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# Assessing the Risk for Gout With Sodium–Glucose Cotransporter-2 Inhibitors in Patients With Type 2 Diabetes: A Population-Based Cohort Study

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Article, Author, and Disclosure Information

VISUAL ABSTRACT

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## Abstract

**Background:** Hyperuricemia is common in patients with type 2 diabetes mellitus and is known to cause gout. Sodium–glucose cotransporter-2 (SGLT2) inhibitors prevent glucose reabsorption and lower serum uric acid levels.

**Objective:** To compare the rate of gout between adults prescribed an SGLT2 inhibitor and those prescribed a glucagon-like peptide-1 (GLP1) receptor agonist.

**Design:** Population-based new-user cohort study.

**Setting:** A U.S. nationwide commercial insurance database from March 2013 to December 2017.

**Patients:** Persons with type 2 diabetes newly prescribed an SGLT2 inhibitor were 1:1 propensity score matched to patients newly prescribed a GLP1 agonist. Persons were excluded if they had a history of gout or had received gout-specific treatment previously.

**Measurements:** The primary outcome was a new diagnosis of gout. Cox proportional hazards regression was used to estimate hazard ratios (HRs) of the primary outcome and 95% CIs.

**Results:** The study identified 295 907 adults with type 2 diabetes mellitus who were newly prescribed an SGLT2 inhibitor or a GLP1 agonist. The gout incidence rate was lower among patients prescribed an SGLT2 inhibitor (4.9 events per 1000 person-years) than those prescribed a GLP1 agonist (7.8 events per 1000 person-years), with an HR of 0.64 (95% CI, 0.57 to 0.72) and a rate difference of −2.9 (CI, −3.6 to −2.1) per 1000 person-years.

**Limitation:** Unmeasured confounding, missing data (namely incomplete laboratory data), and low baseline risk for gout.

**Conclusion:** Adults with type 2 diabetes prescribed an SGLT2 inhibitor had a lower rate of gout than those prescribed a GLP1 agonist. Sodium–glucose cotransporter-2 inhibitors may reduce the risk for gout among adults with type 2 diabetes mellitus, although future studies are necessary to confirm this observation.

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