

DSEN ABSTRACT

SGLT2 Inhibitors and the Risk of Severe Urinary Tract Infection

A study conducted by the Canadian Network for Observational Drug Effect Studies (CNODES)

Summary

- SGLT2 inhibitor use was not associated with an increased risk of severe UTI compared to use of DPP-4 inhibitors among patients with type 2 diabetes.

Key messages

- These findings provide reassurance regarding the risk of severe UTI with SGLT2 inhibitors in a real-world setting.
- Additional studies with longer duration of follow-up are needed to assess potential long-term effects.

Project Lead & Team

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- Team members [available here](#)

Link to publication

- Fisher et al. Diabetes Obes Metab. 2020. [doi: 10.1111/dom.14082](#).

What is the issue?

- Sodium-glucose cotransporter 2 (SGLT2) inhibitors and dipeptidyl peptidase-4 (DPP-4) inhibitors are new classes of drugs used in the second- or third-line treatment of type 2 diabetes.
- However, several safety concerns related with the use of SGLT2 inhibitors have been raised including a potential increased risk of severe urinary tract infection (UTI).

What was the aim of the study?

- This study, conducted by the Canadian Network for Observational Drug Effect Studies (CNODES), evaluated the risk of severe UTI associated with the use of SGLT2 inhibitors compared to the use of DPP-4 inhibitors, a class of diabetes medications not thought to cause severe UTI.

How was the study conducted?

- CNODES investigators conducted eight population-based cohort studies with health records of over 400,000 patients with type 2 diabetes from seven Canadian provinces and the United Kingdom.
- Cohorts included patients aged 18 years and older who received a prescription for a SGLT2 inhibitor or a DPP-4 inhibitor between 2013 and 2018.
- The risk of severe UTI was compared in users of SGLT2 inhibitors and a matched group of DPP-4 inhibitors. Results were combined across studies using a statistical approach called meta-analysis.

What did the study find?

- The use of SGLT2 inhibitors was associated with a relative decrease of 42% in the risk of severe UTI compared with DPP-4 inhibitors. Similar reductions were observed for each of the three SGLT2 inhibitor molecules (canagliflozin, dapagliflozin, empagliflozin) available during the study period.
- These findings provide reassurance as to the risk of severe UTI with SGLT2 inhibitors among patients with type 2 diabetes in a real-world setting. However, given the rapidly increasing use of this medication class, physicians should be aware of severe UTI as a potential adverse effect.
- CNODES has the ability to analyze a large amount of anonymous patient information to reliably assess questions of drug safety and effectiveness.

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