Journal of Gastrointestinal & Digestive System

Roussou et al., J Gastroint Dig Syst 2012, 2:4
DOI: 10.4172/2161-069X.1000113

Research Article Open Access

Comparison of Enteropathic Spondyloarthritis and Ankylosing Spondylitis (Differences in the Clinical Characteristics, Complaints and Gender)

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Abstract

Objectives: To assess differences in patients with Ankyosing Spondylitis (AS) and Enteropathic Spondyloarthritis (ESpA) with regards to musculoskeletal symptoms at presentation and the main musculoskeletal problems during the disease course. The patients' demographic data and clinical characteristics were also compared.

Methods: Following clinical assessment, patients with AS and ESpA were asked to respond to a validated screening questionnaire, choosing from a list of seven musculoskeletal symptoms potentially present at disease onset (back pain, neck pain, shoulder pain, hip pain, knee pain, buttock pain, and foot pain) and another seven symptoms known to be associated with SpAs (fatigue, neck pain, upper back pain, lower back pain, stiffness, joint pains/swelling, and pain with pressure [enthesitis]). More than one symptom could be reported by each patient.

Results: In total, 124 patients were included in the study. They were 84 patients diagnosed with AS (M:F = 41:43 or 48.8%:51.2%; age = 43.4 ± 12.8 years), and 40 patients had ESpA (M:F = 9:31 or 22.5%:77.5%; age [mean ± SD] = 49.6 ± 14.1 years). In the ESpA group there were included 12 patients with Crohn's disease and 28 patients with ulcerative colitis.

The two groups had similar disease profiles, with the only exceptions the delay in diagnosis, which was significantly shorter for ESpA than for AS ($P < 0.05$), and enthesitis pain, which was significantly greater for ESpA than for AS ($P < 0.05$). Only two patients were HLA-B27$^+$ in the ESpA group (7.1% of those tested) compared with 37.7% in the AS group.

ESpA patients had more peripheral disease at presentation (knees, feet, shoulders) than the AS patients, although both groups reported back pain as the main symptom at disease onset (57% with entero SpA and 70% with AS).

ESpA patients continued to report joint pains as the main problem during the disease course (68.6% versus 44.9% in AS patients) compared with low back pain reported as the main problem by AS patients (57.1% for ESpA and 70.5% for AS).

Conclusion: ESpA patients had more peripheral disease at presentation and during the disease course than AS patients, a shorter delay in diagnosis, more enthesitis, and no HLA-B27 association.

Keywords: Inflammatory bowel diseases; Spondyloarthritis; Extra-intestinal manifestations; Ulcerative colitis; Crohn's disease; Ankylosing spondylitis

Introduction

Crohn's disease (CD) and ulcerative colitis (UC) are chronic relapsing inflammatory bowel diseases (IBDs) that can be associated with joint disease as an extra-intestinal manifestation [1]. The relationship between gut and musculoskeletal inflammation has long been recognized [2-6].

The arthritis related to IBD is called enteropathic (E) arthritis and belongs to the spondyloarthritis (SpA) spectrum of diseases, suggesting that the disease affects both the spine (Spondylo-) and the peripheral joints (-arthritis) [7].

The ESpA sub-group usually satisfies the criteria for SpA defined by the European Spondyloarthritis Study Group (ESSG) [8], displaying low back pain and IBD. However, patients sometimes develop one or more SpA-related manifestations without fulfilling any of the SpA classification criteria [9].

The first aim of this study was to assess the differences between AS and ESpA in terms of demographic (race, age at onset, gender) and clinical characteristics (symptoms at onset, delay in diagnosis, disease activity and extra-articular manifestations).

The second aim was to assess the differences in musculoskeletal symptoms in AS and ESpA at onset and during the course of the disease and to determine what symptoms patients find most problematic.

Final aim was to assess differences from the musculoskeletal system at presentation and during disease course between genders.

Patients and Methods

Consecutive patients with AS and ESpA seen in our outpatients' clinics between 2004 and 2009 were invited to participate in the study, and only those consented and fulfilled criteria were included.

In the AS group, all the patients fulfilled the modified New York criteria for AS [10] while in the ESpA group, all the patients with IBD fulfilled the ESSG criteria for SpA [8].

