

The Uveitis Impact Study: A Survey by the Spondylitis Association of America



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Background

- Uveitis is the most common extra-articular feature in ankylosing spondylitis (AS) with a reported prevalence of 32.7% after a mean follow-up of 17.7 years¹
- It typically presents as acute unilateral anterior uveitis² but recurrent episodes can lead to severe vision loss from posterior synechiae and cataracts
- It is unclear whether a more severe systemic disease exists among AS patients with uveitis compared to AS patients without uveitis
- A better understanding of AS disease characteristics and treatment response can improve our management for patients with uveitis

Objective

- To compare disease and treatment characteristics from patients with AS with no history of uveitis to those with AS and a history of uveitis in a real-world setting

Methods

- A cross-sectional survey was conducted by the Spondylitis Association of America (SAA) among a random sample of patients contacted by the SAA
- 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)
- Each person was screened for a spondyloarthritis diagnosis, comorbidities, Evaluation of Ankylosing Spondylitis Quality of Life (EASi-QoL) questionnaire³, treatment and medication through self-report
- Categorical variables are presented as the count and percentage of respondents per category, and continuous variables were summarized with means
- The χ^2 test was used to test for differences in categorical variables; P < 0.05 was considered significant. Statistical methods also included student's T test, Mann-Whitney test, and logistic regression.
- The survey updates a prior report which we published in 2014⁴

Result

- Of 820 participants who completed the survey, 716 self-reported receiving a diagnosis of AS from their doctor and were included in this study

	Uveitis (n=217)	No Uveitis (n=499)	Odds Ratio (95% CI)	P
Male sex, n (%)	104 (47.9)	232 (46.5)	1.06 (0.77-1.46)	0.72
Age, mean ± SD years	56.5 ± 12.4	55.1 ± 14.7	---	0.18 [#]
White, n (%)	194 (89.4)	447 (89.6)	0.98 (0.58-1.65)	0.94
Annual income level >\$100,000, n (%)	75 (34.6)	173 (34.7)	1.00 (0.71-1.39)	0.98
Employment status, full time, n (%)	79 (36.4)	199 (39.9)	0.86 (0.62-1.20)	0.38
Age at AS onset, mean ± SD years	26.5 ± 11.8	30.0 ± 14.3	---	0.001 [#]
Additional Disease subtype, n (%)				
Psoriatic arthritis	23 (10.6)	29 (5.8)	1.92 (1.08-3.41)	0.02*
Enteropathic arthritis associated with inflammatory bowel disease (IBD)	15 (6.9)	8 (1.6)	2.42 (1.61-3.65)	<0.001*
Reactive Arthritis	12 (5.5)	11 (2.2)	2.60 (1.13-5.98)	0.02*

Table 1. Comparison of demographics of AS patients with and without uveitis #: student's t-test

Result

	Uveitis (n=217)	No Uveitis (n=499)	Odds Ratio (95% CI)	P
Coexisting disease, n (%)				
Fibromyalgia	39 (18.0)	59 (11.8)	1.63 (1.05-2.54)	0.03*
Hypertension	89 (41.0)	164 (32.9)	1.42 (1.02-1.97)	0.04*
Kidney dysfunction	29 (13.4)	38 (7.6)	1.87 (1.12-3.12)	0.02*
Irritable bowel syndrome	85 (39.2)	154 (30.9)	1.44 (1.04-2.01)	0.03*
Acid reflux	124 (57.1)	240 (48.1)	1.44 (1.04-1.98)	0.03*
Diabetes Mellitus	19 (8.8)	39 (7.8)	1.13 (0.64-2.01)	0.67
Heart disease	16 (7.4)	45 (9.0)	0.80 (0.44-1.46)	0.47
High cholesterol	59 (27.2)	129 (25.9)	1.07 (0.75-1.54)	0.71
Osteoporosis	20 (9.2)	63 (12.6)	0.70 (0.41-1.19)	0.19
Rheumatoid arthritis	20 (9.2)	52 (10.4)	0.87 (0.51-1.50)	0.62
Depression	60 (27.6)	111 (22.2)	1.34 (0.93-1.92)	0.12
Incontinence	31 (13.4)	82 (14.2)	0.85 (0.53-1.34)	0.75
Joint involvement, n (%)				
Waist or Sacrum or Pelvis	165 (76.0)	340 (68.1)	1.49 (1.03-2.14)	0.03*
Hip Joint	186 (85.7)	388 (77.8)	1.72 (1.11-2.65)	0.01*
Heel	121 (55.8)	225 (45.1)	1.54 (1.11-2.12)	0.01*
Ribs	131 (60.4)	248 (49.7)	1.54 (1.12-2.13)	0.01*
Fingers	140 (64.5)	277 (55.5)	1.46 (1.05-2.03)	0.03*
Knee	156 (71.9)	304 (60.9)	1.64 (1.16-2.32)	0.01*
Lower Jaw	78 (35.9)	167 (33.5)	1.12 (0.80-1.56)	0.52
Neck	191 (88.0)	411 (82.4)	1.57 (0.98-2.52)	0.06
Shoulders	156 (71.9)	340 (68.1)	1.20 (0.84-1.70)	0.32
Rib Spine	137 (63.1)	278 (55.7)	1.36 (0.98-1.89)	0.06
Lumbar Spine	192 (88.5)	430 (86.2)	1.23 (0.76-2.01)	0.40
Wrist	111 (51.2)	219 (43.9)	1.34 (0.97-1.84)	0.07
Toes	103 (47.5)	199 (39.9)	1.36 (0.99-1.88)	0.06
Ankle	107 (49.3)	208 (41.7)	1.36 (0.99-1.87)	0.06
Current/Previous Medication use, n (%)				
Indomethacin	100 (47.4)	172 (35.7)	1.62 (1.17-2.26)	0.004*
Sulfasalazine	104 (48.1)	169 (35.1)	1.71 (1.24-2.38)	0.001*
Prednisolone	166 (77.2)	305 (62.4)	2.04 (1.42-2.95)	<0.001*
Hydrocortisone	95 (45.2)	164 (33.9)	1.61 (1.16-2.24)	0.004*
Methotrexate	95 (44.2)	172 (35.5)	1.44 (1.04-2.00)	0.03*
Certolizumab (TNF blocker)	29 (13.5)	37 (7.7)	1.88 (1.12-3.14)	0.02*
Infliximab (TNF blocker)	77 (35.6)	131 (26.9)	1.51 (1.07-2.12)	0.02*
Acetaminophen	190 (88.0)	398 (81.1)	1.71 (1.07-2.73)	0.02*
NSAIDs	206 (94.9)	463 (92.8)	1.46 (0.73-2.92)	0.28
Naproxen	168 (77.8)	371 (75.3)	1.15 (0.79-1.68)	0.47
Ibuprofen	189 (87.5)	415 (84.0)	1.33 (0.83-2.13)	0.23
Monoclonal anti-TNF	135 (62.2)	295 (59.1)	1.14 (0.82-1.58)	0.44
Any biologics/biosimilars	156 (71.9)	343 (68.7)	1.16 (0.82-1.65)	0.40
Apremilast	6 (2.9)	12 (2.5)	1.15 (0.43-3.11)	0.78
Secukinumab	21 (9.8)	45 (9.3)	1.06 (0.61-1.82)	0.84
Etanercept	86 (40.0)	207 (42.3)	0.91 (0.66-1.26)	0.56
Adalimumab	108 (50.0)	241 (49.1)	1.04 (0.75-1.43)	0.82
Golimumab	27 (12.5)	47 (9.8)	1.32 (0.80-2.18)	0.28
Marijuana	37 (17.1)	71 (14.2)	1.24 (0.80-1.91)	0.33
Opioids	116 (53.5)	240 (48.1)	1.24 (0.90-1.71)	0.19

