnostic delay was 9 months.[1] Whether this result can be extrapolated to other countries such as France is unknown as this may depend on the health care system.

Factors associated with diagnostic delay in CD are poorly known. In the Swiss IBD cohort, age <40 years and ileal location were associated with diagnostic delay.[1] A recent European study showed that the rates of death and poorer self-assessments of health were substantially higher in groups of lower socioeconomic status.[2,3] The impact of socioeconomic deprivation on diagnostic delay is unknown in inflammatory bowel disease (IBD).[4] The concept of early treatment to avoid later complications and the need for surgery in CD, aligned to rheumatoid arthritis treatments, is gaining momentum.[5–7] The identification of factors associated with diagnostic delay may allow earlier therapeutic intervention that could changed the course of CD as demonstrated by mucosal healing rates in the SONIC trial.[8]

The aim of this study was therefore to determine the diagnostic delay and to identify associated risk factors in French patients with IBD.

2. Patients and methods

All consecutive CD patients followed in two referral centers [Groupe Hospitalier Le Raincy-Montfermeil (suburbs of Paris) and Hopital Cochin (Paris)] were invited to participate in a prospective cohort after they gave informed consent. Clinical and socioeconomic characteristics of all consecutive CD patients between September 2002 and November 2012 were prospectively recorded using an electronic database (FileMaker Pro V 9.0).

2.1. Definition of diagnostic delay

Diagnostic delay was defined as the time period (months) from the first symptom onset to establishment of CD diagnosis by the gastroenterologist. All consecutive patients diagnosed in our hospitals were asked about their symptom onset, and their diagnostic delay was recorded at diagnosis. In patients with CD diagnosis made elsewhere, diagnostic delay was calculated on the base of patient's interview and the medical chart.

Similarly to Vavricka et al.,[1] we defined "a long diagnostic delay" as the upper quartile of this time period.

2.2. Data collected

The following sociodemographic and characteristics of CD data were collected: age, gender, marital, education and employment status, family history of IBD, symptoms at diagnosis (and the most relevant of them), extraintestinal manifestation (peripheral arthritis, ankylosing spondylitis, aphthous stomatitis, uveitis, erythema nodosa, pyoderma gangrenosum), disease location and phenotype according to Montreal classification, anoperineal lesions.

Socioeconomic deprivation was assessed using the "Evaluation de la Précarité et des Inégalités de santé dans les Centres d'Examens de Santé" (Evaluation of Precarity and Inequalities in Health Examination Centers [EPICES]) score computed on the basis of individual conditions of deprivation.[6,9,10] The questions of the EPICES score are listed in Appendix A. The EPICES score was used as a quantitative or as a dichotomous variable with the EPICES median considered as the cutoff value to divide the population into two subgroups: the less deprived with a score of 30.17 and the more deprived with a score of >30.17. The questionnaire was administered since 2006 to all new diagnosis of CD. For patients diagnosed before 2006, the questionnaire was administered retrospectively.

We also collected birth country (France, Europe, North Africa and others) as well as language understanding (poor versus good, according to the quality of the rephrasing by the patient) assessed by gastroenterologists (SN, VA).

2.3. Statistical analysis

Analyses were conducted with long diagnosis delay as the primary dependent variable. Variables were coded both categorically (sex, CD location, anoperineal lesion, etc.) and continuously (age, diagnostic delay, EPICES score, etc). Data were expressed as mean ± standard deviation or as median and range.

Univariate and multivariate analysis were performed to compare the baseline characteristics of the group of patients with long diagnosis delay to the others for the following data: age, gender, age at diagnosis, family history of IBD, extraintestinal manifestations, past history of appendectomy, most relevant symptom, complications at diagnosis (occlusion, abscess, peritonitis), CD location and CD phenotype, marital status, education, language understanding, birth country, geographic origin and EPICES score (a score > 30.17 defined deprivation). The disease was classified as of a disabling and/or severe disease when at least two of the following disabling predictors defined by Beaugerie et al.[11] were observed at diagnosis: age below 40 years, active perianal disease and need for oral steroids.

For these analyses, we used Student's *t* test and ANOVA for continuous data and the chi-square test or Fisher's exact test for categorical data. Significant variables resulting from univariate analyses ($P \leq 0.20$) were processed in a stepwise multivariate model. Individual odds ratio (OR) and their 95% confidence intervals (CI) were computed for each variable. A two-tailed P value <0.05 was considered statistically significant. Statistical analysis was performed by SPSS software (version 18.0).

3. Results

3.1. Patient's characteristics at diagnosis

During the study period, the cohort comprised 390 patients with Crohn's disease. A total of 364 patients with CD (40.8% men) were analyzed. Two hundred and forty-three patients (67%) had their CD diagnosis made in one of the two referral

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