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Risk Factors Associated with Resistance to Multiple Biologic Agents in Psoriatic Arthritis: A Descriptive Retrospective Case-Control Cohort Study.

Difficult-to-treat psoriatic arthritis (D2T-PsA) has been studied in European and Asian cohorts, but not in North America. This study aimed to identify potential factors associated with D2T-PsA and compare our cohort to previously published cohorts.

A retrospective cohort study was conducted using the Electronic Patient Record of the CHU de Québec-Université Laval hospital organization. Adults (≥ 18 years) were included if they had rheumatologist-diagnosed PsA, had failed conventional synthetic DMARD (csDMARD) therapy, and had received at least one biologic or targeted synthetic drug (b/tsDMARD) before August 2025. Patients with isolated axial disease or another rheumatic disease were excluded. Data on demographics, and response to csDMARDs and each b/tsDMARD were collected. D2T-PsA was defined according to the criteria proposed by Perrotta et al. (2022). Univariate analyses were conducted to identify factors associated with D2T-PsA. Cohort characteristics were also compared with previously published cohorts to assess potential population differences.

232 patients were included in this study, of whom 56 (24.1%) met criteria for D2T-PsA. In the D2T-PsA cohort, 22 (39.3%) were male and the mean (SD) age was 59.1 (10.9) years.

Baseline demographics were similar between D2T-PsA and non-D2T-PsA patients with respect to age, sex, disease duration, comorbidities, and Charlson Comorbidity Index. D2T-PsA patients were more likely to have baseline enthesitis (Odds Ratio [95% Confidence Interval]: 2.15 [1.10, 4.22], $p < 0.05$). After D2T-PsA classification, patients were more likely to receive JAK inhibitors (OR [95% CI]: 11.73 [3.61, 38.13], $p < 0.001$) and corticosteroid co-treatment (OR [95% CI]: 2.33 [1.10, 4.95], $p < 0.05$), but were less likely to receive concurrent csDMARDs (OR [95% CI]: 0.53 [0.28, 0.99], $p < 0.05$) or NSAIDs (OR [95% CI]: 0.39 [0.18, 0.83], $p < 0.05$).

Compared to previously published cohorts, this D2T-PsA cohort had a higher prevalence of baseline enthesitis (39.2% versus 8.8% in a 2022 cohort) and lower prevalence of baseline dactylitis (17% versus 22-30%). Most patients in this cohort received anti-TNF agents as the first b/tsDMARD, and a higher proportion of patients also received anti-IL17 therapy before D2T classification.

D2T-PsA in this cohort was associated with increased likelihood of baseline enthesitis, increased use of JAK inhibitors, and co-treatment with corticosteroids. While this study did not identify any major demographic associations, the cohort was largely similar to other published cohorts. Further research is needed to evaluate psychosocial factors of treatment response and explore whether earlier use of JAK inhibitors may improve outcomes in patients at risk of D2T-PsA.