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Alimentary Tract

Articular manifestations in inflammatory bowel disease patients: A prospective study

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ABSTRACT

Background and aims: Rheumatic manifestations are frequent in inflammatory bowel disease (IBD) and are associated with a wide range of clinical patterns.
Methods: Articular symptoms and signs were investigated by questionnaire in a cohort of 651 pts, mean age 42 ± 14 years, followed at two referral hospitals over a 12-month period.
Results: 142 ulcerative colitis (UC) and 120 Crohn's disease (CD) patients referred articular pain during their IBD history: in 46% this was associated with active IBD, in 56% symptoms were intermittent and in 19% symptoms preceded IBD diagnosis. 62 pts (28 UC, 34 CD) complaining of articular symptoms at the time of the interview, were investigated by the rheumatologist: arthropathy was axial in 52%, oligoarticular in 16% and polyarticular in 23%. Oligoarthritis commonly involved the lower limbs and was more commonly associated with UC. The mean number of small joints involved was significantly higher in CD than in UC pts (9.9 ± 8.2 vs. 5.6 ± 4.3; $p < 0.01$). Bone scintigraphy was abnormal in 70% of pts.
Conclusions: Prevalence of self-reported articular symptoms in IBD patients exceeds 40% with 9.5% incidence during 1-year follow up. Symptoms predict entheropatic involvement of the locomotor system.

1. Introduction

Extraintestinal manifestations occur quite often in inflammatory bowel disease patients, sometimes in combination in different organs such as skin, joints and eyes suggesting a common, perhaps genetic, predisposing factor [1–5]. Arthropathy is by far the most common extraintestinal manifestation with frequency ranging from 4 to 23% depending on the diagnostic criteria used and on patient selection. The occurrence of ankylosing spondylitis seems quite infrequent, whilst peripheral patterns are far more frequent. Peripheral arthropathies may be pauciarticular involving the large joints or polyarticular usually symmetrical and involving preferably the small joints. These arthropathies are usually sero-negative, non-erosive and non-deforming.

Genetic susceptibility to spondyloarthropathy has been advocated since the documentation of an association between HLA-B27 and ankylosing spondylitis, tendinitis or uveitis [6] and postenteritic reactive arthritis [7]. Moreover, some of the identified loci are common to both ulcerative colitis and Crohn's disease whilst others are articular-specific. The relationship genotype–phenotype has been evaluated in a wide population of inflammatory bowel disease patients from Northern Europe [8], but such data are not available in other populations.

Clinical presentation has a very wide spectrum of symptoms which can be transient and mild to persistent and disabling. The course of the disease has been poorly elucidated: with few exceptions articular symptoms are thought to follow the clinical course of inflammatory bowel disease. The frequency of peripheral arthritis seems more common in patients with UC than CD and the occurrence of arthritis is frequently associated with colonic involvement in CD [9].

Aim of the study was to evaluate the clinical spectrum and the prevalence of articular manifestations by interviewing a cohort of inflammatory bowel disease patients and to characterise the type and severity of articular complaints in patients currently symptomatic.

2. Materials and methods

All inflammatory bowel disease patients attending the Gastroenterology Units of the University of Padua and the General Hospital of Vicenza over a 12-month period for acute symptoms or follow-up purposes, were investigated by questionnaire regarding articular symptoms. 651 patients were interviewed and 62 were

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referred for rheumatological evaluation because symptomatic. The rheumatologists performed biochemical and immunological tests, clinical evaluation and plain radiographic evaluation or magnetic resonance of the lumbar spine and hips and total body bone scintigraphy if not otherwise contraindicated.

Patients were instructed to report any acute articular symptom within 1 week from the onset over the following 12 months and received separate evaluation.

The following information was recorded: the type of disease, clinical activity, age at diagnosis, previous surgery, medical therapy and number of months on steroids during the last year.

Each patient was investigated with a self-administered structured questionnaire of 31 items which had been previously validated in a small group of patients. Articular symptoms were accurately characterised as to their site, back pain, morning stiffness, functional impairment, swelling, effusion, tenderness, night awakening and persistency vs. continuity of complaints. Specific questions were aimed at the presence of symptoms with respect to the inflammatory bowel disease diagnosis and the possible association with relapse of the intestinal disease. Symptom severity was assessed indirectly through the need for anti-inflammatory drugs and/or the need for specialist evaluation (rheumatologic and/or orthopaedic).

