New study could inform treatment and prevent heart attack in diabetic patients

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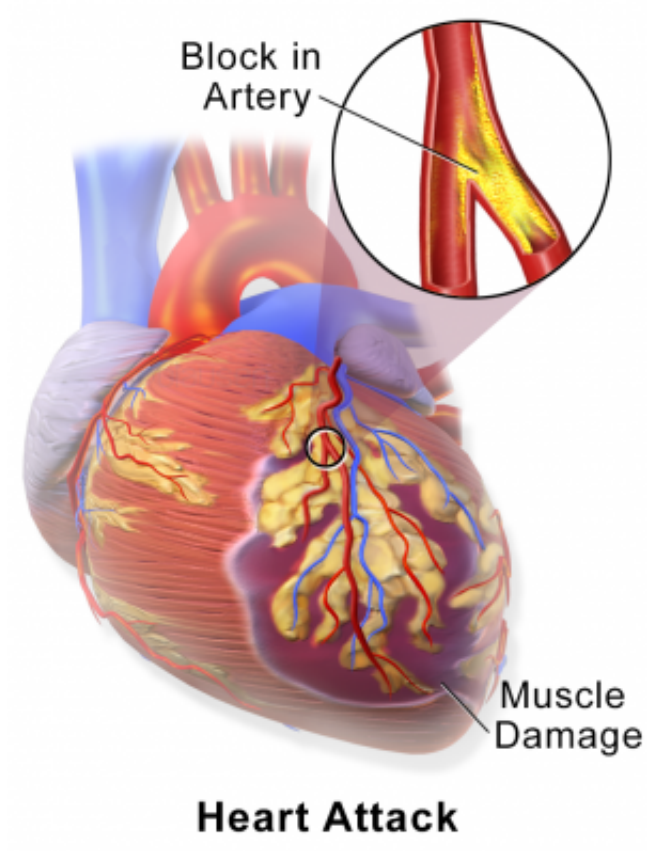

Myocardial Infarction or Heart Attack. Credit: Blausen Medical Communications/Wikipedia/CC-A 3.0

A new study by researchers at the Baker Heart and Diabetes Institute and Monash University could help inform treatment and prevent serious events like a heart attack or death in diabetic patients at high risk of

serious cardiovascular events.

The chilling links between diabetes and cardiovascular disease are clear, and this latest study shows, for the first time, the potential of the SGLT2 inhibitor dapagliflozin to stabilize vulnerable plaque in patients with diabetes to prevent plaque rupture and a heart attack.

This preclinical study, led by the Baker Institute's Dr. Yung-Chih Chen and Professor Karlheinz Peter and Monash University's Professor Karin Jandeleit-Dahm, and published in the *Journal of the American Heart Association*, provides further rationale for the use of dapagliflozin—the first of this novel class of glucose-lowering drugs to be made available in Australia—by health specialists including GPs, endocrinologists and cardiologists.

Importantly, the paper provides proof-of-concept to test the plaque-stabilizing capability of this medication and other anti-diabetic drugs.

Professor Peter, who is a cardiologist specialized in treating patients with heart attacks, says the effects on plaque stability demonstrated in this study with dapagliflozin could explain, at least in part, the reduction of cardiovascular events seen in diabetic patients treated with this medication.

Professor Jandeleit-Dahm, who is a clinician specialized in treating diabetic patients, states that diabetes is known to accelerate atherosclerosis (the build-up of fats in the artery) and increase plaque instability, which can lead to plaque rupture and heart attack, so much so that accelerated coronary artery disease in diabetic patients has become the leading cause of premature mortality and increased morbidity worldwide.

With a significant unmet need around diabetes-accelerated

atherosclerosis and the identification of novel therapeutic targets and strategies, this latest paper comes amid strong global interest in this new class of medications.

While SGLT2 inhibitors have emerged as a new therapeutic class for lowering blood glucose, several clinical trials have demonstrated the efficacy of the glucose-lowering effect of SGLT2 inhibitors in association with improved cardiovascular outcomes.

"With certain anti-diabetic drugs increasingly being added to the standard repertoire of cardiologists, this latest study provides further support for the potential of SGLT2 inhibitors to play a pivotal role in preventing plaque instability, and cardiovascular events," Professor Peter says.

While further clinical trials are needed to test the efficacy of this medication with regards to plaque stability, Professors Jandeleit-Dahm and Peter say the results are very promising and give weight to the cardiovascular benefits being seen beyond glucose control.

More information: Yung-Chih Chen et al, Sodium-Glucose Co-Transporter 2 (SGLT2) Inhibitor Dapagliflozin Stabilizes Diabetes-Induced Atherosclerotic Plaque Instability, *Journal of the American Heart Association* (2021). DOI: 10.1161/JAHA.121.022761

Provided by Baker Heart and Diabetes Institute