Clinical Characteristics of Late-Onset Spondyloarthritides

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INTRODUCTION

- Spondyloarthritis (SpA) are a group of chronic rheumatic disorders clinically characterized by inflammatory back pain, peripheral arthritis, enthesitis, dactylitis, and uveitis.
- SpA is comprising of ankylosing spondylitis (AS), psoriatic arthritis (PsA), inflammatory bowel disease (IBD)-related arthritis, reactive arthritis (ReA), and undifferentiated SpA (uSpA).[1]
- Late onset spondyloarthritis (LOSpA) is considered rare but cases are expected to increase as the U.S. life expectancy increases.
- Early and late-onset SpA are considered pathologically similar, but several small observational studies suggest that they present with different clinical characteristics.[2]
- Further, few research studies have quantified the effectiveness of tumor necrosis factor inhibitor (TNFi) therapy in LOSpA.[3]

METHODS

- Study design: A retrospective cohort analysis was performed using US Veterans in the Department of Veterans Affairs (VA) Program to Understand the Longterm Outcomes in SpondyloARthritis registry (PULSAR).

- Participants: Patients who were diagnosed with ankylosing spondylitis, psoriatic arthritis, reactive arthritis, undifferentiated spondyloarthritis, or IBD-associated arthritis were included in the study. Late-onset spondyloarthritis (SpA) was defined as symptom onset beginning after age 50. If individuals had more than one SpA diagnosis, only their earliest-diagnosed SpA was included in analyses.

- Procedure: Standardized electronic medical record templates obtained at time of visits include the following baseline variables: sociodemographic data (age, sex, self-reported race/ethnicity, education [years]), smoking status, and HLA-B27 status. Erythrocyte sedimentation rate (ESR), C-reactive protein (CRP), numerical rating scores (NRS; 0-10) for pain, Bath Ankylosing Spondylitis Disease Activity Index (BASDAI) and Bath Ankylosing Spondylitis Functional Index (BASFI) were collected at enrollment. Current medications and reasons for discontinuation of medication were also documented.

- Statistical methods: The TNFi therapies including in this analysis consisted of etanercept, adalimumab, golimumab, certulizumab and infliximab. Reasons for discontinuation for each course of TNFi were: 1) primary lack of TNFi response (2) secondary loss of TNFi response (response to the TNFi,,within 6 months of TNFi initiation followed by loss of efficacy at some point >=6 months TNFi exposure), 3) adverse drug reaction(s), 4) patient concern for risk of adverse drug reaction, 5) financial or access barriers, 6) unnecessary due to minimal disease.

RESULTS

- There were a total of 539 patients eligible for analysis, 424 with EOSpA and 115 with LOSpA.
- The median age at disease onset was 29.3 years for EOSpA and 58.3 years for LOSpA. Demographic information for the cohort appears in Table 1.
- Among these patients, 236 (43.8%) were diagnosed as PsA, 234 (43.4%) as AS, 37 (6.9%) as ReA, 28 (5.2%) as USpA, and 4 (0.7%) as IBD-related arthritis.
- Significantly more patients with early-onset SpA were human-leukocyte antigen (HLA) B27 positive (P<0.01).
- For both late-onset and early-onset SpA patients, the most common reason for TNFi discontinuation was secondary failure (42% early-onset, 36% late-onset), followed by adverse events (23% early-onset, 27% late-onset).
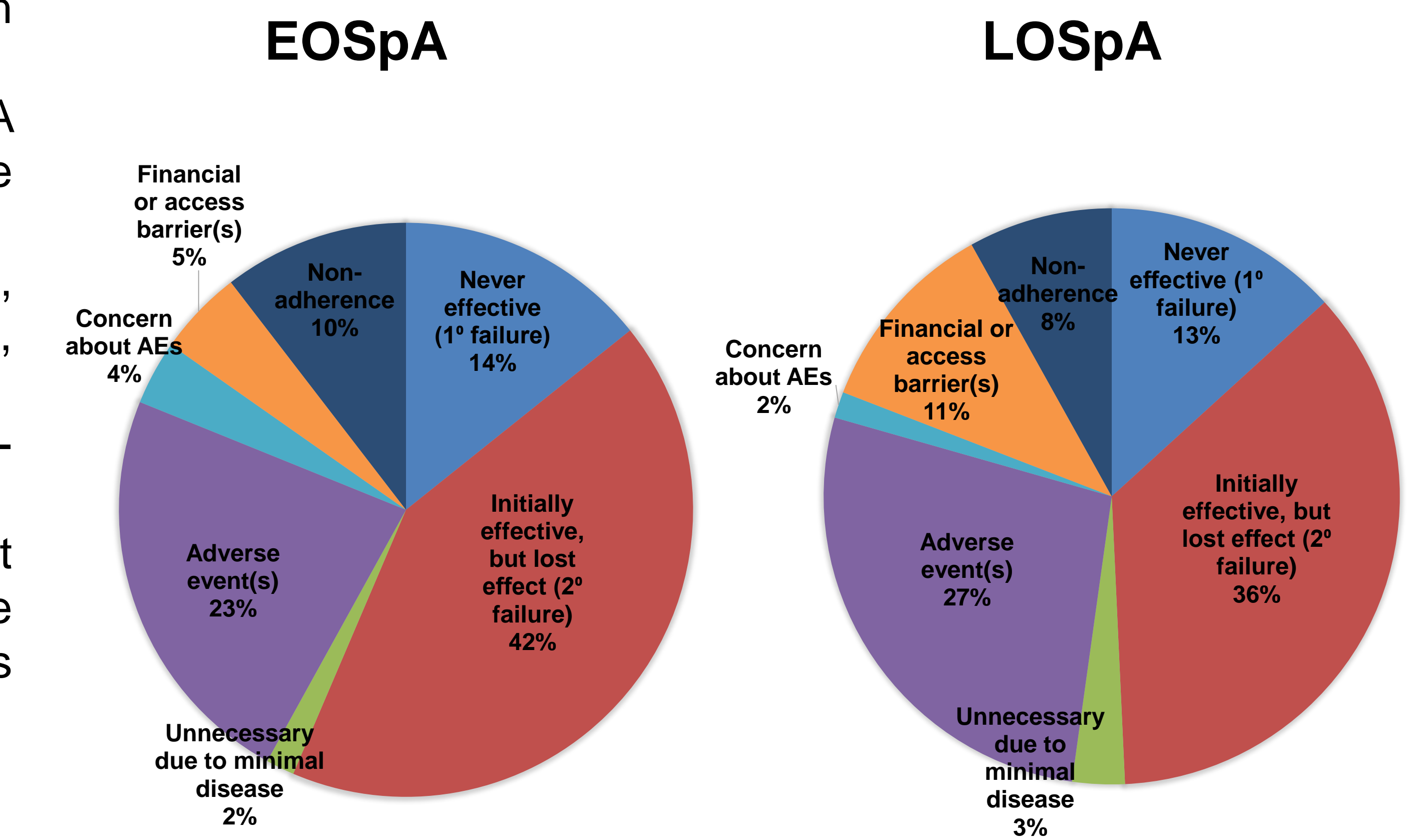
Table 1: Patient Demographics

