Table 2. Association of skin psoriasis with radiographic progression in axial spondyloarthritis after 2 years of follow-up.

Outcome	Psoriasis (n=28)	No psoriasis (n=185)	p*
Spine			
mSASSS change	1.52 ± 4.02	0.61 ± 1.95	0.55
Progression of mSASSS by ≥2 points	6 (21.4%)	24 (13.2%)	0.25
New syndesmophytes or progression of syndesmophytes	7 (25.0%)	26 (14.3%)	0.16
Sacroiliac joints			
Change of the sacroiliitis sum score	0.18 ± 0.63	0.12 ± 0.87	0.71
Progression of sacroiliitis by at least 1 grade in opinion of both readers	3 (10.7%)	23 (12.6%)	1.00

* Mann-Whitney U-Test for continuous variables, Fisher Exact test for binary variables.

mSASSS - modified Stoke Ankylosing Spondylitis Spine Score.

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SAT0306 COMPARISON OF MEN AND WOMEN WITH AXIAL SPONDYLOARTHRITIS IN THE US-BASED CORRONA PSORIATIC ARTHRITIS/SPONDYLOARTHRITIS (PSA/SPA) REGISTRY

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Background: Axial spondyloarthritis (AxSpA) is a chronic inflammatory rheumatic disease that primarily affects the axial skeleton and frequently affects the peripheral joints and entheses. AxSpA encompasses ankylosing spondylitis and nonradiographic AxSpA. Sex differences have been described for patient reported outcomes (PROs) in SpA; however, more research is needed to better understand the overall clinical burden of AxSpA in women, particularly in the United States.

Objectives: To compare the patient demographics, clinical characteristics, treatment profiles, disease activity, quality of life, and work productivity between men and women with AxSpA in the US-based Corrona PsA/SpA Registry.

Methods: This study included patients aged ≥ 18 years with AxSpA enrolled in the Corrona PsA/SpA Registry between March 2013 and November 2018. Patients who were concurrently diagnosed with PsA were excluded. Patient demographics, clinical characteristics, treatment profiles, disease activity, quality of life, and work productivity were characterized for all patients with AxSpA at enrollment and were compared between men and women using *t* tests or Wilcoxon rank-sum tests for continuous variables and χ^2 or Fisher's exact tests for categorical variables.

Results: Of 498 patients with AxSpA who were included in the study, 307 (61.6%) were male and 191 (38.4%) were female. Compared with men, women were less likely to work full time, were more likely to be normal weight/underweight, had a shorter disease duration, and were more likely to have depression, fibromyalgia, and prior csDMARD and prednisone use (**Table 1**; all $P < 0.05$). At enrollment, women with AxSpA had a shorter occiput-to-wall distance, but also had worse disease activity compared with men, as reflected by higher BASDAI and BASFI scores, higher enthesitis and tender/swollen joint counts, worse pain and fatigue, worse physical function (HAQ-S) and health state today (EQ VAS), and more severe work and activity impairment (**Table 2**; all $P < 0.05$).

Conclusion: In this US registry of patients with AxSpA, women had an increased overall burden of disease compared with men, including higher patient reported symptoms, higher disease activity, and greater work productivity impairment. Women also had lower scores for spinal mobility with increased signs of peripheral arthritis (eg, higher tender/swollen joint and enthesitis counts), suggesting that conventional definitions of AxSpA centered around axial symptoms may not be representative of the female population with disease. Improved awareness of sex differences in presentation of AxSpA may aid physicians in earlier identification and improved management of the disease.

