Diabetes drugs could save thousands of lives

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New research has linked two types of less-often prescribed diabetes drugs with lower chances of potentially fatal heart problems—including heart attack, heart failure and stroke—in people with type 2 diabetes without established heart disease.

The study of English and Welsh data—led by University of Manchester and Manchester University NHS Foundation Trust (MFT) scientists, is published in *Diabetes Care*—a leading clinical journal in the field.

Different medications are available to people with type 2 diabetes, all of which work in different ways to lower blood glucose levels. The study team looked at two newer types of medication called SGLT2 inhibitors and GLP-1 receptor agonists (GLP-1RAs).

They compared the risk of serious heart or stroke problems in people with type 2 diabetes when using the newer diabetes treatments to the risk in people using more traditional therapies, such as metformin and sulphonylureas.

The researchers showed the odds of developing heart failure was 51 percent lower for people using SGLT2 inhibitors, 18 percent lower for GLP-1RAs users and 57 percent lower for people using both drugs.

The odds of having a heart attack or stroke was 18 percent lower for SGLT2 inhibitors, 7 percent lower for GLP-1RAs and 30 percent lower for them given in combination.

Though SGLT2 inhibitors have been licensed since 2012, and GLP-1RA therapies since 2005, doctors routinely prescribe more traditional therapies for diabetes management which either have neutral or modest effects on reducing the risk of heart problems.

The researchers conclude that cost, regular prescribing practices and limited emphasis in current clinical management guidelines, may explain why these drug classes are less routinely prescribed.

Clinical trials looking at the effectiveness of the newer type 2 medications have mainly involved people with type 2 diabetes who have

a high-risk of heart disease. But the new study focused on people with a lower risk, who make up two thirds of people with type 2 diabetes.

The study, funded by Diabetes UK, was a collaboration with King's College London, The University of Liverpool, Keele University and the University of Glasgow.

The team linked primary care data from the Clinical Practice Research Datalink (CPRD) and the Secure Anonymised Information Linkage (SAIL) Databank to hospital and mortality records.

Co-author Professor Martin Rutter is a researcher at The University of Manchester and Honorary Consultant Physician at the Diabetes, Endocrinology and Metabolism Centre, Manchester Royal Infirmary, part of MFT.

He said, "There are around 4 million people with type 2 diabetes in the UK, and sadly more than one in three of these people will die from cardiovascular disease.

"The good news is that SGLT2 inhibitors and GLP-1RA drugs not only control diabetes, but they also reduce the risk of developing serious cardiovascular events such as heart attack or stroke.

"And that could save thousands of lives every year—not to mention the avoidance of chronic illness in those who survive heart attacks and strokes.

"The protective effect of these two types of medication can be seen as soon as patients start to receive them—though the longer they take them, the greater the protection."

Co-author Professor Darren Ashcroft, a researcher at The University of

Manchester, said: "The mechanism by which these drugs provide their protective effects is an active area of research. However, their life-saving effects may be partly explained by their beneficial effects on weight loss and the fact that they don't cause low blood sugar levels (hypoglycaemia), which can be harmful to the cardiovascular system."

Lead author Dr. Alison Wright, a statistician at The University of Manchester, said: "While GLP-1RA and SGLT2 inhibitors are expensive treatments, we believe the cost-effectiveness of such treatment options in terms of primary prevention should be seriously examined.

"This is because 80 percent of diabetes care costs are related to managing complications, with the largest contributor being cardiovascular disease.

"We believe these data make a strong case for trials evaluating the efficacy and cost-effectiveness of these interventions and their combination in lower risk people with type 2 diabetes."

Dr. Faye Riley, Senior Research Communications Officer at Diabetes UK, said: "Cardiovascular disease remains the leading cause of reduced life expectancy in people with diabetes so finding the right care at the right time to support people to reduce their risk could be life-saving.

"This study contributes to the evidence base about the effectiveness of different medications for type 2 diabetes to protect against serious cardiovascular complications. However, it remains essential that healthcare professionals make individual care decisions when offering treatment options, as not all medications are suitable for everyone with type 2 diabetes."

More information: Alison K. Wright et al, Primary Prevention of Cardiovascular and Heart Failure Events With SGLT2 Inhibitors, GLP-1

Receptor Agonists, and Their Combination in Type 2 Diabetes, *Diabetes Care* (2022). DOI: 10.2337/dc21-1113