	Overall (N=539)	EOSpA (N=424)	LOSpA (N=115)	P-value
Age at onset (yrs)	35.5	29.3	58.3	<0.001
Age at enrollment (yrs)	54.8	51.9	65.7	<0.001
Sex, % male	92.7	92.6	93.0	0.882
Race/Ethnicity, (%)				
Caucasian	75.5	74.8	78.3	0.442
African American	11.5	12.5	7.8	0.164
Hispanic	7.4	7.5	7.0	0.831
Asian	1.3	1.4	0.8	0.648
Other/Unknown	4.0	3.2	6.0	0.146
Smoking Status, %				
Never Smoker	32.1	33.4	27.1	0.202
Former Smoker	43.1	38.1	61.2	<0.001
Current Smoker	24.8	28.4	11.7	<0.001
Education (yrs)	14.2	14.2	14.1	0.687

Table 2: Clinical Characteristics

	Overall (N=539)	EOSpA (N=424)	LOSpA (N=115)	P-value
Clinical Diagnosis				
Ankylosing Spondylitis	234 (43.4%)	215 (50.7%)	19 (16.5%)	-
Psoriatic Arthritis	236 (43.8%)	152 (35.8%)	84 (73%)	-
Reactive Arthritis	37 (6.9%)	33 (7.8%)	4 (3.5%)	-
Undifferentiated SpA	28 (5.2%)	24 (5.7%)	4 (3.5%)	-
IBD-related Arthritis	4 (0.07%)	0 (0%)	4 (3.5%)	-
Clinical Characteristics				
HLA-B27 positive, %	44.9	52.4	17.4	<0.001
Mean BASDAI	5.21	5.25	5.09	0.482
Mean BASFI	5.19	5.15	5.35	0.469
Mean ESR (mm/hr)	17.7	17.3	19.1	0.387
Mean CRP (mg/L)	8.11	8.08	8.23	0.898
Mean Pain Score	5.56	5.62	5.38	0.361
Physician's Gllobal Assessment	35.4	36.3	31.8	0.153

Figure 1: Reasons for TNFi Discontinuation

EOSpA

LOSpA

DISCUSSION

- This study suggests that LOSpA patients have a lower frequency of HLA B27.
- The majority of LOSpA patients had psoriatic arthritis, in contrast to other studies showing a high prevalence of undifferentiated SpA.
- The reasons for TNFi discontinuation are similar for early-onset and late-onset SpA.
- In contrast to approach of prior studies, use of the date of symptom onset, rather than date of diagnosis, likely resulted in a more accurate classification of cases in the study.
- Limitations of the study include a restricted demographic diversity of subjects due to the patient population of the VA.
- Strengths of the study include the substantial number of subjects, the inclusion of multiple potential comorbidities, and the length of follow-up.

FUTURE DIRECTIONS

- Evaluate the imaging characteristics in LOSpA and EOSpA patients.
- Evaluate clinical outcomes in older onset SpA patients to better quantify the effectiveness of treatments for this population.

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pulsar Longitudinal Spondylitis Assessment Registry