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Received October 20, 2011; **Accepted** June 18, 2012; **Published** June 20, 2012

Citation: Roussou E, Georgiou A, Lee R (2012) Comparison of Enteropathic Spondyloarthritis and Ankylosing Spondylitis (Differences in the Clinical Characteristics, Complaints and Gender). J Gastroint Dig Syst 2:113. doi:10.4172/2161-069X.1000113

The enteropathy of every patient with IBD was assessed as patients were under the joint care of a gastroenterologist based at our hospital. When patients with evidence of undiagnosed IBD presented with musculoskeletal symptoms to a rheumatologist first, a referral was made to our gastroenterology department to confirm or exclude IBD. This study was registered with our Research and Development Department and ethics approval was obtained from the local Ethics Committee.

All patients were initially assessed clinically. Particular emphasis was given to SpA associations such as uveitis, and psoriasis. Further information was obtained with a screening questionnaire given when they first presented at the clinic. The questionnaire was standardised and previously validated including questions about their gender, race, age, age at disease onset, and age at diagnosis. By "diagnosis", we refer to their musculoskeletal disease. Disease duration was calculated by subtracting the date of the reported disease onset from the date of questionnaire completion, and the delay in diagnosis was calculated by subtracting the year (or age) of disease onset from the year (or age) of disease diagnosis. Human leukocyte antigen B27 (HLA-B27) testing was requested according to clinical need.

Disease activity was assessed with the Bath Ankylosing Spondylitis Disease Activity Index (BASDAI) [11], erythrocyte sedimentation rate (ESR), and C-reactive protein (CRP) level. Functional ability was assessed with the Bath Ankylosing Spondylitis Functional Index (BASFI) [12].

Patients global disease activity was assessed for the preceding week and the preceding 6 months with a 10 cm visual analogue scale (VAS): 0 represented the best possible health and 10 represented the worst possible health. Night pain was also assessed on a similar 0-10 VAS.

Treatment was assessed with a questionnaire. Patients were given a list of treatment options in which the following medications were listed: pain killers, non-steroidal anti-inflammatory drugs (NSAIDs), sulfasalazine (SZP), methotrexate (MTX), leflunomide, cyclosporin A, and tumor necrosis factor α (TNFα) inhibitors.

All the patients were asked to report which of seven musculoskeletal symptoms that can be present at disease onset (back pain, neck pain, shoulder pain, hip pain, knee pain, buttock pain, and foot pain) were present when the disease (in the musculoskeletal system) started. More than one symptom could be reported by each patient.

The main musculoskeletal complaints during the course of the disease were determined from a list of seven symptoms, the patients were asked to choose from, from those that affected them the most

	AS n = 84	EnteroSpA n = 40 (CD: n = 12; UC: n = 28)	Statistical significance
Sex (M/F)	41:43	9:31 (CD: 3:9; UC: 6:22)	0.005
Race (n=nr) M/F Caucasians Asians Africans Mixed	 (n=39); 18:21 (n=35); 17: 18 (n=11); 6:5 0	 (n= 18); 3: 15 (n=14); 5: 9 (n=7); 1: 6 (n=1) 0:1	
Age (mean ± SD)	49.6 ± 14.1)	43.4 ± 12.8)	NS
Age at diagnosis (mean ± SD)	37.8 14	45 ± 13.7	NS
Disease duration	11.5 ± 9.7	9.3 12.7	NS
Delay in diagnosis	7.1 ± 6.5	4.1 ± 5.8	0.01
HLA-B27 Positive Negative Not done	 23/84 (27.3%) 38/84 (45.2%) 23/84 (27.3%)	 2/40 (5%) 26/40 (65%) 12/40 (30%)	
Enthesitis pain	25/77 (32.5%)	14/35 (40%)	0.02
Associated iritis	24/80 (30%)	12/40 (30%) [CD n=4; UC n=8)	
Associated psoriasis	4/80 (5%)	3/40 (7.5%) [CD n=2; UC n=1)	
Night pain	6.1 ± 2.8	5.7 ± 3.2	NS
BASDAI score (mean ± SD)	6.2 ± 1.7	5.7 ± 1.9	NS
ESR	16.2 ± 17	21.5 ± 18	NS
CRP	7.4 ± 7.9	10.8 14.5	NS
BASFI score (mean ± SD)	4.8 ± 2.7	4.7 ± 2.9	NS
Wbw	5.6 ± 2.6	5.6 2.7	NS
Wb6m	6.3 ± 2.4	6.2 2.7	NS
Subjects on medication (yes / from total responders)	66 / 78 (84.6 %)	24/40 (58.5%)	**0.005**
Pain killers	57 /76 (75%)	21/40 (51.2%)	**0.05**
NSAIDs	22 /76 (28.9%)	5 /40 (12.2%)	**NS***
Steroids	5/73 (6.9%)	5/ 40 (12.2%)	**NS**
SZP	4/74 (4.7%)	9 /40 (22%)	**0.01**
MTX	2/72 (2.8%)	2 / 20 (4.9%)	**NS**
aTNF-α	2/72 (2.8%)	0 /40	**NS**