All patients with joint symptoms at the time of the interview were evaluated by the rheumatologist through history and examination. Clinical signs and symptoms of articular involvement were carefully evaluated and the number and the site of tender and/or swollen joints counted. The sacroiliac joints were assessed by sacroiliac compression tests and modified Schöber's test [10]. Spinal morning stiffness duration expressed in minutes was investigated. Final diagnoses followed the European Spondyloarthropathy Study Group criteria [11]. Ankylosing spondylitis was diagnosed following the modified New York criteria [12].

Total body bone scintigraphy was performed with methyl biphosphonate by Tc-99 in each patient evaluated by the rheumatologist unless contraindicated. The number of involved joints was counted, considering moderate or intense scintigraphic hyperactivity. The distribution of peripheral and axial joint involvement in UC and CD was evaluated clinically and scintigraphically.

All patients were typed for class I HLA antigens by a standard lymphocytotoxicity technique.

Student's *t*-test, chi-square test and Spearmann correlation were used for statistical analyses and a *p*-value of less than 0.05 was regarded as significant. Fisher exact test was applied using contingency tables for HLA antigens of interest, with the Bonferroni correction for multiple comparisons. Data were analysed with the SPSS (version 13, Chicago, IL) and Microsoft Excel program.

3. Results

The characteristics of the 651 patients included in the study are summarised in Table 1. According to the questionnaire, past articular symptoms were referred by 262 patients (142 UC and 120 CD). Pain was localised in the spine in 19% of the patients, in the peripheral joints in 45% and both in the peripheral joints and in the spine in 36% of the interviewed patients (Table 2).

117 patients have had a previous specialist consultation, which accounted for 45% of those referring symptoms. The majority of the patients (87%) had to take extra drugs in order to control articular symptoms (20% non-steroidal anti-inflammatory drugs, 15% steroids and 65% analgesics).

51 patients referred symptoms before the diagnosis of inflammatory bowel disease was made: in 63% of them the main complain was back pain.

Table 1
Demographic and clinical characteristics of the study population.

	UC	CD
Number of patients	385	266
Mean age (years)	44 ± 14	41 ± 13
M/F	215/170	139/127
Mean follow up (years)	11.5 ± 6.9	10.5 ± 6.3
Patients referring past articular symptoms (%)	142 (36.9)	120 (45.1)
Therapy at the time of interview		
Mesalamine (%)	308 (80)	218 (82)
Sulphasalazine	65 (17)	26 (10)
Azathioprine	30 (8)	37 (14)
Steroids	81 (21)	50 (19)
Other drugs	46 (12)	66 (25)

Concomitant active intestinal disease was present in 60% of the patients with oligoarticular symptoms and 50% of the patients with polyarticular or axial symptoms.

3.1. Clinical evaluation of arthropathy

Sixty-two patients referred current articular symptoms and were evaluated by the rheumatologist who classified arthropathy as follows: 32 (52%) axial arthropathy, 24 peripheral arthropathy (14 (23%) polyarticular and 10 (16%) oligoarticular), 3 fibromyalgia, 2 localised tendinitis and 1 arthralgia (Table 3). Ankylosing spondylitis was present in 9 patients (7 of them were men, 5 had CD and 4 UC); these patients were included in the axial group.

Axial arthropathy was more frequent in CD (20 pts) than in UC (12 pts). Peripheral arthropathy was polyarticular in CD and was exclusively seen in patients with ileal or ileocolonic localisation. Oligoarticular symptoms were more frequent in UC (8 pts) vs. CD (2 pts) and involved the joints of the lower limbs in 9 out of 10 patients. Symmetrical arthritis had been present in 9 patients (14.5%).

Male gender was not associated with higher frequency of axial arthropathy, except for the subgroup suffering from ankylosing spondylitis (7 out of 9 patients).

Amongst the patients referring small joint symptoms 64% had CD with a significantly higher number of metacarpophalangeal,

Table 2
Phenotypic characteristics of articular pain, their management and IBD-related features in the 262 patients with past articular symptoms.

Question	% of patients with positive answers
Where was the pain located?	
Spine	19
Joints	45
Both spine and joints	36
Was the pain intermittent?	56
Was the pain continuous?	44
Did you have had any specialist consultation for your symptoms?	45
Did you take extra drugs to relieve your articular symptoms?	87
Which of the following drugs did you assume?	
Non-steroidal anti-inflammatory drugs	20
Steroids	15
Analgesics	65
Did you recall having had pain in the joints before the IBD diagnosis?	19
Was the pain in the joints?	37
Was it low back pain or pain in the spine?	63
At the time you suffer from articular symptoms did you have bowel symptoms as well?	46