

Canakinumab shows promise for treatment of large joint osteoarthritis

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An exploratory analysis of data from the CANTOS (Canakinumab Anti-inflammatory Thrombosis Outcomes Study) randomized double-blind, placebo-controlled trial found that patients receiving interleukin-1 β (IL-1 β) inhibitors had significantly lower rates of total hip or total knee replacements over an average follow up of 3.7 years. These findings are important, as no treatments currently exist that can either prevent or slow progression of osteoarthritis. The study is published in *Annals of Internal Medicine*.

In the CANTOS trial, more than 10,000 patients with elevated high-sensitivity C-reactive protein (hs-CRP) levels and a history of myocardial infarction were randomly assigned [canakinumab](#) or placebo injections every 3 months for up to 5 years to determine the [cardiovascular effects](#). Cardiovascular event rates fell among participants receiving a higher dose range of canakinumab, with the greatest magnitude of effect accruing among those with the most robust reductions in hs-CRP and IL-6. CANTOS, therefore, provided the researchers with a unique opportunity to explore the effects of IL-1 β -targeted therapy versus placebo on incidence rates of total hip or total knee replacement surgeries.

In their analysis, researchers from the Novartis Institutes for BioMedical Research (NIBR), University of Leeds and Brigham and Women's Hospital, Harvard Medical School found that the combined incidence rates for total hip or total knee replacements were 40 to 47 percent lower with canakinumab treatment, with all canakinumab doses reducing

the number of joint replacements similarly. The reduction in joint replacements among patients who received canakinumab versus the [placebo group](#) became apparent after only one year of treatment and remained statistically significant when CANTOS participants with a history of crystalline or inflammatory arthritis were excluded. However, the authors provide a cautionary note that the number of women in the trial was relatively low, while knee osteoarthritis is a disease that predominates in [older women](#).

According to the authors of an accompanying editorial from the UC Davis Health, the results of this analysis are both unexpected and exciting. The investigators used elevated hs-CRP level as an entry criterion, and may have identified a subgroup of persons with osteoarthritis in whom inflammatory cytokines activate pathways that accelerate joint degeneration. The authors also note that joint replacement is a robust endpoint and one that might be adapted by the U.S. Food and Drug Administration for evaluating disease-modifying osteoarthritis drugs.

More information: Study:

<https://www.acpjournals.org/doi/10.7326/M20-0527>

Editorial: <https://www.acpjournals.org/doi/10.7326/M20-4938>

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