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Comparison of first biologic drug persistence in patients with ankylosis spondylitis and non-radiographic axial spondyloarthritis: data from the SPARCC registry.

Objectives: Our primary objective was to describe and compare the persistence of the first biologic drug used in patients with ankylosing spondylitis (AS) and non-radiographic axial spondyloarthritis (nr-axSpA). The secondary objectives were to examine the effect of concomitant use of disease-modifying antirheumatic drugs (DMARDs) and/or nonsteroidal anti-inflammatory drugs (NSAIDs) on drug persistence, and to explore reasons for drug discontinuation.
Methods: Subjects with either AS or nr-axSpA were identified from the SpondyloArthritis Research Consortium of Canada (SPARCC) registry between 2003 and 2018. Demographic, clinical and prescription data were recorded by clinicians at every visit. To assess drug persistence, Kaplan-Meier curves were constructed from the time of first biologic initiation until its discontinuation and persistence was compared between disease subtypes using the log-rank test. Subanalyses were performed according to infliximab, etanercept, adalimumab, golimumab, concomitant DMARDs and concomitant NSAIDs.
Results: A total of 385 subjects were analyzed (349 AS, 36 nr-axSpA). Compared to the nr-axSpA group, subjects with AS were predominantly male (69% vs 50%), more likely to have ever smoked (46% vs 19%), longer disease duration (17.2 ± 11.2 vs 11.3 ± 9.0 years) and higher C-reactive protein levels (18.3 ± 31.2 vs 6.4 ± 12.0 mg/L), yet had similar human leucocyte antigen (HLA) B27 status (75% vs 75%), disease activity score (BASDAI) and functional score (BASFI). AS subjects showed longer drug persistence compared to nr-axSpA subjects (p-value < 0.01), specifically, the proportion persistent to first biologic at year 1 (75% AS vs 60% nr-axSpA), year 3 (61% vs 40%), year 5 (50% vs 26%) and year 10 years (39% vs 20%). Examination by drug revealed statistically superior persistence for AS patients, compared to nr-axSpA prescribed with infliximab (p-value = 0.03). Concomitant use of biologic with DMARDs and/or NSAIDs did not show any significant difference between the two groups. Treatment discontinuations were primarily due to lack of efficacy (49.8%) or side effects (19.6%) and no differences were seen between disease groups.
Conclusion: In this real-world study, we observed longer drug persistence in bio-naive AS subjects initiating a first biologic agent compared to those with nr-axSpA. Further research is needed to identify effective predictors of treatment survival in axial spondyloarthritis subtypes.