New research shows dapagliflozin used to treat diabetes can also

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Dapagliflozin, a drug that is already used to successfully treat type 2 diabetes (T2D) and prevent development of heart failure, can also be used to treat pre-existing heart failure, even in patients without T2D.

These are the conclusions of research presented at this year's Annual Meeting of the European Association for the Study of Diabetes (EASD) in Barcelona, Spain (16-20 September), and simultaneously published in the *New England Journal of Medicine (NEJM)*. The study is by Professor John McMurray, Professor of Cardiology at the Institute of Cardiovascular and Medical Sciences, University of Glasgow, UK, and colleagues.

"The most important finding of all is the benefit in patients without diabetes," explains Professor McMurray. "This shows dapagliflozin is truly a treatment for heart failure and not just a drug for diabetes."

Heart failure occurs when the heart is no longer able to pump blood around the body as well as it should. In patients with heart failure, the percentage of blood pumped out by the left ventricle per heartbeat (called the ejection fraction) goes down. Certain conditions, such as coronary artery disease (narrowed arteries in the heart) or high blood pressure, gradually leave your heart too weak or stiff to fill and pump efficiently. The prevalence of heart failure in people with T2D is around double than in the general population without diabetes.

Dapagliflozin is one of the relatively new class of diabetes drugs called Sodium-glucose cotransporter 2 (SGLT-2) inhibitors. Previous studies have shown that SGLT-2 inhibitors not only help control blood sugar levels, but can also improve a number of cardiovascular outcomes, including promoting weight loss, reducing blood pressure and reducing the risk of cardiovascular mortality.

Dapagliflozin has already been proven to reduce the risk of developing heart failure in patients with type 2 diabetes. In this new study, the investigators analysed whether the drug could also be used to treat patients with T2D in whom heart failure had already developed (established heart failure), and also heart failure in patients without type 2 diabetes.

The trial (the DAPA-HF study) enrolled 4,744 patients with heart failure and reduced ejection fraction in 20 countries, of whom 45% had T2D, and 55% did not have T2D. Patients were randomly allocated to either dapagliflozin 10 mg once daily or matching placebo. The primary endpoint was a combination of a first episode of worsening heart failure (hospitalisation for heart failure or an urgent heart failure visit requiring intravenous therapy) or death from cardiovascular causes.

The treatments in the study were given on top of standard care: 94% received an angiotensin-converting enzyme (ACE) inhibitor or angiotensin receptor blocker or angiotensin receptor-neprilysin inhibitor; 96% took a beta-blocker; and 71% took a mineralocorticoid receptor antagonist (all these are drugs that reduce hospital admissions and death rates in heart failure, thus this new study was adding dapagliflozin or placebo to the currently best-available therapies).

The researchers found that, over a median follow-up of 18.2 months, the primary outcome occurred in 386 of 2,373 patients (16.3%) in the dapagliflozin group and in 502 of 2,371 patients (21.2%) in the placebo group, translating to a 26% reduced risk in the dapagliflozin (hazard ratio [HR] 0.74; 95% confidence interval [CI] 0.65-0.85; p