Assessing disease burden in patients with Psoriatic Spondyloarthritis and Axial Spondyloarthritis

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INTRODUCTION

- Psoriatic Spondyloarthritis (PsSpA) shares features of both psoriatic arthritis and axial spondyloarthritis (axSpA).
- PsSpA consists of axial arthritis, peripheral arthritis and enthesitis.
- Previous studies have shown that sacroiliitis in PsSpA is usually asymmetrical and has less severe radiographic changes compared to patients with axSpA.
- However, these studies have not been entirely consistent about the differences in clinical characteristics and quality of life (QoL) between PsSpA and axSpA patients.

OBJECTIVE

To compare the clinical characteristics and QoL parameters in PsSpA and axSpA patients.

METHODS

- A cross-sectional survey was conducted among people diagnosed with SpA who initiated contact through the SAA website.
- Between July 7, 2017, and December 31, 2017, a total of 820 interviews were conducted with SAA contacts, including 720 completed via web survey (from 7750 emails) and 100 via follow-up over the phone (from 10,784 phone calls made to 5000 unique numbers).
- Respondents were randomly selected by assigning a number to each person initiating contact with the SAA, and then choosing random numbers for participation.
- Each respondent answered questions regarding baseline demographics, including age, sex, current treatment use, geographic region, and locations of pain.
- All respondents self-reported their physician-made SpA diagnosis, which included AS, uveitis/iritis, undifferentiated SpA, psoriatic arthritis, axial SpA, arthritis associated with inflammatory bowel disease, reactive arthritis, and juvenile SpA; respondents also reported duration of their disease and time since diagnosis.
- Respondents also reported specific locations of joint involvement, as well as any existing comorbidities or other associated conditions such as high blood pressure, high cholesterol, depression, fibromyalgia, uveitis, Crohn disease/ulcerative colitis, acid reflux, eye inflammation, irritable bowel syndrome, migraine, and balance issues.
- Respondents specified the treatment agents they were receiving at the time of survey participation, including analgesics, biologics, cannabis, NSAIDs, opioids, slow-acting antirheumatic drugs (SAARDs), and steroids.
- QoL of respondents with AS was assessed based on the EASi-QoL questionnaire.
- Categorical variables were presented as the count and percentage of respondents per category, and continuous variables were summarized with means.

TABLE 1

	axSpA only (n=664)	PsSpA (n=52)	OR (95% CI)	P-Value
Male sex, n (%)	315 (47.4)	21 (40.4)	0.75 (0.43-1.33)	0.33
Age, mean ± SD years	55.3±14.2	57.7±11.7		0.18@
White, n (%)	593 (89.3)	48 (92.3)	1.44 (0.50-4.10)	0.64
Annual income level >$100,000, n (%)	227 (34.2)	21 (40.4)	1.30 (0.73-2.32)	0.37
Employment status, full time, n (%)	264 (39.8)	14 (26.9)	0.56 (0.30-1.05)	0.07
Age diagnosed with AS, mean ± SD years	36.9±13.3	40.7±12.5		0.057@
Current/Previous Medication use, n (%)				
NSAIDs	621 (93.5)	48 (92.3)	0.83 (0.29-2.41)	0.73
Monoclonal anti-TNF	391 (58.9)	39 (75.0)	2.10 (1.10-4.00)	0.02*
Biosimilars	5 (0.8)	0 (0.0)		-
Any biologics/biosimilars	456 (68.7)	43 (82.7)	2.18 (1.04-4.55)	0.03*
Naproxen	499 (76.0)	40 (76.9)	1.06 (0.54-2.06)	0.87
Ibuprofen	559 (85.0)	45 (86.5)	1.14 (0.50-2.60)	0.76
Indomethacin	253 (39.4)	19 (37.3)	0.91 (0.51-1.65)	0.76
Sulfasalazine	252 (39.0)	21 (41.2)	1.09 (0.61-1.95)	0.76
Acetaminophen	544 (83.1)	44 (84.6)	1.12 (0.51-2.45)	0.77
Hydrocortisone	232 (36.1)	27 (51.9)	1.91 (1.08-3.37)	0.02*
Prednisolone	432 (66.3)	39 (75.0)	1.53 (0.80-2.92)	0.20
Certolizumab (TNF blocker)	51 (7.9)	15 (28.8)	4.72 (2.43-9.18)	<0.001*
Methotrexate	238 (36.7)	29 (56.9)	2.28 (1.28-4.05)	0.004*
Apremilast	12 (1.9)	6 (11.8)	6.99 (2.51-19.49)	<0.001*
Secukinumab	56 (8.7)	10 (19.6)	2.57 (1.22-5.40)	0.01*
Ustekinumab	10 (1.6)	8 (15.7)	11.78 (4.42-31.37)	<0.001*
Etanercept	268 (41.1)	25 (48.1)	1.33 (0.75-2.34)	0.33
Adalimumab	315 (48.1)	34 (65.4)	2.04 (1.13-3.68)	0.02*
Infliximab (TNF blocker)	184 (28.2)	24 (47.1)	2.26 (1.27-4.02)	0.01*
Golimumab	65 (10.1)	9 (17.6)	1.92 (0.89-4.11)	0.09
Marijuana	98 (14.8)	10 (19.2)	1.38 (0.67-2.83)	0.39
Opioids	325 (48.9)	31 (59.6)	1.54 (0.87-2.74)	0.14
Joint involvement, n (%)				
Lower Jaw	223 (33.6)	22 (42.3)	1.45 (0.82-2.57)	0.20
Neck	558 (84.0)	44 (84.6)	1.05 (0.48-2.28)	0.91
Shoulders	461 (69.4)	35 (67.3)	0.91 (0.50-1.66)	0.75
Ribs	350 (52.7)	29 (55.8)	1.13 (0.64-2.00)	0.67
Rib Spine	384 (57.8)	31 (59.6)	1.08 (0.61-1.91)	0.80
Lumbar Spine	573 (86.3)	49 (94.2)	2.59 (0.79-8.50)	0.13#
Waist or Sacrum or Pelvis	470 (70.8)	35 (67.3)	0.85 (0.47-1.55)	0.60
Hip Joint	533 (80.3)	41 (78.8)	0.92 (0.46-1.83)	0.80
Wrist	302 (45.5)	28 (53.8)	1.40 (0.79-2.46)	0.24
Hands	375 (56.5)	42 (80.8)	3.24 (1.60-6.56)	0.001*
Knee	420 (63.3)	40 (76.9)	1.94 (1.00-3.76)	0.048*
Heel	315 (47.4)	31 (59.6)	1.64 (0.92-2.91)	0.09
Feet	272 (41.0)	30 (57.7)	1.97 (1.11-3.48)	0.02*
Ankle	286 (43.1)	29 (55.8)	1.67 (0.94-2.94)	0.08
Coexisting disease, n (%)				
Diabetes	53 (8.0)	5 (9.6)	1.23 (0.47-3.22)	0.60
Fibromyalgia	89 (13.4)	9 (17.3)	1.35 (0.64-2.87)	0.43
Heart disease	56 (8.4)	5 (9.6)	1.16 (0.44-3.02)	0.80
Hypertension	232 (34.9)	21 (40.4)	1.26 (0.71-2.25)	0.45
High cholesterol	175 (26.4)	13 (25.0)	0.93 (0.49-1.79)	0.83
Lupus	3 (0.5)	1 (1.9)	4.52 (0.44-42.28)	0.26
Osteoporosis	74 (11.1)	9 (17.3)	1.67 (0.78-3.56)	0.18
Rheumatoid arthritis	66 (9.9)	6 (11.5)	1.18 (0.49-2.87)	0.71
Sjogrens disease	28 (4.2)	5 (9.6)	2.42 (0.89-6.55)	0.08
Uveitis	194 (29.2)	23 (44.2)	1.92 (1.08-3.41)	0.02*
Depression	155 (23.3)	16 (30.8)	1.46 (0.79-2.70)	0.23
Irritable bowel syndrome	213 (32.1)	26 (50.0)	2.12 (1.20-3.74)	0.008*
Migraine	215 (32.4)	22 (42.3)	1.53 (0.86-2.72)	0.14
Nail pitting	82 (12.3)	23 (44.2)	5.63 (3.11-10.20)	<0.001*

