Rheumatology Care Journey Among Patients with Psoriatic Arthritis or Axial Spondyloarthritis in the United States

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Objective

To describe (for physicians, payers, and policy makers) the real-world clinical journey of patients with psoriatic arthritis (PsA) or axial spondyloarthritis (axSpA) in the United States.

Background

- There is limited literature providing a comprehensive view of the care journey of patients with PsA or axSpa within rheumatology clinics in the United States.

Methods

- Data were extracted from the United Rheumatology Normalized Integrated Community Evidence (UR-NICE) database (April 2015–March 2020).
- Eligible patients were ≥18 years of age and had ≥2 rheumatology visits with PsA or axSpA diagnosis 30–365 days apart.
- First rheumatology visit with PsA or axSpA diagnosis was index; baseline was from earliest record up to day before index. Depending on available data, duration of follow-up was up to 2 years from index; patients with PsA were censored at axSpA diagnosis and vice versa (**Figure 1**).
- Demographics, clinical characteristics, and diagnosis/treatment patterns were assessed using descriptive statistics. To account for effects of new interleukin (IL)-17 inhibitor (i) therapies introduced in 2016 and reflect current prescribing practices, only results from index on/after January 2017 were reported.

Results

- There were 9,201 patients with PsA and 3,131 patients with axSpA (**Figure 2**); baseline characteristics can be found in **Table 1**.
  - There were 363/9,201 patients with PsA diagnosed with axSpA during follow-up; for patients with axSpA, 440/3,131 were diagnosed with PsA.
- Baseline history of chronic inflammatory conditions occurred in 68% (n=6,259) of patients with PsA (primarily psoriasis; n=4,564; 50%) and 49% (n=1,546) of patients with axSpA (primarily rheumatoid arthritis; n=840; 27%; **Table 1**).
- At first rheumatology visit, 51% (n=4,702) and 55% (n=1,709) of patients had undiagnosed PsA and axSpA respectively.
  - Median (interquartile range) days from first visit to diagnosis was 96 (28–588) for PsA and 89 (23–504) for axSpA.
- At baseline, 29% (n=2,099) of patients with PsA were prescribed biologic/targeted synthetic (b/ts) disease-modifying antirheumatic drugs (DMARDs) and 27% (n=1,914) conventional synthetic (cs) DMARDs, versus 79% (n=7,269) and 53% (n=4,917) during follow-up (**Figure 3**).
  - Tumor necrosis factor inhibitors (TNFi) were the most prescribed bDMARD during follow-up (54%; n=4,991).
- Corticosteroids, nonsteroidal anti-inflammatory drugs (NSAIDs), and opioids were prescribed for 37% (n=2,660), 39% (n=2,800), and 17% (n=1,215) of patients with PsA, respectively, at baseline and 62% (n=5,716), 62% (n=5,713), and 22% (n=1,977) during follow-up (**Figure 3**).
- Patients with axSpA had similar medication prescribing patterns (**Figure 4**).
- Approximately 45% of patients (PsA or axSpA) initiated biologics within 90 days after diagnosis.
  - Average days from diagnosis to first prescription was 13 for PsA and 17 for axSpA.
  - Most new initiations were TNFi, 57% (PsA) and 92% (axSpA) of patients.
- No change in biologics at the mechanism of action (MOA) level occurred after 90 days from diagnosis up to 2 years for 75% (PsA) and 81% (axSpA) of patients.
- At baseline, 29% (n=2,101) of patients with PsA had documentation of completed or ordered imaging (X-ray or magnetic resonance) versus 49% (n=4,523) during follow-up. For axSpA: 34% (n=818) versus 53% (n=1,646).
- All patients had ≥1 record of any disease activity measure before and after PsA/axSpA diagnosis; however, the overall use was low (**Figures 5 and 6**).
  - Excluding general pain, the average number of instances per patient that each measure was captured during follow-up was <3.
  - General pain was the most frequently captured measure during follow-up (>78% of patients with PsA/axSpA).
  - Before and after diagnosis, there was an especially low use of Simplified Disease Activity Index (SDAI) and Disease Activity Score in 28 joints (DAS28) among patients with PsA and Bath Ankylosing Spondylitis Disease Activity Index (BASDAI) and Ankylosing Spondylitis Disease Activity Score (ASDAS) among patients with axSpA.