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Table 1. Demographic and Clinical Characteristics and Treatment Profiles in Men and Women With AxSpA at Enrollment

Characteristic	Patients With AxSpA		*P* Value
	Men (N = 307)	Women (N = 191)	
Age, mean (SD) [n], years	47.3 (13.9) [305]	47.7 (13.5) [190]	0.75
Race, n (%)	n = 302	n = 186	0.08
White	276 (91.4)	172 (92.5)	
Black	3 (1.0)	6 (3.2)	
Other	23 (7.6)	8 (4.3)	
Work status, n (%)	n = 306	n = 190	< 0.01
Full time	190 (62.1)	102 (53.7)	
Part time	11 (3.6)	20 (10.5)	
Disabled	49 (16.0)	24 (12.6)	
Retired	38 (12.4)	22 (11.6)	
Other	18 (5.9)	22 (11.6)	
BMI, mean (SD) [n], kg/m^2	29.8 (6.0) [297]	30.0 (8.5) [189]	0.32
BMI (in kg/m^2) categories, n (%)	n = 297	n = 189	0.04
Normal/underweight (< 25)	64 (21.5)	60 (31.7)	
Overweight (25 to < 30)	102 (34.3)	54 (28.6)	
Obese (≥ 30)	131 (44.1)	75 (39.7)	
Symptom duration, mean (SD) [n], years	17.6 (12.3) [296]	15.7 (11.6) [184]	0.09
Disease duration, mean (SD) [n], years	10.3 (10.8) [301]	8.2 (9.9) [188]	0.02
HLA-B27 positive test result, n (%)	224 (73.0)	124 (64.9)	0.06
Select comorbidities, n (%)			
Depression	37 (12.1)	49 (25.7)	< 0.01
Fibromyalgia	3 (1.0)	20 (10.5)	< 0.01
Ulcerative colitis	9 (2.9)	13 (6.8)	0.04
Anxiety	7 (2.3)	10 (5.2)	0.08
Prior biologic use, n (%)	89 (29.0)	63 (33.0)	0.35
Number of prior biologics, n (%)			0.62
0	218 (71.0)	128 (67.0)	
1	57 (18.6)	39 (20.4)	
≥ 2	32 (10.4)	24 (12.6)	
Prior csDMARD use, n (%)	41 (13.4)	42 (22.0)	0.01
Prior prednisone use, n (%)	27 (8.8)	30 (15.7)	0.02

AxSpA, axial spondyloarthritis; BMI, body mass index; csDMARD, conventional synthetic disease-modifying antirheumatic drug.

Table 2. Disease Activity, Quality of Life, and Work Productivity in Men and Women With AxSpA at Enrollment

Characteristic	Patients With AxSpA		*P* Value
	Men (N = 307)	Women (N = 191)	
ASDAS, mean (SD) [n]	2.6 (1.2) [179]	2.8 (0.9) [123]	0.07
BASDAI (0-10), mean (SD) [n]	4.2 (2.5) [294]	4.9 (2.3) [187]	< 0.01
BASFI (0-10), mean (SD) [n]	3.4 (2.8) [295]	4.1 (2.7) [185]	< 0.01
Lateral lumbar flexion (average of left and right), mean (SD) [n], cm	24.1 (20.1) [276]	23.4 (19.0) [170]	0.76
Occiput to wall, mean (SD) [n], cm	5.8 (7.7) [277]	2.7 (5.0) [172]	< 0.01
Enthesitis, n (%)	62 (20.2)	71 (37.2)	< 0.01
SPARCC Enthesitis Index (1-16)	3.2 (2.4) [62]	4.8 (3.2) [71]	< 0.01
Dactylitis, n (%)	9 (2.9)	3 (1.6)	0.39
Dactylitis count (1-20)	3.4 (3.5) [9]	1.3 (0.6) [3]	0.37
Tender joint count (0-68), mean (SD) [n]	1.8 (4.7) [299]	5.1 (9.6) [190]	< 0.01
Swollen joint count (0-66), mean (SD) [n]	0.6 (2.5) [299]	0.9 (2.2) [190]	0.01
Physician global assessment, mean (SD) [n]	25.7 (23.4) [295]	30.8 (22.2) [188]	< 0.01
Patient pain (VAS 0-100), mean (SD) [n]	45.3 (30.5) [293]	51.6 (27.8) [172]	0.03
Patient fatigue (VAS 0-100), mean (SD) [n]	45.4 (29.1) [306]	53.9 (27.4) [191]	< 0.01
Morning stiffness, n (%)	n = 299	n = 190	0.10
< 30 minutes	88 (29.4)	43 (22.6)	
≥ 30 minutes	211 (70.6)	147 (77.4)	
Patient global assessment (VAS 0-100), mean (SD) [n]	52.2 (32.5) [102]	52.5 (33.1) [41]	0.82
HAQ-S (0-3), mean (SD) [n]	0.59 (0.62) [258]	0.82 (0.65) [131]	< 0.01
EQ VAS (0-100), mean (SD) [n]	66.2 (22.2) [298]	61.1 (22.4) [189]	< 0.01
WPAI domains, mean (SD) [n]			
Current employment, n/m (%)	206/304 (67.8)	121/189 (64.0)	0.39
% Work time missed	6.7 (18.4) [190]	7.3 (17.4) [109]	0.33
% Impairment while working	24.9 (23.8) [199]	35.4 (28.5) [113]	< 0.01
% Overall work impairment	28.4 (27.1) [184]	36.4 (28.6) [105]	0.03
% Activity impairment	36.1 (29.7) [299]	45.9 (30.0) [188]	< 0.01

