NON-INTERVENTIONAL/LOW-INTERVENTIONAL STUDY TYPE 1 STUDY REPORT ABSTRACT

Title: Real-world comparative effectiveness of tofacitinib, tumour necrosis factor inhibitors, and interleukin 17 inhibitors among patients with axial spondylarthritis and psoriatic arthritis.

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Keywords: Tofacitinib, Effectiveness, Persistence, Healthcare Resource Utilization, Axial spondyloarthritis

Rationale and background: Management of axial spondyloarthritis (axSpA) and psoriatic arthritis (PsA) focuses on alleviating symptoms, slowing disease progression, and enhancing patient health-related quality of life. Direct comparative clinical data between advanced therapies for axSpA and PsA remained limited, as head-to-head randomized clinical trials are rare, and many existing studies are not powered for formal direct comparisons. Assessment of treatment effectiveness in everyday clinical practice through real-world studies is essential.

Research question and objectives: This study addressed the research question of whether, among AxSpA and PsA patients, real-world treatment effectiveness differs across tofacitinib, TNFi, and IL-17i, and, for AxSpA specifically, how healthcare resource utilization (HCRU) patterns and associated costs compare across these therapies. Primary objectives compared 6-month effectiveness among patients with at least 6 months' enrollment, while secondary objectives assessed 12-month effectiveness among those with at least 12 months' enrollment, evaluated 12-month persistence in both cohorts, and examined AxSpA HCRU and costs at 6 and 12 months.

Study design: Non-interventional retrospective cohort study.

Setting: Adult patients meeting the inclusion and exclusion criteria were split into one of three treatment cohorts based on the treatment that was initiated on the index date: (1) tofacitinib, (2) TNFi (adalimumab, golimumab, infliximab, etanercept, certolizumab pegol), or IL-17i (ixekizumab, secukinumab).

Subjects and study size, including dropouts: The analysis identified 2,252,390 and 602,801 patients with a diagnosis code for AxSpA and PsA, respectively. After applying all of the inclusion and exclusion criteria, the AxSpA 6- and 12-month populations contained 17,846 and 12,549 patients, respectively. The PsA 6- and 12-month populations contained 34,817 and 29,154 patients, respectively.

Variables and data sources: The population of eligible study patients was identified from the Komodo Healthcare Map database, a large US administrative claims database which includes adjudicated longitudinal information on patients' demographics, medical history, medication use, and healthcare utilization and costs.

Results: In the AxSpA 6-month follow-up population, no statistically significant differences in the risk of treatment failure were observed between tofacitinib and either TNFi (HR 0.92; 95% confidence interval (95% CI) 0.84–1.01) or IL-17i (HR 1.00; 95% CI 0.89–1.11). In the PsA 6-month population, the risk of effectiveness failure did not differ between TNFi and tofacitinib (HR 1.00; 95% CI 0.91–1.10). However, IL-17i was associated with a statistically significant, modestly higher risk of effectiveness failure compared with tofacitinib (HR 1.12; 95% CI 1.00–1.26). In AxSpA, 28–32% met the 6-month composite endpoint and 11–14% at 12 months, whereas in PsA, 31–38% met the 6-month endpoint and 17–19% at 12 months. Common contributors to failure were low adherence, initiation of a new pain-medication class, and therapy switching/augmentation. There were no significant differences in the risk of effectiveness failure for TNFi or IL-17i versus tofacitinib across time points, aligning with prior real-world evidence of class-comparable effectiveness.

Discussion: These findings indicate comparable 6-month effectiveness between tofacitinib and TNFi in both AxSpA and PsA, while IL-17i showed a higher risk of effectiveness failure relative to tofacitinib in PsA. Additionally, patient adherence and concurrent pain management are important features of composite failure, supporting treatment selection based on patient characteristics and management goals rather than expected treatment cohort-level differences in short-term effectiveness.

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