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Follow-up of three Janus kinase inhibitors in rheumatoid arthritis patients

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Introduction: Targeted synthetic disease-modifying drugs (tsDMARDs), Janus kinase (JAK) inhibitors, have become an important treatment option in different indications, including rheumatoid arthritis (RA). The patients are also receptive to these drugs due to the route of administration.

The study aimed to conduct an observational follow-up study monitoring patients receiving JAK inhibitor therapy to assess the potential correlations with clinical parameters and their change over specific time points. The primary objective was to characterise the study population, while the secondary objective was to assess changes in studied parameters over time.

Material and methods: Fifty-five RA patients treated with tofacitinib, baricitinib, or upadacitinib at the Department of Rheumatology and Immunology were included in a one-year follow-up study. Clinical assessments were carried out at baseline (T0), after 6 (T6) and 12 months (T12). We evaluated Disease Activity Score 28-joints and the inflammatory markers, C-reactive protein (CRP) and erythrocyte sedimentation rate. Patients' history and discontinuation before T12 were also recorded, together with the reason for stopping treatment. Statistical analysis was carried out, where *p*-values 0.05 were considered significant.

Results: Thirty-five out of 55 RA patients completed the 12-month follow-up study, while 20 patients discontinued due to ineffectiveness or side effects. The JAK inhibitor therapy led to a significant reduction in disease activity by month 6 ($p = 0.001$) and month 12 ($p = 0.001$), and CRP by T6 ($p = 0.016$). Glucocorticosteroid need showed a significant decline by month 6 compared with baseline ($p = 0.006$). Looking at each therapy, disease activity was also found to be significantly reduced; CRP levels did not show a significant reduction, which could be explained by the smaller sample size (13 tofacitinib, 11 baricitinib, 11 upadacitinib).

Discussion: The study provided further evidence for the efficacy of the agents, coming from a real-world experience, clinical setting, where, although contraindications, patient history and local protocol are considered and followed, there are no strict inclusion criteria when starting therapy like in clinical trials. Some patients stopped treatment because of side effects, which were in line with the known safety profiles of these drugs.

Conclusions: Overall, our findings support the effectiveness of JAK inhibitors in routine practice and generally reflect what has been seen in earlier clinical trials.