: The first number in the second column represents the number of individuals on the treatment shown in the first column; the second number represents the total number of responders; and the third number represents the percentage.
AS: Ankylosing spondylitis; EnteroSpA: enteropathic spondyloarthritis; CD: Crohn's disease; UC: ulcerative colitis. M: males; F: females.
SD = standard deviation; ESR = erythrocyte sedimentation rate; CRP = C-reactive protein.
Wbw = well-being over the preceding week; Wb6m = well-being over the preceding 6 months.
NSAIDs: non-steroidal anti-inflammatory drugs; SZP: sulfasalazine; MTX: methotrexate; aTNF = anti-tumor necrosis factor α.
*borderline

Table 1: Demographic data and clinical characteristics and medication at the time of assessment of patients with enteropathic SpA and AS.

	AS	Ranking of MUSCULOSKELETAL symptoms for AS	Enteropathic SpA	Ranking of MUSCULOSKELETAL symptoms for Enteropathic SpA	Statistical Significance (t- test)
Back Pain	57/77 (70)	1	20/35 (57)	1	NS
Neck Pain	28/78 (35.9)	2	13/35 (37.1)	4	NS
Shoulder Pain	22/77 (28.6)	3	17/35 (48.6)	3	0.001
Hip Pain	19/77 (24.7)	4	10/35 (28.6)	6	0.01
Knee Pain	17/77 (22.1)	5	18/35 (51.4)	2	0.004
Buttock Pain	17/78 (21.8)	6	7/35 (20%)	7	NS
Foot Pain	10/77 (13)	7	11/35 (31.4)	5	0.02

Table 2: Presenting symptoms for AS and enteropathic SpA patients, the frequencies of musculoskeletal symptoms at presentation and the differences between the two groups.

strongly. These were: fatigue, neck pain, upper back pain, lower back pain, stiffness, joint pain or swelling, or pain with pressure in any joint. Similarly more than one symptom could be reported by each patient

Statistical Analysis

The descriptive data are expressed as means ± standard deviations (SD). The statistical analysis was performed with the programme SPSS for Windows, using χ^2 to test the associations between categorical data, and nonparametric tests (*t* test and the Wilcoxon rank sum test) to assess statistically significant differences between two groups. Regression analysis was used to identify correlations between the disease characteristics in each group.

Results

In total, 124 patients were evaluated and their data were compared. Some patients data were missing from both groups of patients because patients had left the question unanswered and subsequently lost follow up.

Eighty-four patients had AS and 40 (1/3 of the total group) patients had ESpA (Table 1). Twelve patients in the ESpA group had CD (M:F = 3:9) and 28 patients had UC (M:F = 6:22).

Demographic and clinical features

Most patients were female in both AS and the ESpA groups (total group, M:F = 50:74; AS, M:F = 41:43; ESpA, M:F = 9:31). The mean age at the time of assessment was greater for the AS group (49.6 years for the AS group versus 43.4 years for the ESpA group). Patients in the AS group were younger at the time of diagnosis (37.8 years for AS versus 45 years for ESpA, respectively). There was a significant difference in the delay in diagnosis between the two groups, with a more delayed diagnosis in the AS group (11.5 years for AS and 9.3 years for ESpA; $P < 0.05$).

No difference was found in the age at disease onset, age at diagnosis, or delay in diagnosis according to race.

Significantly fewer patients were positive for HLA-B27 in the ESpA group (7.1% of those tested) than in the AS group [(37.7% of those tested) ($p<0.005$)] (Table 1), and the ESpA group status resembled that of the normal population.

