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Drug survival of interleukin-23 p19 inhibitors compared to other biologics for psoriasis: a cohort study from the British Association of Dermatologists Biologics and Immunomodulators Register (BADBIR)

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Introduction & Objectives: Risankizumab, an interleukin (IL)-23 p19 inhibitor, has high efficacy and a good safety profile for psoriasis from randomised controlled trial evidence, but little is known about its effectiveness and safety when used in routine clinical settings. Our group have previously reported on the real-world outcomes of the IL-23p19 inhibitor guselkumab. Drug survival is a proxy for treatment effectiveness and safety. Our aim was to assess the drug survival of guselkumab and risankizumab compared with other biologics for psoriasis.

Materials & Methods: We conducted a cohort study using BADBIR, a national pharmacovigilance registry of UK and Republic of Ireland psoriasis patients, with data collected between November 2007 and June 2023. We conducted survival analysis and fitted separate multivariable, flexible parametric models for drug survival measuring discontinuation due to ineffectiveness or adverse effects for the exposures of adalimumab (tumour necrosis factor inhibitor), brodalumab, ixekizumab, secukinumab (IL-17 inhibitors), guselkumab, and risankizumab compared with ustekinumab (IL12/23p40 inhibitor), accounting for missing baseline data using multiple imputation. Each treatment course was considered separately. We report the 1-year drug survival for effectiveness and safety and the hazard ratios from the model.

Results: A total of 19,034 treatment courses from 11,877 participants were included with a median follow-up of 2.3 years (interquartile range 0.9-4.4) with 6,815 adalimumab, 5,639 ustekinumab, 367 brodalumab, 1,072 ixekizumab, 3,051 secukinumab, 1,258 guselkumab, and 832 risankizumab exposures. The unadjusted survival functions at year 1 for effectiveness were adalimumab 0.80 (95% confidence interval 0.79-0.81), ustekinumab 0.88 (0.87-0.89), brodalumab 0.80 (0.75-0.84), ixekizumab 0.88 (0.86-0.90), secukinumab 0.85 (0.84-0.86), guselkumab 0.94 (0.93-0.95), and risankizumab 0.95 (0.93-0.96). Treatment with the IL-23p19 inhibitors had the highest survival (guselkumab, adjusted hazard ratio[aHR], 0.28 [0.15-0.53]; risankizumab 0.38 [0.16-0.87]) whereas adalimumab (1.98 [1.76-2.23]) had lower survival compared with ustekinumab for effectiveness. Brodalumab, ixekizumab, and secukinumab had similar drug survival earlier and lower drug survival later in follow-up compared with ustekinumab.

The unadjusted survival functions at year 1 for safety were adalimumab 0.91 (0.90-0.91), ustekinumab 0.94 (0.94-0.95), brodalumab 0.91 (0.87-0.93), ixekizumab 0.91 (0.89-0.93), secukinumab 0.93 (0.92-0.94), guselkumab 0.95 (0.94-0.97), and risankizumab 0.97 (0.96-0.98). The IL-23p19 inhibitors had higher survival due to safety than ustekinumab (guselkumab, aHR 0.66 [0.49-0.89], risankizumab 0.50 [0.27-0.91]); while secukinumab had a similar survival (1.14 [0.98-1.34]); and adalimumab (1.56 [1.39-1.75]), ixekizumab (1.44 [1.15-1.81]), and brodalumab (1.61 [1.15-2.27]) had lower survival for safety compared with ustekinumab.

Conclusion: The results of this study, which includes the largest cohort of psoriasis patients on IL-23p19 inhibitors reported thus far, showed guselkumab and risankizumab had similar drug survival and had the highest drug survival associated with both effectiveness and safety compared with other biologics in BADBIR. Our findings should be taken into consideration for people with psoriasis who value treatment effect longevity and are due to commence biologic therapy.**