Medical Xpress

Researchers report how novel diabetes drugs work to improve the prognosis for patients with heart failure

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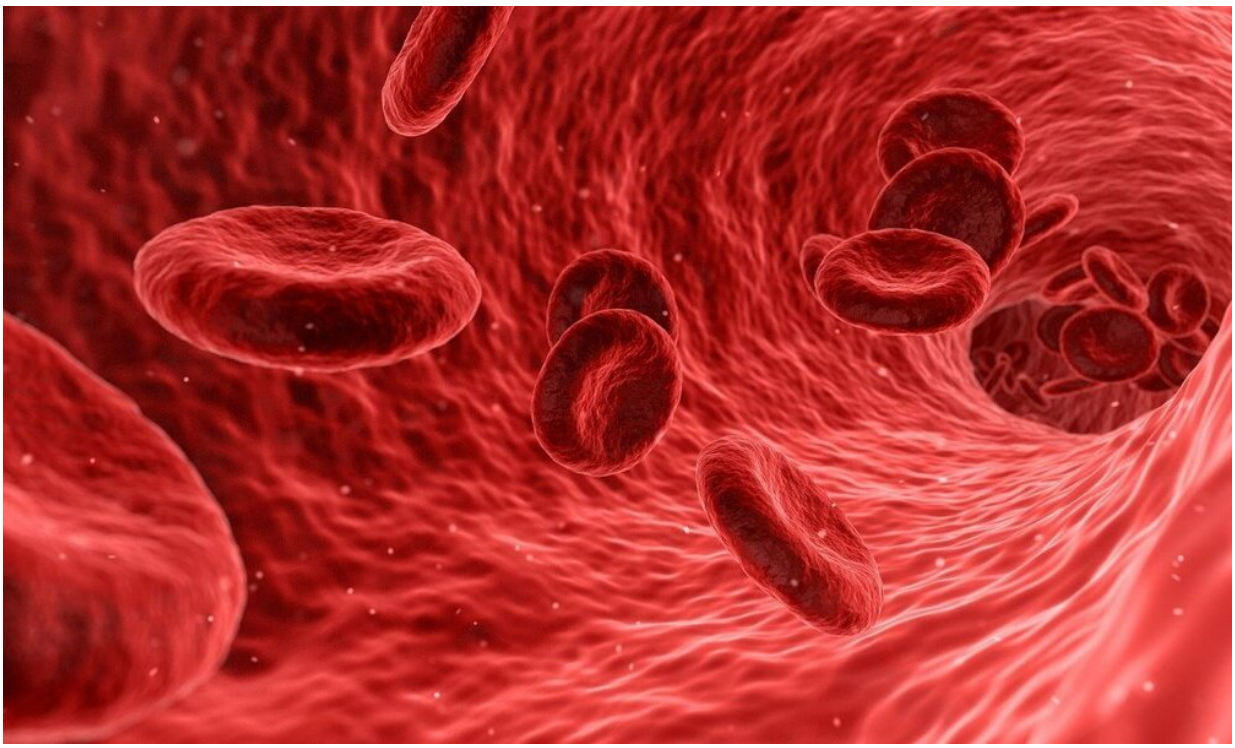

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Scientists at the University of Glasgow have furthered the understanding of how novel diabetes drugs can improve prognosis for patients with heart failure.

The results of the SUGAR-DM-HF trial—published in *Circulation* and presented to the American Heart Association—showed that the drug empagliflozin, originally a treatment for patients with type 2 diabetes, was able to significantly reduce the size of abnormally large hearts, which helps explain how they reduce the risk of hospitalization and cardiovascular death in patients with heart failure.

The trial tested the effects of empagliflozin on the structure and function of the heart in patients with heart failure, which is the most common reason for hospitalisations in over 65-year olds in the UK.

Empagliflozin—one of a class of drugs known as SGLT2 inhibitors—was tested in the UofG-led trial on 105 patients with heart failure who volunteered from 15 hospitals from Scotland.

Dr. Matthew Lee, from the University's Institute of Cardiovascular and Medical Sciences, said: "By chance, these drugs were found to be excellent drugs for heart failure in patients with and without diabetes. Very importantly, these findings help us explain, for the first time, why this new class of drugs have such powerful benefits to lessen chances of people with heart failure being admitted to hospital or dying."

Mark Petrie, professor of cardiology at ICAMS, said; "In two recent SGLT2 inhibitor trials in patients with heart failure—DAPA-HF and EMPEROR-Reduced, both led by or contributed to by UofG clinical academics—SGLT2 inhibitors have become a 'must have' treatment in patients with heart failure. The new discovery of how these drugs work to reduce hospitalisations, death and improve quality of life will help many cardiologists welcome these drugs into the care of their patients. Doctors love to know how novel drugs work."

Naveed Sattar, professor of metabolic medicine, added: "The University of Glasgow has a world class reputation in heart failure research and

we're very proud to present the results of this study, which comes on the back of seminal heart failure trials led by or contributed to by Glasgow clinical academics. This research is a wonderful example of how a team of experts spanning several disciplines—including doctors, nurses, pharmacists, cardiology, metabolic medicine, diabetes, nephrology and radiology—can work together to execute important trials."

The study, "Effect of empagliflozin on left ventricular volumes in patients with type 2 diabetes, or prediabetes, and heart failure with reduced ejection fraction (SUGAR-DM-HF)," is published in *Circulation*.

More information: Matthew M. Y. Lee et al. Effect of Empagliflozin on Left Ventricular Volumes in Patients with Type 2 Diabetes, or Prediabetes, and Heart Failure with Reduced Ejection Fraction (SUGAR-DM-HF), *Circulation* (2020). DOI: 10.1161/CIRCULATIONAHA.120.052186

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