Disease associations

In the total AS group 24 of 85 patients (27.9%) reported eye inflammation compared to 15 of 40 patients in the ESpA group, (36.6%). There were 6 patients with CD (15%) and 9 patients with UC (22.5%).

Psoriasis identified in 17 of the 85 patients (19.8%) in the AS group compared to 6 of the 40 patients in the ESpA group (14.6%). There were 2 patients with CD and 4 patients with UC.

Both, eye involvement and psoriasis reported by 7 patients with AS (6 of them Caucasians), a single patient had both eye involvement and psoriasis in the ESpA group.

Disease activity

Both laboratory indices (ESR and CRP) were lower for the AS group (mean ESR of 16.2 mmHg for AS versus 21.5 mmHg for ESpA and mean CRP of 7.4 mg/L for the AS group versus 10.8 mg/L for the ESpAgroup) suggesting increased activity in the ESpA group. The differences however between the 2 groups in both laboratory indices were not significant. The mean BASDAI score was higher for the AS group (6.2 vs 5.7 for the enteroSpA group). Similarly, all the individual BASDAI items were higher for the AS group.

Functional ability

Similar functional abilities, assessed with BASFI, were demonstrable for both groups (4.8 for the AS group vs 4.7 for the enteroSpA group) (p=0.2).

Global disease activity (Well-being)

No difference in the well-being over the preceding week or well-being over the preceding 6 months was identified between the two groups, (p=0.2) but night pain was given a greater value on the VAS by the AS group than by the ESpA group (6.1 vs 5.7, respectively) which however was not statistically significant (p=0.3).

Treatment

Overall, more patients with AS (84.6%) were receiving treatment than patients with ESpA (58.5%; $P < 0.05$), with significantly more AS patients on pain killers (75% versus 51.2%, respectively; $P < 0.05$) and significantly more ESpA patients on SZP (4.7% versus 22%, respectively; $P < 0.05$). The difference in NSAID intake reported by both groups showed borderline statistical significance (p=0.046).

A summary of the patients' demographic data, the clinical characteristics and the treatment that patients were receiving at the time of assessment of the two groups, and the statistically significant differences between them is shown in Table 1.

Musculoskeletal symptoms at presentation

Patients from both groups reported back pain as the most frequent symptom at presentation (70% of AS and 57% of ESpA patients; $P = 0.7$). Although AS patients reported neck pain as the second most frequent symptom (35.9% of patients), ESpA patients (51.4%) reported knee pain as the second most frequent symptom, whereas knee pain was reported by only 22.1% of AS patients ($P = 0.004$ Wilcoxon rank sum), which was ranked fifth in frequency by the AS group. Shoulder pain although was reported with the third highest frequency by both groups (26.6% of AS patients and 48.6% of ESpA patients) showed statistical significant

difference (P = 0.01 Wilcoxon rank sum) between the 2 groups of patients suggesting greater frequency of shoulder involvement for ESpA patients. Neck pain was reported with the fourth highest frequency by ESpA patients (37.1%), but the difference between the two groups was not significant (35.9% reported by AS) (p=0.89). Hip pain was reported by 24.7% of AS patients and 28.6% of ESpA patients and the difference was statistically significant (p<0.05). Finally, foot pain was reported by significantly more ESpA patients (31.4%) than AS patients (13%; P = 0.02). The frequency of musculoskeletal symptoms at presentation, the relative frequencies at which each symptom was observed, and the differences between the two groups are shown in Table 2.

Main musculoskeletal symptom the disease is causing to patients

More AS patients reported back pain as their main musculoskeletal symptom (70.5% vs 57.1% for the ESpA group; P = 0.07), that the disease is causing to them, whereas the ESpA patients reported predominant joint pain (68.6 % vs 44.9%, respectively; P = 0.02). Fatigue was rated high in the ranking by both groups, second for the ESpA group and third for the AS group (62.9% vs 55.8%, respectively; P = 0.4). Pain with pressure, suggesting enthesitis, was reported by 40 % of patients with ESpA (14 of 35) compared with 32.5% of patients with AS (25 of 77) (P = 0.02). Table 3 shows the frequencies of the main problems, their ranking, and their significant differences in the two groups.