ASDAS, Ankylosing Spondylitis Disease Activity Score; AxSpA, axial spondyloarthritis; BASDAI, Bath Ankylosing Spondylitis Disease Activity Index; BASFI, Bath Ankylosing Functional Index; EQ VAS, EuroQol visual analogue scale; HAQ-S, Health Assessment Questionnaire for the Spondyloarthropathies; SPARCC, Spondyloarthritis Research Consortium of Canada; VAS, visual analog scale; WPAI, Work Productivity and Activity Impairment questionnaire.

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SAT0307 LONG-TERM ASSOCIATION BETWEEN DISEASE ACTIVITY MEASURED BY ASDAS AND PHYSICAL FUNCTION IN A LARGE EARLY AXIAL SPONDYLOARTHRITIS COHORT

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Background: The Ankylosing Spondylitis Disease Activity Score (ASDAS) has been progressively replacing the Bath Ankylosing Spondylitis Disease Activity Score (BASDAI) as the main disease activity measure to assess patients with axial spondyloarthritis (axSpA), both in the research context as well as in clinical practice. However, further evidence is needed to show its meaningfulness regarding the longitudinal relationship with physical function.
Objectives: To study the long-term association between disease activity and physical function in axSpA.
Methods: DESIR is a prospective observational cohort of patients with recent onset (<3 years) inflammatory back pain, suggestive of axSpA. We analysed data collected during the first five years of follow-up and selected patients with a definite diagnosis of axSpA according to the treating rheumatologist. Physical function was assessed using the Ankylosing Spondylitis Health Assessment Questionnaire (HAQ-AS). Disease activity was measured using the ASDAS C-reactive protein (ASDAS-CRP) and BASDAI. In a first step, associations between HAQ-AS (dependent variable) and disease activity (defined by ASDAS or BASDAI), clinical and demographic variables were tested in univariable models. Multivariable models were then built adjusting for potential confounding factors found to be significant in the univariable analysis.
In a second step, additional multivariable analysis was conducted using the Chi-square Automatic Interaction Detector (CHAID) method, with HAQ-AS as dependent variable. The following independent variables were tested: ASDAS/BASDAI, enthesitis score, arthritis, employment status, gender, symptom duration, body mass index (BMI), HLA-B27 status, treatment with non-steroidal anti-inflammatory drugs (NSAID), conventional disease modifying anti-rheumatic drugs (cDMARD) and TNF-blockers. The final model fixed as criteria: 70 parent nodes and 20 child nodes to create new generations in the decision tree.
Results: Data from 644 patients and 4944 visits were analysed. There was a significant independent association between HAQ-AS and gender, employment status, peripheral arthritis, ASDAS-CRP/BASDAI, enthesitis, NSAID and anti-TNF treatment (Table 1). The decision tree revealed ASDAS as the first variable with discriminative power on HAQ-AS, according to the following cut points: 1.3, 2.2 and 2.4. In addition, for ASDAS values above 3.5 the model yield a higher number of explanatory variables setting different patients' profiles regarding their functional status, namely: gender, anti-TNF and NSAID treatment. Notably, the ASDAS cut-offs that separated different patient profiles largely mimicked the cut-offs previously defined for ASDAS disease activity states (inactive, low, high and very high disease activity). According to this hierarchical model, gender, anti-TNF treatment and enthesitis score were the next variables explaining HAQ-AS variation, followed by employment status and NSAID treatment.
Conclusion: We have shown that disease activity contributes longitudinally to physical function and that it is hierarchically superior to any other variables or disease domains. Previously defined ASDAS-CRP disease activity categories identified different patient profiles on the hierarchical analysis.