Limitations

Inaccuracies in electronic medical records (EMRs) either due to miscoding or patients' recall bias | Medication information based on prescription data from EMRs, not verified by pharmacy or usage data | Low prevalence of chronic inflammatory conditions at baseline relative to other data sources[1,2] and low utilization of imaging diagnosis may be due to underreporting and the inherent incompleteness of real-world data | Medical information from providers who are not UR-NICE participants were not analyzed.

Conclusions

This study documents real-world challenges to diagnosing PsA or axSpA as shown by the high rates of diagnosis with other inflammatory conditions at baseline and the protracted time to definitive PsA or axSpA diagnosis. Increased use of diagnostic imaging as well as more consistent application of disease activity measures may help guide treatment decisions (e.g. a treat-to-target strategy) and improve quality of care provided.

Summary

This study describes the clinical journey of patients diagnosed with PsA or axSpA within rheumatology clinics in the United States

Identification Period

April 2015 to March 2020

The UR-NICE Database

Inclusion Criteria

≥18 years old

≥2 visits with PsA or axSpA diagnosis 30–365 days apart

Diagnostic Patterns

Baseline

PsA: **68%** of patients diagnosed with other chronic inflammatory conditions pre-diagnosis

axSpA: **49%** of patients diagnosed with other chronic inflammatory conditions pre-diagnosis

Index

PsA: **49%** Diagnosed at first visit. Undiagnosed patients had **96 days** from first visit **to diagnosis**

axSpA: **45%** Diagnosed at first visit. Undiagnosed patients had **89 days** from first visit **to diagnosis**

Low utilization of imaging diagnostics pre- and post-diagnosis **may be due to poor documentation**

Disease Activity Measures

All patients had ≥1 record of any disease activity measure pre- and post-diagnosis; however, the use of each disease activity measure was low

PsA: SDAI and DAS28 were reported in **<10%** of patients **pre-diagnosis** and **<14% post-diagnosis**

axSpA: BASDAI and ASDAS were reported in **<12%** of patients **pre-diagnosis** and **<20% post-diagnosis**

General pain was the most reported measure (**≥78%**) among patients with **PsA or axSpA**

Medications

PsA: **Increase** in prescribed medication was **highest** for **b/tsDMARDs (+50%)** and **lowest** for **opioids (+5%)** post-diagnosis

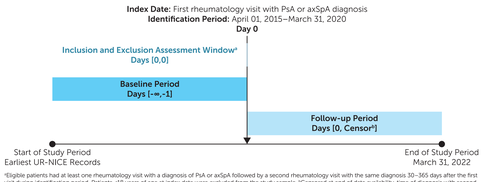
axSpA: Increase in prescribed medication was highest for b/tsDMARDs (+50%) and lowest for opioids (+7%) post-diagnosis

TNFi was the most prescribed medication (**≥54%**) following **PsA or axSpA** diagnosis

Clinical Implications

There is an unmet need for increased application of diagnostic imaging and disease-specific activity measures to inform evaluation and management of patients with PsA and axSpA

Figure 1 Study design



[a]Eligible patients had at least one rheumatology visit with a diagnosis of PsA or axSpA followed by a second rheumatology visit with the same diagnosis 30–365 days after the first visit during identification period. Patients <18 years of age at index date were excluded from the study sample. *Censored at end of data availability, time of diagnosis with second disease of interest (PsA or axSpa), or end of 2-year follow-up period.

Figure 2 Study attrition

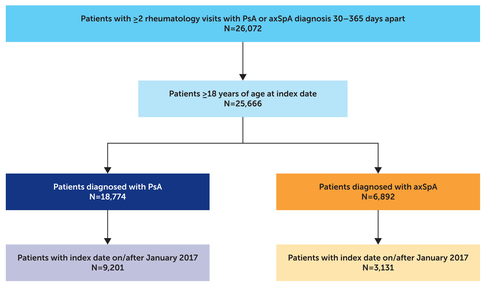
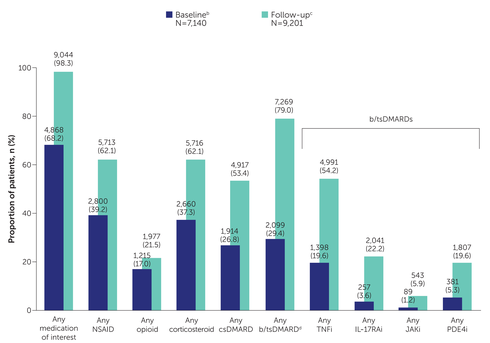