	AS	Ranking	EnteroSpA	Ranking	Significance (t-test)
Low back pain	55/78 (70.5%)	1	20/35 (57.1%)	3	NS
Stiffness	46/76 (58.2%)	2	15/35 (42.9%)	4	NS
Fatigue	43/77 (55.8%)	3	22/35 (62.9%)	2	NS
Upper back pain	38/78 (48.7%)	4	12/35 (34.3%)	6	0.06
Neck pain	37/78 (47.4%)	5	14/35 (40%)	5	NS
Joint pains	35/78 (44.9%)	6	24/35 (68.6%)	1	0.02
Pain with pressure	25/77 (32.5%)	7	14/35 (40%)	5	0.02

Table 3: Main problems that the disease caused the patients with AS and ESpA.

When we considered the possible associations between the demographic characteristics, clinical characteristics, and disease activity and functioning of the two groups, night pain was associated with age (p=0.002) and age at diagnosis (p=0.01) in the ESpA group and with age at diagnosis (p=0.001) in the AS group. CRP was associated with the total BASDAI score in the ESpA group (p=0.05) and with BASDAI item 5, (morning stiffness) (p= 0.009), whereas no such associations were seen in the AS patients. In contrast, the total BASFI score was associated with disease duration in the AS group (P = 0.006) but not in the ESpA group.

Men and women in the AS and enteropathic SpA groups

Table 4 shows the demographic and clinical characteristics of the men and women in the AS and ESpA groups. The delay in diagnosis was significantly different not only between the AS and ESpA patients but also between the genders within the ESpA group, at 0.4 years (± 0.5) for men and 4.7 years (± 6.3) for women (p<0.005). The two patients of the ESpA group who were HLA-B27$^+$ included one man and one woman.

The presenting musculoskeletal symptoms in the AS group were similar for men and women, with the only difference seen in buttock pain, which was reported by 11 of 38 men (28.9%) but by only six of 40 women (15%). Knee pain and back pain were the most common presenting symptoms among females in the ESpA group, both being

	AS men (n=41)	AS women (n=43)	Statistical significance	enteroSpA men (n=9)	Entero SpA women (n=31)	Statistical significance
Age (mean ± sd)	42.1 ± 11.9	44.6 ±13.7	NS	47.8 ± 13.6	48.1 ±13.4	NS
Age at diagnosis (mean ± sd) YEARS	37.3 ± 14	36.8 ±14.2	NS	41.8 ± 10	42.9 ±13.8	NS
Disease duration (mean ± sd) YEARS	10.9 ± 9.5	12.9 ± 9.9	NS	6.6 ± 5.4	10.2 ±13.8	NS
Delay in diagnosis (mean ± sd) YEARS	6.4 ± 5.5	7.7 ± 7.3	NS	0.4 ± 0.5	4.7 ± 6.3	0.005
Night pain (mean ± sd) cm	6 ± 2.8	6.3 ± 2.8	NS	6.1 ± 3.7	5.8 ± 3.0	NS
BASDAI score	5.6 ± 1.7	6.7 ± 1.6	0.005	5.7 ± 2.3	5.5 ± 1.9	NS
ESR	12 ± 14.9	19.9 ±18.5	NS	14.5 ± 8.3	23.6 ±20.5	NS
CRP	8.6 ± 10.6	6.2 ± 4.1	NS	6.1 ± 3.9	12.5 ±16.5	NS
BASFI score	4.2 ± 2.5	5.3 ± 2.7	NS	4.8 ± 2.5	4.6 ± 3	NS
Wbw	5.5 ± 2.2	5.7 ± 2.9	NS	5.5 ± 2.3	5.6 ± 2.8	NS
Wb6m	6.3 ± 2.2	6.3 ± 2.6	NS	4.7 ± 3.3	6.6 ± 2.3	NS

AS: ankylosing spondylitis; EnteroSpA: enteropathic spondyloarthritis; CD: Crohn's disease; UC: ulcerative colitis. M: males, F: females.
SD = standard deviation; ESR = erythrocyte sedimentation rate; CRP = C-reactive protein.
Wbw = well-being over the preceding week; Wb6m = well-being over the preceding 6 months.

Table 4: Demographic and clinical characteristics of the men and women with enteroSpA SpA or AS.

