DSEN ABSTRACT

Drugs for the Management of Rheumatoid Arthritis: A Systematic Review with Network Meta-analysis

Summary

- One hundred and one studies were included in this systematic review.
- Limited information was available for biologic inadequate responders.

Key messages

- For inadequate responders to methotrexate, the standard approved doses of etanercept, abatacept, tofacitinib, golimumab, certolizumab and tocilizumab most often favoured them over other treatments.
- For inadequate responders to biologics, there is a limited amount of evidence available. There is some evidence to indicate that 8 mg/kg of tocilizumab provides greater benefit than 4 mg/kg of tocilizumab.
- More information is required on the balancing of benefits and harms of abatacept, particularly for patients with inadequate response to methotrexate.

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What is the issue?

- Some individuals with rheumatoid arthritis have an inadequate response to conventional synthetic DMARDs (such as methotrexate (MTX)) or biologic DMARDs, and may be treated with combination DMARD therapy, targeted synthetic DMARDs (e.g., Janus kinase (JAK) inhibitors like tofacitinib) or biosimilars.
- Direct comparisons between biologic therapies are limited; a network meta-analysis can help compare the benefits and harms of available treatment options using both direct and indirect evidence.

What was the aim of the study?

- The aim of this systematic review and network meta-analysis was to assess the benefits and harms of drugs used in treatment-experienced adult patients with moderate to severe rheumatoid arthritis.

How was the study conducted?

- A comprehensive literature search was performed in multiple databases (May 2016) to identify RCTs. References of three Cochrane reviews were also considered.
- Two reviewers selected studies, performed data extraction and Cochrane risk of bias assessments. Pairwise and network meta-analyses were conducted where feasible for benefits and harms.

What did the study find?

- Of 101 RCTs included, 96 provided usable data. Most studies had low risk of bias, though many lacked clear reporting on randomization methods, and incomplete outcome data was a common concern.
- In MTX-inadequate responders, several biologics and targeted therapies (e.g., etanercept, abatacept, tofacitinib) showed improved disease response (ACR50). Abatacept had fewer serious adverse events but was associated with more pain, while certolizumab and tofacitinib reduced pain.
- Among biologic-inadequate responders, evidence was limited. All treatments outperformed background MTX for disease response. Tofacitinib was the only treatment with higher odds of serious adverse events compared to placebo. Analyses showed potential safety concerns for the use of tofacitinib.

This research was funded by CIHR – Drug Safety and Effectiveness Network and conducted by investigators affiliated with the Methods and Applications Group for Indirect Comparisons (MAGIC) and the Cardiovascular Research Methods Centre at the University of Ottawa Heart Institute.

CIHR IRSC Canadian Institutes of Health Research / Instituts de recherche en santé du Canada

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