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POS0964

CHARACTERISTICS AND BURDEN OF DISEASE IN PATIENTS WITH RADIOGRAPHIC VERSUS NON-RADIOGRAPHIC AXIAL SPONDYLOARTHRITIS IN THE ANKYLOSING SPONDYLITIS REGISTRY OF IRELAND COHORT

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Background: Axial spondyloarthritis (axSpA) is an umbrella term for types of inflammatory arthritis that primarily affect the spine and the sacroiliac joints. It is comprised of patients with both radiographic (r-axSpA) and non-radiographic features (nr-axSpA). R-axSpA was historically known as Ankylosing Spondylitis. Previous studies have shown the burden of disease to be largely similar in patients with radiographic versus non-radiographic axial spondyloarthritis in cohorts both in the US and Europe [1]. The Ankylosing Spondylitis Registry of Ireland (ASRI) was formed with the objective to measure the burden of axial spondyloarthritis in the population and identify early predictors of a poor outcome. All patients in the registry are 18 years or older and meet Assessment of Spondyloarthritis International Society (ASAS) criteria for a diagnosis of SpA.

Objectives: To compare the characteristics and burden of disease in patients with radiographic versus non-radiographic axial spondyloarthritis in the ASRI cohort.

Methods: Patients with radiographic axial spondyloarthritis (r-axSpA) were defined as those with x-ray evidence of sacroiliitis. Patients with non-radiographic axial spondyloarthritis (nr-axSpA) were defined as having MRI evidence of sacroiliitis but no x-ray evidence of sacroiliitis. A standardised clinical assessment was performed on each patient and structured interviews provided patient-reported data. For each patient the following scores were captured: Bath Ankylosing Spondylitis Disease Activity Index (BASDAI), Bath Ankylosing Spondylitis Functional Index (BASFI), Bath Ankylosing Spondylitis Metrology Index (BASMI), Health Assessment Questionnaire (HAQ) assesses the self-reported functional status for performing activities of daily living, and the Ankylosing Spondylitis Quality of Life (ASQoL) questionnaire. Categorical variables were summarized as percentages with frequency counts, and continuous variables with a mean and standard deviation. Statistical comparisons between subgroups were evaluated using 2 sample t-tests for continuous variables and chi-square tests for categorical variables.

Results: 764 patients were available for analysis. Analysis of radiographic status showed 88.1% (n=673) of patients with r-axSpA and 11.9% (n=91) with nr-axSpA. Patients with nr-axSpA were younger (41.3 vs. 46.6 years, $p<0.01$), had shorter disease duration (14.8 vs. 20.2 years, $p<0.01$), lower proportion of males (66.6% vs. 78.4%, $p=0.02$) with lower rates of HLA-B27 positivity (73.6% vs. 90.5%, $p<0.01$). The nr-axSpA group had lower BASDAI (3.37 vs. 4.05, $p=0.01$), BASFI (2.46 vs. 3.88, $p<0.01$), BASMI (2.33 vs. 4.34, $p<0.01$), ASQoL (5.2 vs. 6.67, $p=0.02$), and HAQ scores (0.38 vs. 0.57, $p<0.01$). There were no significant differences in the prevalence of extra-articular manifestations.

Conclusion: This study provides evidence that the burden of disease is less in patients with non-radiographic axial spondyloarthritis than radiographic axial spondyloarthritis, as demonstrated by better BASDAI, BASFI, BASMI, HAQ and ASQoL scores.

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Table 1.

	r-axSpA	nr-axSpA	p value
n	673	91	
Age (years)	46.6 (+/-12.4)	41.3 (+/-12.4)	<0.01
Disease duration (years)	20.2 (+/-12.4)	14.8 (+/-11.7)	<0.01
Delay to diagnosis (years)	8.41 (+/-8.6)	6.34 (+/-7.2)	0.03
Males	78.8% (528)	65.9% (60)	0.02
Females	21.5% (145)	34.1% (31)	0.02
HLA-B27+	90.50% (440 of 486 available results)	73.60% (53 of 72 available results)	<0.01
BASDAI	4.05 (+/-2.39)	3.37 (+/-2.31)	0.01
BASFI	3.88 (+/-3.00)	2.46 (+/-2.39)	<0.01
BASMI	4.34 (+/-2.08)	2.33 (+/-1.42)	<0.01
ASQoL	6.67 (+/-5.55)	5.2 (+/-5.53)	0.02
HAQ	0.57 (+/-0.54)	0.38 (+/-0.44)	<0.01
Psoriasis	17.8% (120)	15.4% (14)	0.31
IBD	11% (74)	8.8% (8)	0.58
Uveitis	33.9% (228)	34.1% (31)	0.54