REFERENCE

None.

Table 1. GEE models for HAQ-AS (dependent variable) in axSpA

Characteristics	Univariable analysis, OR (95% CI)	Multivariable analysis taking ASDAS-CRP into account, adjOR (95% CI)	Multivariable analysis taking BASDAI into account, adjOR (95% CI)**
Age, years	1.00 (1-00-1.05)	NA	NA
Male gender	0.73 (0.68-0.78)	0.82 (0.78-0.86)	0.84 (0.80-0.88)
BMI, Kg/m2	1.01 (1.00-1.01)	*	*
HLA-B27 positive	0.84 (0.78-0.90)	*	*
Symptoms duration, years	0.98 (0.98-0.99)	*	*
Currently employed	0.95 (0.91-0.99)	0.95 (0.91-98)	0.95 (0.91-0.98)
Current smoker	1.01 (0.98-1.05)	NA	NA
Peripheral arthritis	1.21 (1.13-1.30)	1.10 (1.04-1.16)	1.09 (1.03-1.16)
ASDAS-CRP	1.26 (1.24-1.29)	1.25 (1.23-1.27)	NA
BASDAI	1.01 (1.01-1.01)	NA	1.01 (1.01-1.01)
Enthesitis score (0 to 39)	1.02 (1.02-1.03)	1.01 (1.01-1.02)	1.01 (1.01-1.01)
Modified NY criteria	0.95 (0.89-1.01)	NA	NA
MRI sacroiliitis	1.01 (0.96-1.07)	NA	NA
mSASSS score	0.99 (0.98-1.01)	NA	NA
NSAIDs (last 6 months)	1.13 (1.09-1.16)	1.03 (1.01-1.06)	1.03 (1.01-1.06)
cDMARDs (last 6 months)	1.09 (1.03-1.14)	*	*
TNF-blocker (last 6 months)	0.92 (0.88-.96)	1.07 (1.03-1.11)	1.04 (1.01-1.08)

* Not selected for this model; NA – not applicable; ** Model adjusted with the cofactors considered significant in the proposed multivariable model for ASDAS (previous column)

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SAT0308 CLUSTER-BASED SPONDYLOARTHRITIS PHENOTYPES DEFINED AT BASELINE ARE PREDICTIVE OF 5-YEAR SEVERITY OUTCOME IN THE DESIR COHORT

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Background: The course of axial spondyloarthritis (SpA) is heterogeneous, varying from mild to severe and remains to be better defined. DESIR is a French cohort of early undifferentiated axial SpA that are longitudinally followed-up, offering such opportunity. We recently performed a cluster analysis in the DESIR cohort, according to baseline characteristics and identified 2 clusters: one characterized by an isolated axial disorder (A for axial) and one by additional high frequency of peripheral