

Lower risk for heart failure with new type 2 diabetes drug

29 August 2019

The new drug type for type 2 diabetes, SGLT2 inhibitors, are associated with a reduced risk of heart failure and death, as well as of major cardiovascular events, a major Scandinavian registry study led from Karolinska Institutet reports in *The BMJ*.

Cardiovascular disease is a serious complication of type 2 [diabetes](#). The new SGLT2 inhibitors, which are now a commonly used drug group, reduce blood glucose. Clinical studies have also shown that SGLT2 inhibitors can reduce the risk of cardiovascular events in patients with type 2 diabetes and established [cardiovascular disease](#) or high cardiovascular risk.

However, it is unclear whether these findings also mean that there are positive cardiovascular effects from SGLT2 inhibitors in a broader patient group. This has now been investigated in a study published in *The BMJ*.

Over 40,000 patients

The study was a collaboration between researchers at Karolinska Institutet in Sweden, Statens Serum Institut in Denmark, the NTNU in Norway and the Swedish National Diabetes Register. The researchers used several national registries containing data on [drug use](#), diseases, cause of death and other data from close to 21,000 patients with type 2 diabetes who began treatment with SGLT2 inhibitors between April 2013 and December 2016.

This information was then compared with an equally sized matched population who began treatment with a different diabetes drug, a DPP4 inhibitor. The primary outcomes in the study were major cardiovascular events (defined as myocardial infarction, stroke or cardiovascular death) and hospital admission for heart failure. An important secondary outcome was any-cause death.

Reduced risk of heart failure

In the primary analysis, the patients were monitored throughout the follow-up period, regardless of whether they had completed their treatment. The researchers found that the use of SGLT2 inhibitors was associated with a reduced risk of heart failure but not with major cardiovascular events. The risk of [heart](#) failure was 34 percent lower in the SGLT2-inhibitor group than in the DPP4-inhibitor group. The use of SGLT2 inhibitors was also linked to a 20 percent lower risk of death.

In an additional analysis the researchers studied the risks only when the patients took the drug and found a reduced risk of both [heart failure](#) and major cardiovascular events.

"Our study suggests that there is cardiovascular benefit from SGLT2 inhibitors for a broader patient group in routine clinical care," says principal investigator Björn Pasternak, associate professor at Karolinska Institutet's Department of Medicine in Solna. "This is an important result that we believe may be of interest to patients as well as [drug](#) authorities and doctors."

The results are applicable primarily to dapagliflozin, which was the predominant SGLT2 inhibitor used in Scandinavia during the study period.

The study is an observational study, which means that causality cannot be established.

More information: Use of sodium glucose cotransporter 2 inhibitors and risk of major cardiovascular events and heart failure: Scandinavian register-based cohort study, *BMJ* 2019, [DOI: 10.1136/bmj.l4772](https://doi.org/10.1136/bmj.l4772).

Provided by Karolinska Institutet

APA citation: Lower risk for heart failure with new type 2 diabetes drug (2019, August 29) retrieved 8 September 2022 from <https://medicalxpress.com/news/2019-08-heart-failure-diabetes-drug.html>

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