Table 1 Baseline demographic and clinical characteristics of patients with PsA or axSpA[a]

Demographic and clinical characteristics	PsA N=9,201	axSpA N=3,131
Age, years, mean (SD)	54.4 (13.7)	49.6 (15.4)
Female, n (%)	5,542 (60.2)	1,650 (52.7)
Race, n (%)		
White	6,789 (73.8)	2,089 (66.7)
African American	179 (1.9)	151 (4.8)
Asian	97 (1.1)	49 (1.6)
Other	1,109 (12.1)	353 (11.3)
Missing	1,027 (11.2)	489 (15.6)
Ethnicity, n (%)		
Non-Hispanic/Latino	5,402 (58.7)	1,781 (56.9)
Hispanic/Latino	264 (2.9)	106 (3.4)
Other/Missing	3,535 (38.4)	1,244 (39.7)
Payer insurance, n (%)		
Commercial insurance	6,613 (71.9)	2,487 (79.4)
Medicaid	134 (1.5)	48 (1.5)
Medicare	2,454 (26.7)	596 (19.0)
Charlson comorbidity index, mean (SD)	0.3 (0.7)	0.4 (0.6)
Chronic inflammatory conditions, n (%)	6,259 (68.0)	1,546 (49.4)
Psoriasis	4,564 (49.6)	122 (3.9)
Rheumatoid arthritis	1,860 (20.2)	840 (26.8)
Other chronic non-inflammatory conditions, n (%)	2,510 (27.3)	724 (23.1)
Osteoarthritis	2,160 (23.5)	589 (18.8)
Hyperlipidemia	303 (3.3)	63 (2.0)
Hypertension	906 (9.8)	231 (7.4)
Obesity	457 (5.0)	106 (3.4)
Fibromyalgia	583 (6.3)	213 (6.8)

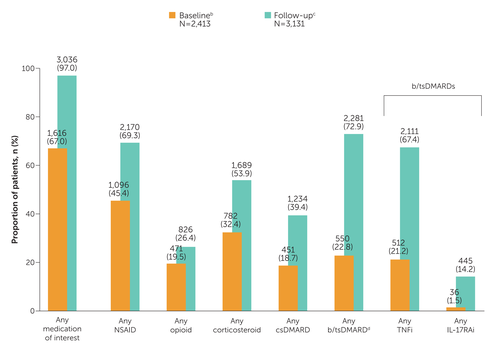
[a]Results shown for patients with index on/after January 2017; data were stratified by index date to reduce the impact of clinical practice change due to the introduction of new IL-17i therapies at the end of 2016. Percentages may not equal 100 due to rounding.

Figure 3 Medication prescribing pattern in patients with PsA[a]



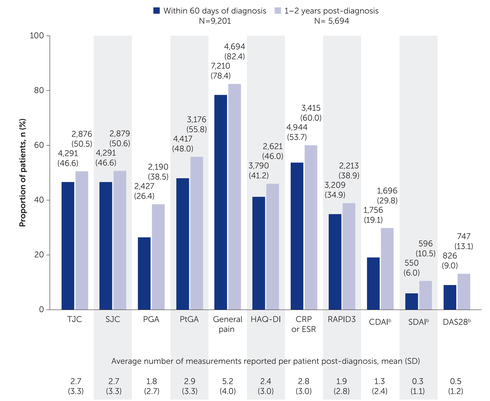
[a]Results shown for patients with index on/after January 2017; data were stratified by index date to reduce the impact of clinical practice change due to the introduction of new IL-17i therapies at the end of 2016. [b]Baseline period was from earliest records up to but not including index date; baseline data not available for all eligible patients. [c]Follow-up period lasted up to 2 years after index, diagnosis with second disease of interest, or the end of study period. [d]The bDMARDs, IL-12/23i, IL-23i, and CTLA-4-Ig, had low use at baseline (<2%) and during follow-up (<9.4%). The change in use from baseline to follow-up ranged from 1.5%–7.4%.