	Ankylosing Spondylitis				Enteropathic Spondyloarthritis			
	Men	Ranking	women	ranking	Men	ranking	women	Ranking
Back pain	26/37 (70.3%)	1	28/40 (70%)	1	5/7 (71.4%)	1	14/27 (51.9%)	1
Neck pain	11/37 (29.7%)	2	18/40 (43.9%)	2	5/7 (71.4%)	1	7/27 (25.9%)	3
Shoulder pan	10/37 (27%)	4	12/40 (30%)	3	4/7 (57.1%)	2	13/27 (48.1%)	2
Hip pain	10/37 (27%)	4	9/40 (22.5%)	4	2/7 (28.6%)	4	7/27 (25/9%)	3
Knee pain	9/37 (24.3%)	5	8/40 (20%)	5	3/7 (42.9%)	3	14/27 (51.9%)	1
Buttock pain	11/38 (28.9%)	3	6/40 (15%)	6	2/7 (28.6%)	4	5/27 (18.5%)	4
Foot pain	6/37 (16.2%)	6	4/40 (10%)	7	3/7 (42.9%)	3	7/27 (25.9%)	3

Table 5: First-presenting symptom in the musculoskeletal system and the frequency of each first-presenting symptom in men and women.

	Ankylosing Spondylitis				Enteropathic Spondyloarthritis			
	Men	Ranking	women	ranking	Men	ranking	women	Ranking
Low Back pain	28 / 38 (73.7 %)	1	27 / 40 (67.5 %)	1	3 / 7 (42.9 %)	3	16 / 27 (59.3 %)	2
Stiffness	23 / 38 (60.5 %)	2	23 / 41 (56.1 %)	2	4 / 7 (57.1 %)	2	11 / 27 (40.7 %)	3
Fatigue	22 / 36 (61.1 %)	3	21 / 41 (51.2 %)	3	4 / 7 (57.1 %)	2	18 / 27 (66.7 %)	1
Upper back pain	18 / 37 (48.6 %)	4	20 / 41 (48.8 %)	4	3 / 7 (42.9 %)	3	8 / 27 (29. 6 %)	5
Neck pain	17 / 38 (44.7 %)	5	20 / 40 (50 %)	4	3/7 (42.9 %)	3	10 / 27 (37 %)	4
Joint pains	18 / 37 (48.6 %)	4	17 / 41 (41.5 %)	5	5 / 7 (71.4 %)	1	18 / 27 (66.7 %)	1
Pain with pressure	13 / 37 (35.1 %)	6	12 / 40 (30 %)	6	2 / 7 (28.6 %)	4	11 / 27 (40.7 %)	3

Table 6: Main problem that the disease caused male and female patients with AS or ESpA and the frequency of each complaint.

reported by 14 of 27 patients (51.9%). This was closely followed by shoulder pain, in 13 of 27 patients (48.1%). Hip, neck, and foot pain were all reported by seven of the 27 patients (25.9%). Table 5 shows the numbers of patients (and their percentages) who reported each symptom at presentation among the men and women of both groups.

AS patients predominantly reported back pain as the main problem caused by the disease [28 of 38 (73.7%) men and 27 of 40 (67.5%) women], followed by stiffness [23 of 38 (60.5%) men and 23 of 40 (56.1%) women]. However, ESpA patients predominantly reported joint pains [five of seven (71.4%) men and 18 of 27 (66.7%) women] and fatigue [four of seven (57.1%) men and 11 of 27 (40.7%) women] as their main problems. The details for each of these main symptoms being troublesome to patients and the differences in them between men and women are shown in Table 6.

Discussion

We have presented here the results of a study assessing enteropathic SpA. We examined how the disease presents in terms of age at disease onset, delay in diagnosis, clinical activity, main musculoskeletal complaint at presentation, and main problem during the course of the disease. We looked at differences between AS and ESpA patients with regards to clinical characteristics, musculoskeletal complaints and gender. Our patients represented a random unselected cohort seen in an outpatients' department.

The first finding in our cohort was that twice as many UC patients than patients with CD complained of musculoskeletal symptoms. This is consistent with the incidence and prevalence reported for IBD when the musculoskeletal involvement is not considered [13] and is similar to the results reported for a population-based inception cohort of IBD patients with musculoskeletal manifestations [9]. Our results differ from those of a Belgian cohort of 103 patients, among whom 78 had CD and 25 had UC [14]. However, as admitted by the authors, that cohort was drawn from a tertiary referral centre for surgery, suggesting that the disease was worse in CD patients than in UC patients before the era of TNFα inhibitors.

