

# DMARDs, glucocorticoids and biologics equally effective for rheumatoid arthritis

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A study conducted at Copenhagen University Hospital showed that treatment of rheumatoid arthritis (RA) with disease modifying antirheumatic drugs (DMARDs), glucocorticoids, biologic agents, or a combination of agents significantly reduced radiographic evidence of joint destruction, with a relative effect of 48%–52% as compared with placebo. A direct comparison between the combination of a biologic agent plus methotrexate and the combination of 2 DMARDs plus initial glucocorticoids revealed no difference. Study findings are published in the October issue of *Arthritis & Rheumatism*, a journal of the American College of Rheumatology.

DMARDs are commonly used to treat RA by slowing the course of the disease. During the last 10 years, several effective, but expensive, immunoselective biologic agents have been introduced for the treatment of RA. Biologic agents are genetically engineered medications that help block the pathways of inflammation. Because of their expense, biologic agents are typically reserved as second-line drugs for patients who are unresponsive to DMARDs. However, in clinical trials, they have been used to treat patients who have not previously taken DMARDs and now some guidelines recommend biologic agents as first-line treatment for selected patients in whom a poor prognosis is suspected.

Radiographic progression is the most important measure of structural damage in RA. One of the claimed breakthroughs of biologic agents is their potential to arrest radiographic progression. The corresponding ability of DMARDs is less well defined because the effect of DMARDs

on radiographic progression has only sporadically been investigated in randomized trials. The purpose of the present study was to quantify the effect of approved drugs and treatment methods (DMARDs, glucocorticoids, biologic agents, and combination treatments) on the yearly progression of radiographic joint destruction in patients with RA.

The researchers conducted a meta-analysis of full-length studies published in peer-reviewed journals. A total of 70 trials, including 112 comparisons, were identified. Participants included patients with RA diagnosed according to the criteria of the American College of Rheumatology. A total of 16 interventions and 5 subinterventions were defined in 5 main groups: Group 1 was defined as single DMARD versus single DMARD; Group 2 was defined as single DMARD versus placebo or analog; Group 3 was defined as combination DMARDs versus single DMARD; Group 4 was defined as glucocorticoids with or without a DMARD versus placebo or analog with or without a DMARD; Group 5 was defined as a combination biologic agent plus MTX versus MTX or other DMARDs with or without glucocorticoids.

Analysis revealed that treatment with a single DMARD or glucocorticoids significantly reduced radiographic evidence of joint destruction, with a relative effect of 48% [95% CI 33% to 63%] as compared with placebo and that aggressive combination therapy with 2 [95% CI 1.5 to 3.5] DMARDs, a DMARD plus glucocorticoids, or a DMARD plus a biologic agent reduced radiographic joint destruction, with a relative effect of 50% [95% CI 33% to 63%] as compared with single-DMARD therapy. The effect of a combination of 2 DMARDs plus step-down glucocorticoids did not differ from the effect of a biologic agent plus methotrexate.

"This is the first meta-analysis to include all of the antirheumatic drug treatment principles in a single review, including the effects of different combinations of drugs," says study leader Dr. Niels Graudal. He continues, "Our findings remove any previous doubt that may have

existed about the efficacy of single-DMARD treatment on radiographic progression in RA. Furthermore, our findings confirm that aggressive treatment with combination DMARDs does reduce structural joint damage as compared with less-aggressive treatment with a single DMARD and that combination DMARD treatment, especially when combined with periodic glucocorticoids, may be as effective as a biologic agent plus MTX. The recommendation that treatment with a DMARD is the first choice for RA is therefore still valid."

**More information:** "Similar Effects of Disease-Modifying Antirheumatic Drugs, Glucocorticoids, and Biologic Agents on Radiographic Progression in Rheumatoid Arthritis: Meta-Analysis of 70 Randomized Placebo-Controlled or Drug-Controlled Studies, Including 112 Comparisons." Niels Graudal and Gesche Jürgens, *Arthritis & Rheumatism*; Published Online: June 17, 2010 ( [DOI:10.1002/art.27592](https://doi.org/10.1002/art.27592) ); Print Issue Date: October 2010.

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