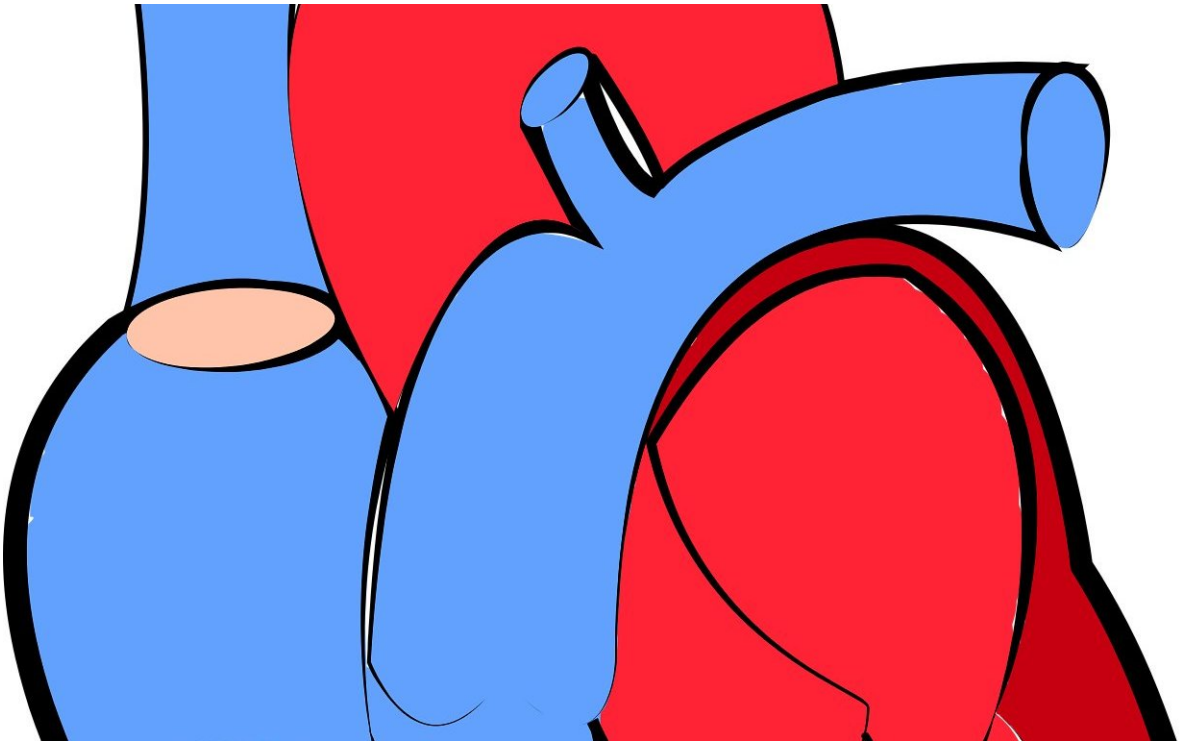
Study suggests diabetes medication improves heart structure

November 12 2018



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A study led by St. Michael's Hospital researchers, and presented at a prestigious late-breaker session at the American Heart Association meeting in Chicago on Nov. 11, indicates that the diabetes medication empagliflozin has important effects that can improve cardiac structure in people with Type 2 diabetes who also have heart disease.

"Empagliflozin is used to reduce glucose in diabetes patients, but it also has profound cardiovascular benefits," said Dr. Subodh Verma, cardiac surgeon-scientist and director of the CardioLink platform at the Keenan Research Centre for Biomedical Science of St. Michael's.

"The reasons why this medication results in profound reductions in death and heart failure are largely unknown," added Dr. Verma, who led the EMPA-HEART CardioLink-6 trial. "And whether it can directly and favourably remodel the heart has been an important unanswered question."

EMPA-HEART is the first randomized, double-blind, parallel group study to investigate the effect of empagliflozin on the structure and function of the left ventricle in individuals with Type 2 diabetes and a history of cardiovascular disease, using MRI testing over a six-month period.

Increased thickness of the heart's left ventricle is associated with heart disease and heart failure. The study found that when the subjects were given empagliflozin, it caused a significant regression in left ventricular mass index. The left ventricular mass index was assessed using cardiac MRI, the gold standard method for evaluating heart function.

The EMPA-HEART team included many physicians and scientists from St. Michael's, including Dr. Kim Connelly, Dr. Andrew Yan, Dr. David Mazer, Dr. David Fitchett, Dr. Peter Juni, director of the Applied Health Research Centre (AHRC), and Adrian Quan, research manager the CardioLink platform. It is the sixth CardioLink clinical trial. The late-breaker sessions are used for presentations deemed too important to wait for the next AHA meeting.

"The results are truly impressive, since they were observed on top of excellent standard of care and seen within a very short period of time,"

said Dr. Connelly, one of the co-principal investigators of the EMPA-HEART study. Dr. Mazer added that the data "provide important clues as to how this medication is working, and how it may prevent heart failure in people with Type 2 diabetes."

Provided by St. Michael's Hospital

Citation: Study suggests diabetes medication improves heart structure (2018, November 12) retrieved 26 April 2024 from https://medicalxpress.com/news/2018-11-diabetes-medication-heart.html

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