We have reported the results for a predominantly female cohort (77.5% of the ESpA group and 51.2% of the AS group), which cannot be accurately extrapolated to estimate the female prevalence of the disease because the sample was biased by the multi-cultural multi-ethnic population reviewed. This arose because female patients of certain cultural beliefs prefer female consultants. However, it is worth noting that a population-based inception cohort multi-ethnic European study found that the risk of musculoskeletal manifestations in patients with IBD was three times higher in women than men [9].

Our results show that although the mean age of the ESpA cohort was lower than that of the AS group, the mean age at the diagnosis of ESpA was 7-8 years higher than that at the diagnosis of AS, so the average age at the diagnosis of ESpA was 45 years, which is in the range reported for the diagnosis of IBD in North America [13]. If we take into account the average delay in diagnosis of 4 years, the average age of musculoskeletal disease onset in ESpA is approximately 40 years, which is 15-20 years later than that known for AS [15], and differs from the corresponding age extrapolated from the German registry in which no difference noted in the distribution of the age at disease onset between AS and ESpA [16].

HLA-B27 positivity was less frequent (it detected only in two patients representing 5% of the total and 7.1% of those tested) in our ESpA group than in the AS group, which is consistent with previous reports [9,17]. HLA-B27 positivity is considered a risk factor for the development of IBD in patients with AS [18]. Whether this association with HLA-B27 refers to a different, perhaps more AS-type cohort of patients suffering with ESpA disease is questionable and cannot be inferred from this study. The multi-ethnic population from which these data have been drawn may have also contributed to this discrepancy.

Associated eye involvement (iritis) was reported with greater frequency by the ESpA group than by the AS group in our cohort, like the higher frequency reported previously, although the association did not reach the 45% frequency reported earlier [19].

The disease activity was milder in the ESpA group than in the AS group, in terms of both the BASDAI and night pain, whereas well-being and the response to treatment were similar in the two groups. This finding may have been influenced by the fact that ESpA patients had axial and peripheral disease, whereas the BASDAI is an instrument predominantly used for AS and has not been found to accurately reflect disease activity in SpAs [20]. However, enthesitis pain was reported significantly more frequently by the ESpA patients, as reported previously [9].

When we considered the musculoskeletal symptoms at presentation, both the ESpA and AS groups predominantly reported back pain at presentation. This was followed by the involvement of the large peripheral joints, such as the knees and shoulders, in the enteropathic group. However, foot pain, which is more often reported by psoriatic arthritic patients [21], was the fifth highest ranking pain in the ESpA group. Peripheral large-joint oligo-articular disease is thought to constitute type 1 arthritis, in contrast to type 2 small-joint arthropathy [17]. In our study, knee and shoulder arthritis were reported as the second and third most frequent symptoms at disease onset, respectively. However, the question we posed to patients referred to joint pains in general, aiming to differentiate peripheral and axial disease but without distinguishing whether the arthritis involved the small or large joints. Therefore, we are unable to comment on the joints that are most troublesome during the disease course or whether the musculoskeletal pattern changes as the disease progresses. However, fatigue ranked high and seemed equally troublesome for both ESpA and AS patients.

Similar numbers of men and women with AS were included in this

study, allowing comparisons to be made between the sexes suffering this disease. However, in the ESpA group, the number of women was threefold higher than the number of men, and the differences between the two sexes may not accurately reflect disease differences, particularly with regard to the men's group, which was less represented in this sub-group. Studies with larger numbers of patients will allow clearer distinctions to be made between the sexes in the sub-groups of patients with SpAs.

In conclusion, patients with enteropathic SpA experience disease onset later in life than do AS patients. They also have a less delayed diagnosis and more peripheral joint disease at presentation, despite the fact that both groups reported back pain as the main symptom at disease onset. Joint pains were the predominant musculoskeletal symptom, and enthesitis was seen significantly more often in patients with ESpA than in AS patients.

Disclosures

Euthalia Roussou none, Andreas Georgiou none, Rebecca Lee none

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