Table 2. Comparison of disease characteristics & treatment between AS patients with and without uveitis

Result

Variable	Adjusted OR (95% CI)	P value	
Disease subtype			
Enteropathic arthritis associated with IBD	2.31 (1.49-3.60)	<0.001	
Current/prior medication use			
Indomethacin	1.47 (1.03-2.09)	0.03	
Prednisolone	1.79 (1.21-2.66)	0.004	
Waist or sacrum pain	1.66 (1.10-2.50)	0.02	
Knee pain	1.53 (1.04-2.25)	0.03	
	Uveitis Median (IQR), n=228	No Uveitis Median (IQR), n=560	P-value
Total EASi-QoL	28.0 (32.0)	29.0 (29.0)	0.89
Physical function	8.0 (11.0)	9.0 (9.0)	0.55
Disease activity	7.0 (6.0)	8.0 (7.0)	0.75
Emotional well-being	5.0 (9.0)	5.0 (8.0)	0.42
Social participation	6.0 (10.0)	7.0 (8.0)	0.76

Table 3. Multivariate logistic regression analysis demonstrating characteristics independently associated with uveitis after adjustment for sex, age, ethnicity, income level, & full-term employment status

Table 4. EASi-QoL Total and Domain Scores were not significantly different between AS subjects with or without uveitis by Mann-Whitney U test
IQR:inter-quartile range

Table 5. EASi-QoL response (by Mann-Whitney U test)

Reporting top 2 levels of impairment (Very limited ability)	Uveitis % of response	No Uveitis % of response	P-value	Reporting top 2 levels of impairment	Uveitis % of response	No Uveitis % of response	P-value
Lifting a child	35.9	35.4	0.90	Felt embarrassed	14.7	13.1	0.55
Walking one mile	27.2	28.7	0.68	Worry about the future	33.6	29.1	0.22
Standing for 30 mins	32.3	30.0	0.55	Interfere with ability to concentrate	29.8	14.3	0.06
Getting up from sitting	12.4	11.3	0.67	Lack drive or motivation	25.0	22.8	0.53
Finding a comfortable position to relax	25.3	26.8	0.68	Felt downhearted or low	23.5	20.0	0.30
Dressing or undressing	6.9	5.7	0.52	Interfered with normal work	28.1	26.6	0.67
Pain or discomfort	27.6	25.8	0.60	Interfered with family life or friendships	17.5	15.8	0.58
Interfere with sleep	30.0	27.1	0.44	Interfered with travelling	14.7	15.2	0.87
Felt tired or lack energy	42.8	38.5	0.28	Interfered with ability to keep physically active	30.9	31.7	0.84
Felt morning stiffness	30.9	31.5	0.88	Interfered with QoL	33.6	34.5	0.83

Conclusions

- Among AS patients, uveitis was associated with bowel disease, sacrum, ribs, heel and knee pain
- A greater proportion of AS patients with uveitis have received indomethacin, methotrexate and infliximab treatment compared to those without uveitis
- Uveitis may affect quality of life such as the ability to concentrate (p=0.06)

References

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Disclosures : J. Rosenbaum receives support from Alcon Research Institute, the Spondylitis Association of America (SAA), and Pfizer; consults for AbbVie, Gilead, Novartis, Regeneron, and UCB; holds stock in Novartis; and receives royalties from UpToDate. R Howard and Laurie Savage are employees of the SAA. The SAA Spondyloarthritis Life Impact Survey was funded by Novartis and UCB.