Comparison of Characteristics between Patients With AS with and without Concomitant Psoriatic Arthritis.

**Significant P<0.05 by Pearson's Chi-square test | @ Student's T-test*

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TABLE 2

	Adjusted OR (95% CI)	P-value
Nail pitting	4.02 (2.11-7.67)	< 0.001
Use of apremilast	6.57 (1.97-21.90)	0.002
Finger pain	2.60 (1.18-5.75)	0.02

Characteristics Independently Associated with Psoriatic Arthritis with AS in Multivariate Analysis.

Multivariate logistic regression analysis adjusted for sex, age, ethnicity, income level, full-term employment status.

TABLE 3

	axSpA only Median (IQR), n=645	PsSpA Median (IQR), n=51	P-value
Total EASi-QoL	28.0 (29.0)	40.0 (25.0)	0.006
Domain			
Physical function	8.0 (9.7)	11.0 (10.0)	0.013
Disease activity	7.0 (7.0)	9.0 (4.0)	0.046
Emotional well-being	5.0 (8.0)	9.0 (10.0)	0.016
Social participation	6.0 (8.0)	11.0 (9.0)	0.002

Quality of Life Indices Associated with Psoriatic Arthritis with AS.

Statistically significant at P < 0.05, Mann-Whitney U Test PsA; IQR, inter-quartile range

RESULTS

- Six hundred and sixty four patients with a physician diagnosed axSpA and fifty two patients with a physician made diagnosis of PsSpA (with psoriasis, psoriatic arthritis and axial symptoms) responded to the SAA survey.
- Demographic parameters such as age, race, gender, income, employment status and age at diagnosis were not significantly different in the two groups.
- The PsSpA group was treated with more methotrexate (p=0.004) and biologics/biosimilars (p=0.03), either currently or in the past.
- Knee pain (p=0.048), hand pain (p=0.001) and foot pain (p=0.02) were significantly more in patients with PsSpA.
- Patients with PsSpA were more likely to be associated with irritable bowel disease (p=0.008), nail pitting (0.001), and uveitis (p=0.02) as compared to axSpA patients.
- Further these patients had worse scores for QoL measured by using the Evaluation of ankylosing spondylitis quality of life scale (EASiQoL) (p=0.006).
- This was true for all its four domains – physical function (p=0.0013), disease activity (p=0.0046), emotional wellbeing (p=0.0016), and social participation (p=0.0002).
- In multivariate analysis, hand pain, nail pitting, and apremilast were the only parameters that were significant, apart from QoL indices.

CONCLUSIONS

- The survey demonstrates a poor quality of life in patients with PsSpA as compared to axSpA, despite being less severe radiographically as seen in previous studies.
- This may be of relevance in the development of future treatment guidelines when this endophenotype is considered.
- The unequal number of patients in each group is a mere reflection of the Spondylitis Association of America rather than an attempt to over represent classic axSpA.
- In the future, a longitudinal cohort is required to further study not only the clinical and radiographic but also genetic differences between these conditions.