

Debut of Psoriasis is usually before Debut of Concomitant Inflammatory Bowel Disease: A Population-based Retrospective Study

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Since the first reports on associations between inflammatory bowel diseases (IBD) and psoriasis were published, much effort has been devoted to finding possible common aetiopathogenetic mechanisms. Both genetic and environmental factors have been associated with psoriasis and IBD (1, 2). Epidemiological studies of the relationship between IBD and psoriasis have been performed predominantly on selected patient materials in patients with a prior diagnosis of IBD (3) or in patient registries (4). In a recent publication (5) on psoriasis and IBD a temporal relationship was found and discussed.

The aim of this study was to explore the temporal relationship between the onset of IBD and psoriasis in a well-defined population-based cohort of patients with IBD.

MATERIALS AND METHODS

This study derived its patients from the IBD Cohort Uppsala Region (ICURE) (6, 7). The ICURE recruited all patients with a new diagnosis of Crohn's disease (CD) or ulcerative colitis (UC) in Uppsala County from 2005 to 2009. This cohort provides a follow-up time, making it possible to find patients who develop psoriasis in the years after a diagnosis of IBD. Standard diagnostic methods were used and the patients' IBD was classified according to the Montreal classification (8). A total of 483 patients with IBD were included in the study (330 with UC and 153 with CD).

The medical records were analysed and patients with psoriasis identified. The diagnosis was verified by a specialist in dermatology by analysing the documented diagnosis, symptoms and clinical images. Utilizing these data, the phenotype of psoriasis was classified according to established criteria (9). No standardized psoriasis severity scores were available; hence the disease severity was assessed using data from the medical records estimating the body surface area (BSA) affected. Psoriasis was classified as mild (BSA <3%), moderate (BSA 3–10%) or severe (BSA >10%). Special attention was paid to identification of the time-point of development of symptoms of psoriasis in relation to the onset of IBD. Smoking habits were noted.

All statistical analysis was performed using the software STATISTICA (version 10; 2011; StatSoft Inc., Tulsa, OK, USA; <http://www.statsoft.com>). Continuous variables were presented as means and medians, and differences were tested for significance with the Mann-Whitney *U* test, whereas categorical variables were tested with the χ^2 test and Fisher's exact test. $p < 0.05$ was considered significant.

The study was approved by the local ethics committee at Uppsala University (diary number 2006/173).

RESULTS

Descriptive statistics of the clinical characteristics of patients in the IBD cohort are presented in Table SI. Psoriasis

was diagnosed in 24 patients, and a dermatologist had examined 19 of these. Plaque psoriasis was diagnosed in all patients except 1 (Table SII). Mild psoriasis was found in 20 of 24 patients. Psoriasis was diagnosed before IBD in 22 out of 24 cases, 13 of 14 with UC, and 9 of 10 with CD (Table SII, **Fig. 1**). The prevalence of psoriasis was 4.3% in patients with UC and 6.5% in patients with CD.

Patients with IBD and psoriasis were more often former or active smokers when IBD was established compared with patients without psoriasis. Autoimmune comorbidities are shown in Table SII. A family history of psoriasis was seen in 15 of 24 (63%) patients with IBD and psoriasis.

Sixty-five patients of the cohort (13.6%) were treated with anti-tumour necrosis factor (anti-TNF) drugs because of IBD. No obvious case of paradoxical psoriasis induced by anti-TNF treatment was found. However, a 40-year-old woman with CD, who was a smoker, developed dermatitis with similarities to pustulosis palmoplantaris after her fourth infusion with infliximab.

There was a statistically significant difference in sex between patients with UC and psoriasis, where men were more numerous, compared with patients with CD and psoriasis, where women were more numerous.

DISCUSSION

In this population-based IBD cohort it was demonstrated that the debut of concomitant psoriasis occurred before the debut of IBD in most patients. This is a novel finding that clarifies the temporal relation between the diagnoses. In a

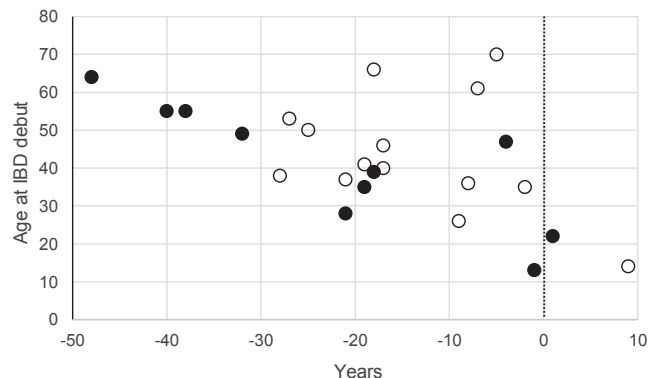


Fig. 1. Age at debut of inflammatory bowel disease (IBD) in relation to years from debut of psoriasis to debut of IBD. Open circle: ulcerative colitis; solid circle: Crohn's disease; vertical line: indicates the same time of debut of psoriasis and IBD.

study from the Netherlands, patients with both psoriasis and IBD were younger than those with IBD only. However, out of 21 patients with CD and psoriasis, only 3 were diagnosed with psoriasis first (5). A possible explanation for these differences could be the different methodology in their study with a retrospective study design starting from the date of diagnosis of psoriasis. Furthermore, the cohort was not population based.

There are several possible explanations for the finding of psoriasis generally being diagnosed first. Since the skin is immediately observable, a pathological process could be identified shortly after it has started, in contrast to a process in the intestine. Another possible explanation could be the generally greater impact of genetics in psoriasis than in IBD, making it necessary for environmental factors to act for a longer time in IBD (10). In a previous study 32% of patients with psoriasis had a relative with psoriasis (11). In comparison, 63% of patients with IBD and psoriasis in the current study had a relative with psoriasis, indicating a higher genetic impact in patients with both diseases.

The prevalence of psoriasis in the Swedish population was estimated as 1.23% at the end of 2010 (12). Thus, the prevalence of psoriasis in patients with IBD was 3–5 times higher than in the general population, in accordance with earlier observations (5).

The impact of smoking was clear in this study, in which only 1 out of 10 patients with CD and psoriasis had never been a smoker. The sex difference between UC and CD with psoriasis is a novel finding. In a previous study (3) there were no sex differences between these groups. However, the sample size in the current study is small; hence, more studies are needed.

The number of autoimmune comorbidities that were seen in the IBD and psoriasis group are in line with previous studies, where arthritis is one of the more common comorbidities (4). The severity of psoriasis was mild in most IBD patients with psoriasis. These findings are in line with previous studies (3, 5). In Sweden these patients are usually diagnosed and treated by general practitioners. A previous study (13) has shown a high diagnostic accuracy of 78% correct diagnoses of psoriasis by general practitioners. To reduce the risk of missing cases of mild psoriasis we therefore included patients diagnosed by general practitioners as well as by dermatologists. However, most patients had their diagnoses confirmed by a dermatologist at some point.

Since inclusion was based on previous medical journals, only scarce notes were found of standardized severity scores for psoriasis, which makes it more difficult to compare the current study severity data with that of other publications.

A limitation of the current study is that the observation time was on average just over 10 years after the diagnosis of IBD was made, which means that late cases of psoriasis would be missed. It has, however, been demonstrated that the peak incidence of onset of psoriasis in Sweden is at puberty (14). Since the median age of onset of IBD

in our study is higher than the age for peak incidence of psoriasis in Sweden, it is probably a minority of patients with psoriasis that have been missed.

The major strength of this study is its population-based design. The study supports the association between psoriasis and IBD, and suggests that psoriasis usually manifests before IBD.

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