

Canakinumab reduces risk of cardiovascular events in populations with unmet clinical need

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Two new analyses of data from more than 10,000 heart attack survivors worldwide were presented by investigators from Brigham and Women's Hospital at the 2018 American College of Cardiology meeting. Paul Ridker, MD, director of the Center for Cardiovascular Disease Prevention at BWH, and Brendan Everett, MD, director of the General Cardiology Inpatient Service at BWH, assessed whether the anti-inflammatory therapy canakinumab reduced rates of major adverse cardiovascular events and co-morbidities among high-risk atherosclerotic patients with chronic kidney disease (CKD) or those with pre-diabetes/diagnosed type 2 diabetes, respectively. They found that canakinumab substantially reduced cardiovascular event rates in both populations, while having neither clinically meaningful benefits nor substantive harms with respect to adverse renal events or glucose control. Findings related to patients with or at high risk of diabetes were simultaneously published in the *Journal of the American College of Cardiology* and a paper on the CKD findings is forthcoming.

"Evidence continues to build that inflammation underlies many diseases and health conditions," said Everett. "We find that among heart attack survivors with diabetes or pre-diabetes, canakinumab is effective at reducing risk of [cardiovascular events](#). Our data also suggest that as cardiovascular [disease](#) and diabetes take root, the inflammatory pathways underlying them may diverge."

Everett and colleagues found that canakinumab was equally effective at reducing rates of cardiovascular events among [patients](#) with and without diabetes enrolled in the Canakinumab Anti-inflammatory Thrombosis Outcomes Study (CANTOS). The drug reduced HbA1C levels - a key indicator of glucose tolerance - in patients with diabetes or pre-diabetes for the first six to nine months of the trial, but this effect was not sustained.

In a new analysis led by Ridker, investigators found that canakinumab reduced major adverse cardiovascular event rates among high-risk atherosclerosis patients with moderate to severe [chronic kidney disease](#), with the largest benefits accrued among those who had the most robust anti-inflammatory response. Canakinumab, an IL-1b inhibitor, represents a new class of therapy for atherosclerotic disease that lowers hsCRP and IL-6 with no effect on lipid levels.

"Moving forward, it will be important to extend these data and test the efficacy of canakinumab in patients with end-stage renal failure undergoing dialysis," said Ridker. "In that setting, hsCRP is a powerful predictor of risk while LDL-C is not, and dialysis is one of the only settings where LDL reduction has not been highly effective."

CANTOS was proposed and designed by investigators in the Center for Cardiovascular Disease Prevention at BWH, in collaboration with Novartis Pharmaceuticals. Ridker received financial support for clinical research from Novartis Pharmaceuticals to conduct the CANTOS. Ridker has served as a consultant to Novartis Pharmaceuticals and is listed as a co-inventor on patents held by BWH that relate to the use of inflammatory biomarkers in cardiovascular disease and [diabetes](#) that have been licensed to AstraZeneca and Siemens. Other BWH investigators involved in the new CANTOS analyses include Robert Glynn, PhD, Peter Libby, MD, Aruna Pradhan, MD, MPH, and Jean MacFadyen.

More information: Everett, B et al. "Anti-Inflammatory Therapy with Canakinumab for the Prevention and Management of Diabetes" *Journal of the American College of Cardiology*, 2018.

Provided by Brigham and Women's Hospital

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