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POS0965

ARE SMOKING AND ALCOHOL ASSOCIATED WITH PERIPHERAL MUSCULOSKELETAL INVOLVEMENT IN PATIENTS WITH SPONDYLOARTHRITIS? RESULTS FROM THE ASAS-PERSPA STUDY

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Background: The harmful effect of smoking on axial spondyloarthritis (axSpA) in relation to radiographic progression is well known, but there are controversies around the role of cigarettes in other manifestations of SpA, such as peripheral involvement. Besides, it has been observed an inverse association between alcohol consumption and disease activity and functional impairment¹, although it is still unclear its association with peripheral manifestations of SpA.

Objectives: To evaluate the association between smoking/alcohol intake and the prevalence of peripheral articular manifestations (arthritis, enthesitis or dactylitis).

To assess the association between smoking/alcohol intake and the location of such manifestations.

Methods: Patients from the cross-sectional ASAS-PerSpA study with available data for both the smoking status and alcohol intake were included. Mixed logistic regressions using the peripheral manifestation (or location) as dependent variable, the smoking status or alcohol intake as fixed effect and the country as random effect were used. The interaction between smoking and alcohol was tested.

Results: A total of 4451 patients with either axSpA, peripheral SpA or Psoriatic Arthritis were included. 59.5% had smoked at any moment and 42.7% had been alcohol drinkers. Patients who had ever suffered arthritis showed lower frequency of smoking habit (OR 0.72, 95%CI 0.63-0.82) and lower alcohol intake (OR 0.82, 95%CI 0.71-0.94) (Table 1). Among patients with arthritis, smoking was associated with predominantly upper limbs vs. lower limbs involvement (OR 0.78, 95%CI 0.65-0.94), while alcohol was associated with predominant mono/oligoarticular vs. polyarticular involvement (OR 1.13, 95%CI 0.94-1.36). Patients who had ever suffered enthesitis also showed lower frequency of smoking habit and alcohol intake (OR 0.75, 95%CI 0.63-0.89 and OR 0.69, 95%CI 0.57-0.83, respectively). No association was found with regard to the prevalence of dactylitis. At the moment of the study visit, 20.4% patients were current smokers and 32.2% consumed alcohol. Current alcohol intake was associated with lower prevalence of current arthritis (26.9% vs. 33.6% (OR 0.76, 95%CI 0.64-0.91) and current enthesitis (21.1% vs. 34.6% (OR 0.78, 95%CI 0.62-0.96), while current smoking did not show significant differences.

No interaction was found in the association between alcohol and tobacco with regard to the prevalence of peripheral symptoms in the past. However, when assessing current arthritis, current smoking and no drinking was associated with arthritis in the lower limbs.

Conclusion: These results suggest that, taking into account the country, smoking and alcohol are associated with lower prevalence of peripheral manifestations (arthritis

and enthesitis), with no interaction effect between both habits. Smoking seems to be associated with predominantly upper limbs arthritis while alcohol intake seems to be associated with a predominantly oligo/mono articular involvement. Future studies are required including the influence of psoriasis and psoriatic arthritis in the relationship between alcohol and smoking and its association with peripheral manifestations.

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Table 1. Association between peripheral musculoskeletal manifestations and smoking and alcohol.

	Peripheral joint disease with objective signs in the past			Peripheral enthesitis with objective signs in the past			Dactylitis in the past		
	Yes	No	OR	Yes	No	OR	Yes	No	OR
	2292	2169	(95%CI)*	765	3696	(95%CI)*	685	3776	(95%CI)*
Smoker ever	887 (38.7%)	1013 (46.7%)	OR 0.72 (0.63-0.82)	312 (40.8%)	1588 (43.0%)	OR 0.75 (0.63-0.89)	277 (40.4%)	1623 (43.0%)	OR 0.89 (0.75-1.06)
Alcohol ever	929 (40.4%)	882 (40.7%)	OR 0.82 (0.71-0.94)	276 (36.1%)	1535 (41.5%)	OR 0.69 (0.57-0.83)	299 (43.6%)	1512 (40.0%)	OR 1.01 (0.84-1.22)

*Mixed logistic regression using the country as a random effect.

