**Impact of Adverse Events Associated With Medications in the Treatment and Prevention of Rheumatoid Arthritis**

[Costello R](https://www.ncbi.nlm.nih.gov/pubmed/?term=Costello%20R%5BAuthor%5D&cauthor=true&cauthor_uid=31196653)1, [David T](https://www.ncbi.nlm.nih.gov/pubmed/?term=David%20T%5BAuthor%5D&cauthor=true&cauthor_uid=31196653)1, [Jani M](https://www.ncbi.nlm.nih.gov/pubmed/?term=Jani%20M%5BAuthor%5D&cauthor=true&cauthor_uid=31196653)2. [Clin Ther.](https://www.ncbi.nlm.nih.gov/pubmed/31196653) 2019 Jul;41(7):1376-1396. doi: 10.1016/j.clinthera.2019.04.030. Epub 2019 Jun 10.

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Abstract

PURPOSE:

Treatments for rheumatoid arthritis (RA) over the last few decades have transformed the future outlook of the disease. Although patients with clinically apparent RA have a number of therapeutic options, all are associated with the risk of adverse events (AEs). Such therapeutics, facilitated by the identification of novel biomarkers and environmental and genetic factors to predict RA, may allow early detection, prompt treatment, and prevention before the future development of clinically apparent disease. Before choosing such treatments to make informed decisions in this context, however, accurate quantification of benefits and harms of such treatments is vital for participants without symptoms. This review summarizes the AEs reported in trials in preclinical or very early RA, the frequency and risk of primary AEs of concern associated with disease-modifying antirheumatic drugs (conventional, biologic, and targeted), glucocorticoids, and analgesia in clinically apparent RA. Also summarized is the evidence to date to support the quantification of benefit and harms incorporating patient preferences.

METHODS:

This analysis is a narrative review in which individual searches were performed in PubMed and EMBASE for each drug and topic outlined in the review.

FINDINGS:

Current therapies in RA can result in a considerable burden of AEs (serious and nonserious) depending on the individual's baseline risk. The absolute risk of serious AEs to treatments reported in individuals at risk of RA, undifferentiated, or very early inflammatory arthritis trials was low; however, nonserious AEs were not consistently reported. If such therapies prove effective at preventing the onset of RA in high-risk patients, incorporating patient preferences as well as robust quantification of benefits and harms to inform decisions is imperative. Patients' perceptions about treatment in this context may be risk averse or benefit driven. The risk of AEs that may not reverse after drug cessation, such as serious infection and malignancy, seem to be important AEs in such decision-making.

IMPLICATIONS:

The impact of AEs in response to potentially preventative treatment is an important consideration for individuals at high risk of developing RA with minimal symptoms. Robust quantification of treatment effect given baseline risk versus the risks of developing all AEs (including those that may affect quality of life), while incorporating participants' views, will be necessary for future informed decision-making.