Figure 4 Medication prescribing pattern in patients with axSpA[a]



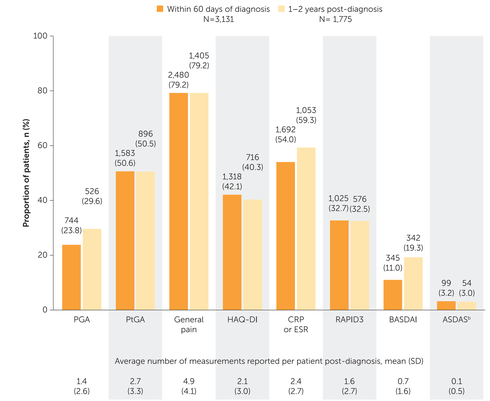
[a]Results shown for patients with index on/after January 2017; data were stratified by index date to reduce the impact of clinical practice change due to the introduction of new IL-17i therapies at the end of 2016. [b]Baseline period was from earliest records up to but not including index date; baseline data not available for all eligible patients. [c]Follow-up period lasted up to 2 years after index, diagnosis with second disease of interest, or the end of study period. [d]The bDMARDs, IL-12/23i, IL-23i, and CTLA-4-Ig, had low use at baseline (<0.7%) and during follow-up (<1.1%). The change in use from baseline to follow-up ranged from 0.2%–0.7%. The bDMARDs, JAKi and PDE4i, had low use at baseline (<0.6%) and during follow-up (<1.6%). The change in use from baseline to follow-up ranged from 0.4%–1.0%.

Figure 5 Use of disease activity measures in patients with PsA[a]



[a]Results shown for patients with index on/after January 2017; data were stratified by index date to reduce the impact of clinical practice change due to the introduction of new IL-17i therapies at the end of 2016; [b]Not recorded in UR-NICE, considered available if all components were present.

Figure 6 Use of disease activity measures in patients with axSpA[a]



[a]Results shown for patients with index on/after January 2017; data were stratified by index date to reduce the impact of clinical practice change due to the introduction of new IL-17i therapies at the end of 2016; [b]Not recorded in UR-NICE, considered available if all components were present.

ASDAS: Ankylosing Spondylitis Disease Activity Score; **axSpA:** axial spondyloarthritis; **BASDAI:** Bath Ankylosing Spondylitis Disease Activity Index; **b/tsDMARDs:** biologic/targeted synthetic disease-modifying antirheumatic drugs; **CDAI:** Clinical Disease Activity Index; **CRP:** c-reactive protein; **csDMARD:** conventional synthetic disease-modifying antirheumatic drugs; **CTLA-4-Ig:** cytotoxic T lymphocyte-associated antigen-4 immunoglobulin; **DAS28:** Disease Activity Score in 28 joints; **EMR:** electronic medical record; **ESR:** erythrocyte sedimentation rate; **HAQ-DI:** Health Assessment Questionnaire-Disability Index; **i:** inhibitor; **IL:** interleukin; **JAK:** janus kinase; **MOA:** mechanism of action; **NSAID:** non-steroidal anti-inflammatory drug; **PDE4:** phosphodiesterase-4; **PGA:** physician global assessment; **PsA:** psoriatic arthritis; **PtGA:** patient global assessment; **R:** receptor; **RAPID3:** routine assessment of patient index data 3; **SD:** standard deviation; **SDAI:** simplified disease activity index; **SJC:** swollen joint count; **TJC:** tender joint count; **TNF:** tumor necrosis factor; **UR-NICE:** United Rheumatology Normalized Integrated Community Evidence.

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References: [1]Mercola JF, et al. Clin Rheumatol 2021;40(10):4061–70; [2]Curtis JR, et al. ACR/QIR 2021;3(11):743–52. **Author Contributions:** Substantial contributions to study conception/design, or acquisition/analysis/interpretation of data: **RJ**, **CS**, **SB**, **AC**; drafting of the publication, or revising it critically for important intellectual content: **RJ**, **CS**, **SB**, **AC**; final approval of the publication: **RJ**, **CS**, **SB**, **AC**. **Author Disclosures: RJ:** Consultant to UCB and Novartis; speaker for Amgen; **CS,SB:** Employees and shareholders of UCB Pharma; **AC:** Executive at United Rheumatology; employee, executive, and shareholder of Exagen, Inc.; consultant to Pacira Biosciences. **Acknowledgements:** This study was funded by UCB Pharma. We would like to thank the patients and their caregivers in addition to the investigators and their teams who contributed to this study. The authors acknowledge Nnenna Ene, BA, Costello Medical, Boston, MA, for medical writing support, and the Costello Medical Creative team for design support. All costs associated with development of this poster were funded by UCB Pharma.