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Drug survival of IL-17 and IL-23 inhibitors for psoriasis: a systematic review and meta-analysis

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Introduction & Objectives:

The most recently approved biologics for moderate-to-severe psoriasis are the interleukin (IL)-17 and IL-23 inhibitors. Drug survival is a frequently used outcome to assess drug performance in practice. An overview of the available drug survival studies regarding IL-17 and IL-23 inhibitors is lacking. Therefore, our objective was to perform a systematic review and meta-analysis of drug survival of IL-17 and IL-23 inhibitors for psoriasis.

Materials & Methods:

A systematic review and meta-analysis was conducted by searching 4 databases until July 2022 (PubMed, Embase, Cochrane Library and Web of Science), assessing drug survival of IL-17 and IL-23 inhibitors in patients with psoriasis. The QUIPS tool was used to assess the quality of included studies. A non-parametric random effects model as described by Combescure was used to retrieve distribution-free summary survival curves. Survival probabilities at monthly intervals were extracted from Kaplan-Meier curves using a semi-automated tool. Summary survival curves were constructed per biologic for different discontinuation reasons: overall, ineffectiveness and adverse events, and split for the effect modifier biologic naivety. Results were analyzed separately for real-world patients' data (registries/medical records) and for prescription data (claims/pharmacy).

Results:

Of 1310 abstracts screened for eligibility, 46 studies were included for analysis. Drug survival outcomes of 24,669 patients on secukinumab, ixekizumab, brodalumab, guselkumab and risankizumab were aggregated. Summary survival estimates of real-world studies for overall, ineffectiveness and adverse event related drug survival were high (all point estimates >0.8 at year 1) for included biologics, with similar estimates for secukinumab, ixekizumab, and brodalumab, and higher estimates for guselkumab. All estimates for drug survival were higher in biologic naive than in experienced patients. Estimates of prescription databases were substantially lower than estimates from the primary analyses based on real-world data.

Conclusion:

This meta-analysis showed that the investigated IL-17 and IL-23 inhibitors had high drug survival rates, with very high rates for five-year guselkumab drug survival. We showed that effect modifiers such as biologic naivety, and the source of data used (real-world data vs. prescription databases) is relevant when interpreting drug survival studies.