POS0962

PATIENT-REPORTED IMPACT OF AXIAL SPONDYLOARTHRITIS ON WORKING LIFE. RESULTS FROM THE SPANISH ATLAS

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Background: Axial spondyloarthritis (axSpA) impacts negatively on multiple dimensions of patient's life, including their working life.

Objectives: The present study aims to evaluate burden of disease on axSpA patients by working status, work-related issues and their associations and determinants in a Spanish sample.

Methods: The Atlas 2017 is an extensive cross-sectional patient survey conducted in Spain (2016), validated by a multidisciplinary group of experts on spondyloarthritis. Participants were recruited through an on-line panel and patient organizations. Participants were classified as active (employed, unemployed between 15-64 years) and inactive (retirees, on sick leave, students and home-makers). Those employed were asked to report work-related issues (WRIs) due to axSpA (sick-leave, difficulty fulfilling work hours, missing work for doctors' appointments, reducing working hours or taking days off) in the past 12 months. Diagnostic delay, disease activity (BASDAI), spinal stiffness (3-12), functional limitation (0-54) and psychological distress (General Health Questionnaire, GHQ-12 [0-12]) were compared between employed patients with or without WRIs using a Mann-Whitney and Kruskal-Wallis test.

Results: Data from 680 patients were collected: mean age was 47±11 years, 52.5% were female and 36.9% were university educated. Mean disease duration and diagnostic delay were 20.9±12.2 and 8.5±7.7 years, respectively, and mean BASDAI was 5.5±2.2. A total of 63.6% (n=415) were considered active population, of which 49.8% (n=325) were employed. Of those employed, 54.3% reported a WRI, specifically 37.1% took sick leave, 44.1% had difficulties in fulfilling the working hours, 42.9% missed work due to doctor's appointments 37.1% took sick leave, 18.2% reported that their professional life had suffered, 12.3% asked for some days off, 12.3% changed shift sometimes and 7.6% had to give up their previous job. Among all patients, 95.5% faced (or believed they would) difficulties finding a job due to axSpA. Experiencing WRIs due to axSpA was significantly associated in the univariable analysis with higher disease activity, self-reported spinal stiffness, longer diagnostic delay, higher functional limitation and higher level of psychological distress (p<0.001). However, the highest levels of disease burden were reported by unemployed participants (see Table 1).

Table 1. Differences between employees with/without work-related issues and between employed/unemployed participants in relation to sociodemographic and patient-reported outcomes

Reference group	Employed		Active Population	
Subgroup	Any WRI	With no WRIs	Employed	Unemployed
N size	n: 170	n: 143	n: 325	n: 90
Sociodemographic characteristics				
Age (years)	41.9 ± 7.9	44.2 ± 9.4	42.9 ± 8.6*	42.0 ± 9.1*
Gender (Male)	79 (46.5)	75 (52.4)	159 (48.9)	36 (40.0)
Education level (University)	80 (47.1)*	68 (47.6)*	153 (47.1)	21 (23.3)
Marital status (Married)	110 (64.7)	109 (76.2)	231 (71.1)	54 (60.0)
Patient-reported outcomes				
BASDAI (0-10)	5.7 ± 1.8**	4.5 ± 1.9**	5.2 ± 1.9**	6.3 ± 1.9**
Spinal Stiffness (3-12)	6.7 ± 2.7**	6.1 ± 2.4**	6.5 ± 2.6**	7.8 ± 2.3**
Functional Limitation (0-54)	43.9 ± 8.8**	36.9 ± 10.3**	40.6 ± 10.1**	45.0 ± 8.4**
GHQ-12 (0-12)	6.6 ± 4.2**	3.0 ± 3.5**	4.9 ± 4.3**	7.6 ± 4.2**
Anxiety	35 (20.6)*	16 (11.2)*	52 (16.0)*	25 (27.8)*
Depression	29 (17.1)*	4 (2.8)*	33 (10.2)**	21 (23.3)**

Note: WRI: Work-related issue** p-value <0.001; * p-value <0.05

Conclusion: Results reveal a relevant impact of axSpA in patient working life. Approximately two out of three patients employed experienced WRIs due to axSpA, being associated to worse disease outcomes and poorer psychological health. However, those who were unemployed faced a harsher situation reporting even poorer disease-related and psychological health outcomes. As psychological health appears impaired severely in axSpA patients regardless of their employment status it should be key for a holistic approach to patient care.

