Medical Xpress

Two type 2 diabetes drugs linked to higher risk of heart disease

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Two drugs commonly prescribed to treat Type 2 diabetes carry a high risk of cardiovascular events such as heart attack, stroke, heart failure or amputation, according to a new Northwestern Medicine study.

"People should know if the medications they're taking to treat their diabetes could lead to serious cardiovascular harm," said lead author Dr. Matthew O'Brien, assistant professor of general internal medicine and geriatrics at Northwestern University Feinberg School of Medicine and a Northwestern Medicine physician. "This calls for a paradigm shift in the treatment of Type 2 diabetes."

The study will be published Dec. 21 in *JAMA Network Open*.

The two drugs—sulfonylureas and basal insulin—are commonly prescribed to patients after they have taken metformin, a widely accepted initial Type 2 diabetes treatment, but need a second-line medication because metformin alone didn't work or wasn't tolerated.

This is the first study to compare how each of the six major second-line drugs impact cardiovascular outcomes in Type 2 diabetes patients taking a second diabetes medication.

Basal insulin is engineered to release slowly over the course of the day, compared to the other type of insulin (prandial insulin), which is faster acting and intended to be taken before meals.

More than half of patients nationwide (60 percent) who need a second-line drug are prescribed one of these two drugs, the study found. Yet, patients who take one of these two drugs are more likely—36 percent more for sulfonylureas and twice as likely for basal insulin—to experience cardiovascular harm than those taking a newer class of diabetes drugs known as DPP-4 inhibitors, the authors report.

"According to our findings, we only have to prescribe basal insulin to 37 people over two years to observe one cardiovascular event, such as a heart attack, stroke, heart failure or amputation," O'Brien said. "For sulfonylureas, that number was a bit higher—103 people. But when you

apply these numbers to 30 million Americans with diabetes, this has staggering implications for how we may be harming many patients."

Physicians should consider prescribing newer classes of antidiabetic medications, such as GLP-1 agonists (e.g. liraglutide), SGLT-2 inhibitors (e.g. empagliflozin)or DPP-4 inhibitors (e.g. sitagliptin), more routinely after metformin, rather than sulfonylureas or basal insulin, the study authors suggest.

These drugs, however, are more expensive than the sulfonylureas, which is the main reason they are not as commonly prescribed, O'Brien said.

"This should force providers to think about cardiovascular effects of these drugs early in the course of diabetes treatment, and shift prescribing patterns to newer drugs that have more favorable cardiovascular profiles," O'Brien said.

This was an observational study using data from 132,737 patients with Type 2 diabetes who were starting second-line treatment. The scientists were, therefore, able to use real-world evidence that complements findings from previous randomized trials which studied only one active drug compared to placebo.

Provided by Northwestern University

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