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POS0966

IDENTIFICATION OF PATIENTS AFFECTED WITH ANKYLOSING SPONDYLITIS AND INFLAMMATORY BOWEL DISEASE OVERLAP USING COLLAGEN BIOMARKERS

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Background: Chronic inflammatory arthritis is a hallmark of Ankylosing Spondylitis (AS), where co-existence of inflammatory bowel disease, such as Crohn's Disease (CD) is prominent. The clinical overlap of AS and CD has raised the hypothesis that these conditions may have similar pathophysiological mechanisms. Both indications are characterized by an altered extracellular matrix turnover, where particularly collagens are remodeled.

Objectives: We investigated the association between biomarkers of collagen degradation in healthy controls and patients with AS, CD and AS/CD overlap, with the aim to investigate the biomarkers' ability to identify patients with AS/CD overlap.

Methods: Patients with AS fulfilling ASAS criteria (n=13), biopsy-proven CD (n=14), subjects with AS and CD overlap (n=10) and healthy controls (n=11) undergoing standard of care colonoscopies were included in the study. The collagen degradation biomarkers measuring type III, IV, VI and X collagen (C3M, C4M, C6M and C10C, respectively) were measured in EDTA plasma samples from all subject groups. Biomarkers were measured by competitive ELISAs. Statistical analysis was performed using an ANCOVA adjusted for age, an AUROC analysis and spearman correlations.

Results: The collagen biomarker C4M was significantly higher in patients with AS/CD overlap compared to AS, CD and HCs (all p<0.0001, Figure 1A). The blood levels of C4M in AS patients were significantly lower than HC (p=0.0003), while CD also showed a lower level compared to HC though not significant (p=0.0798). No difference was found between AS and CD alone. In an AUROC analysis, C4M showed a complete separation between the patients with AS/CD overlap compared to HC, AS and CD with an AUC=1.00; p=0.0001. No differences were found between the patient groups for C3M, C6M and C10C (Figure 1, B-D). 91.3 % of patients with AS, 92.8% of patients with CD and 60 % of patients with AS and IBD overlap were actively treated with TNF- α inhibitors, which may explain the suppression of the collagen degradation biomarker levels in AS, CD and AS/IBD overlap compared to healthy controls[1,2]. No correlations were found between the collagen biomarkers and CRP, BASDAI, SCCAI or HBI scores.

CONCLUSION:

Degradation of type IV collagen quantified by C4M showed a complete separation of patients with AS/IBD overlap, compared to AS, CD and HC patients, which indicates an excessive collagen degradation and epithelial turnover. This biomarker could potentially be used to identify patients affected by both manifestations, and guide treatment decisions.

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Figure 1. Levels of C4M (A), C3M (B), C6M (C) and C10C (D) in EDTA plasma from patients diagnosed with AS (n=13), CD (n=14), AS and CD overlap (n=10) and HC (n=11). Graphs are presented as Tukey box plots. Statistical significance: ****p<0.0001.

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POS0967

DESCRIPTION OF SACROILIAC CT FINDINGS IN PATIENTS WITH ANKYLOSING SPONDYLITIS AGED OVER 50 YEARS: PRELIMINARY RESULTS OF THE CASIAGE STUDY

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Background: Diagnosis of axial spondyloarthritis (SpA) is nowadays commonly made with the help of pelvic radiography or MRI. However, there is an important inter-observer variability for radiographs, and MRI is subject to possible false positives, and is not the best modality for studying structural lesions. Conversely, pelvic CT has an excellent specificity and appears to be more effective than radiography for the diagnosis of SpA [1]. However, CT findings in patients over 50 years of age have not been studied.

Objectives: To describe sacroiliac (SI) joint CT characteristics in patients with ankylosing spondylitis (AS), aged 50 years or older.

Methods: An observational, cross sectional study was performed using medical records from Besançon University Hospital's rheumatology department, which were screened to identify patients with AS. A search was then carried out for patients over 50 years old in the hospital's imaging archiving system to identify those who had benefited from a CT which included the SI joints in their entirety. Non-inclusion criteria were the existence of pelvic bone lesions and a history of pelvic radiotherapy. For each patient, CT was interpreted using a score previously used by Diekhoff et al. [2], dividing each SI joint into 12 regions, for each of which joint space narrowing (JSN), erosions, and sclerosis are assessed. For this study, we also observed the existence of