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POWER AND SPECTRAL DOPPLER ULTRASOUND AS A SCREENING TOOL IN THE DIAGNOSTIC COURSE OF SUSPECTED AXIAL SPONDYLOARTHRITIS: PRELIMINARY DATA FROM A LARGE MONOCENTRIC COHORT

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Background: Sacroiliac joints (SIJs) involvement is a characteristic feature of Spondyloarthritis (SpA). Magnetic resonance imaging (MRI) has been included in the new Assessment of SpA International Society (ASAS) criteria for the classification of non-radiographic axial SpA. Power Doppler ultrasound (PDUS) and spectral Doppler US have been used in few works, also from our group, to evaluate the inflammatory activity of the SIJs, in comparison with MRI, with different results.

Objectives: We aimed to evaluate the value of PDUS with spectral wave analysis (SWA) in the assessment of suspected active sacroiliitis (SI). PDUS of SIJs was used as a screening tool alongside the routine PDUS assessment of peripheral joints.

Methods: 143 patients (114 females and 29 males, mean age 46.2 years, mean BMI 25.9) with new onset of inflammatory back pain (IBP), were included. Peripheral symptoms were allowed. Every patient underwent a PDUS examination of SIJs as previously reported. The sonographer was blinded to the clinical data. An Esaote Twice US machine, with convex 1-8 MHz and linear 6-18 MHz probes, was used, with standardized parameters. PD signals detected in the SIJs, were scored with a 3-points scale: 0= absence of signals, 1= isolate vessels, 2= more than one vessel. The signals were also classified as intra-articular (vascularity from deep joint and inter-osseous ligament) or peri-articular (vascularity along posterior sacroiliac ligament). SWA was applied to the same vessels calculating the Resistive Index (RI) (Figure 1). A PDUS diagnosis of active SI was made with a grade 1 of vascularity and RI<0.60, or grade 2 of vascularity and RI<0.70. PDUS multi-site examination of peripheral joints and entheses was also performed; enthesal involvement was scored with Belgrade Ultrasound Enthesitis Score (BUSES) and as global enthesitic charge (GEC). Every patient underwent MRI of SIJs within 2 weeks, and before to start pharmacologic treatment. The non-parametric Spearman rank test and univariate linear regression analysis was applied using InStat GraphPad statistical package.

Results: A time of 5-8 minutes was sufficient to set and to complete PDUS/SWA examination on both SIJs. All patients considered this examination quick, not painful and substantially comfortable. PD signals were detected in 124 patients (mean RI 0.56). Bone marrow edema (BME) lesions (active SI on MRI) were detected in 94 patients. A final diagnosis of SpA was made in 103 patients (81 females, 22 males). Among SpA patients 24 had psoriasis, 3 inflammatory bowel disease, 3 uveitis, 5 were B27+, and they had mean BUSES of 4.1 and GEC of 1.2. The mean SIJs PDUS score was 1.3 in SpA and 0.52 in not-SpA patients. The mean SIJs RI was 0.53 in SpA and 0.68 in not-SpA patients. A significant correlation was demonstrated between MRI and PDUS diagnosis of SI (r=0.6486, p<0.0001), between MRI diagnosis and PD grading (r=0.4937, p<0.0001). The split analysis of peculiar parameters of imaging between the two methods also showed significant correlation: periaricular vascularity showed correlation with post-contrast MRI evidence of posterior capsulitis and enthesitis (p=0.001), as SIJs BME correlated with intra-articular PD signals (p<0.001). RI from SWA analysis was inversely correlated with MRI diagnosis of active SI (p<0.0001). SIJs PD demonstrated a significant correlation with SIJs pain (p<0.001), but not with inflammatory reactants, GEC, peripheral synovitis, and a weak correlation with BUSES (p=0.038).

Conclusion: SIJs PDUS/SWA may be an optional method for preliminary screening of active SI, as a feasible, cheap and an accurate diagnostic tool, compared with MRI as a gold standard for nr-Axial SpA. PD US in SI. Right SI joint with a PD signal within inter-osseous ligament (curved arrow), where spectral PD analysis shows a RI of 0.62. Normal vessels (with high RI, unshowed) can be observed into the first sacral foramen (arrowhead). The first sacral apophysis (arrow) protrudes from the sacrum profile.

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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.

REFERENCES:

- [1] López-Medina C, et al. Characteristics and burden of disease in patients with radiographic and non-radiographic axial Spondyloarthritis: a comparison by systematic literature review and meta-analysis. RMD Open, 2019. 5(2) p1108.

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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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