

Characterization of Non-radiographic Axial Spondyloarthritis Patients and the Burden of Disease in Routine Clinical Practice

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Background

Axial spondyloarthritis [AxSpA and particularly non-radiographic (nr)AxSpA] has one of the longest diagnostic delays in rheumatology. Although improving, lack of radiographic evidence of disease and competing diagnoses continue to hamper early detection and treatment. Demographics and the presence of extra-articular manifestations and comorbidities can be factors in response to treatment and better understanding of relevant patient subsets is key to improving patient outcomes.

Methods

This study utilized data from the OM1 AxSpA Premium Dataset (OM1, Inc; Boston, MA), which follows approximately 30,000 AxSpA patients in the U.S. managed by rheumatologists longitudinally with deep clinical data, including laboratory, patient-reported and disease activity information, and linked administrative claims starting from 2013. Study inclusion criteria included diagnoses of ankylosing spondylitis (AS) and non-radiographic AxSpA [as determined by diagnosis codes and a machine-learning (ML) based algorithm]. The nrAxSpA cohort excluded patients who were later characterized as having AS. Demographics, comorbidities and associated manifestations, DMARD exposure and maximum BASDAI during follow-up were evaluated.

Results

- A total of 20,065 AxSpA patients were included in the study, including 11,171 (81%) with at least one BASDAI score available.
- Mean age at start of follow-up was 49.9 years (SD 15.2) in the AS cohort (N=14,435) and 47.8 (SD 14.4) in the AS and nrAxSpA (N=5,630) cohorts, respectively (Figure 1)
- Ratio of male to female was close to 1:1 in AS, but closer to 1:3 in nrAxSpA (Table 1).
- Rates of ‘ever’ treatment with a DMARD was similar (85.0% AS, 80.0% nrAxSpA), and the proportion of patients with a maximum BASDAI in the “active” disease range (≥ 4) during follow-up was higher in the nrAxSpA group (43% versus 31% AS) (Figure 2).
- Comorbidity patterns differed in the two groups, with nrAxSpA patients more commonly diagnosed with psoriasis, psoriatic arthritis, enthesitis, fibromyalgia, and depression. Uveitis was more commonly recorded in the AS cohort (10.7% vs. 6.5%).
- Rates of concomitant inflammatory bowel disease were similar in the two cohorts (Table 1).

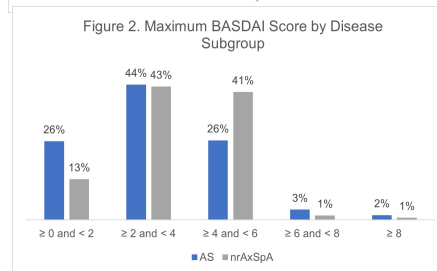
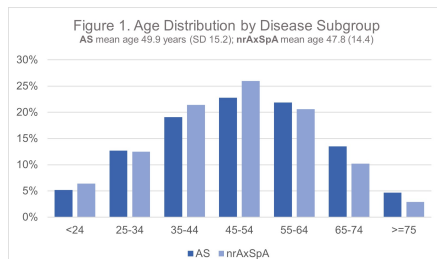


Table 1. Patient Demographics and Comorbidities by Disease Subgroup

	AS Patients (N = 14,435)	nrAxSpA Patients (N=5,630)
Sex (female)	6,820 (47.3%)	4,437 (78.8%)
Race		
White	9,738 (67.5%)	4,025 (71.5%)
Black	633 (4.4%)	304 (5.4%)
Other	435 (3.0%)	80 (1.4%)
Unknown	3,629 (25.1%)	1,221 (21.7%)
Ethnicity		
Hispanic	722 (5.0%)	279 (5.0%)
Non-Hispanic	10,890 (75.4%)	4,370 (77.6%)
Unknown	2,823 (19.6%)	981 (17.4%)
Crohn's disease (CD)	564 (3.9%)	243 (4.3%)
Ulcerative colitis (UC)	402 (2.8%)	208 (3.7%)
Psoriasis (PsO)	1,169 (8.1%)	889 (15.8%)
Psoriatic arthritis (PsA)	1,328 (9.2%)	1,085 (19.3%)
Enthesitis	3,788 (26.2%)	2,573 (45.7%)
Uveitis	1,546 (10.7%)	364 (6.5%)
Fibromyalgia	2,785 (19.3%)	2,367 (42.0%)
Depression	3,685 (25.5%)	2,614 (46.4%)
Treated with DMARD (ever)	12,275 (85.0%)	4,504 (80.0%)

Conclusions

- In this real-world cohort of patients managed by rheumatologists, patients identified as having nrAxSpA had a high burden of disease and comorbidities
- Machine learning may provide an effective means of identifying likely patients early in their disease and speed referral to rheumatologists
- Improved appreciation of nrAxSpA is necessary to optimize patient outcomes now that advanced therapies are available for both AS and nrAxSpA, particularly for female patients who may be overlooked in what was commonly considered a male-dominated disease