


# Sodium glucose cotransporter-2 inhibitors and urinary tract infections: “empa-vs-dapa” – a prospective cohort study

 Dominik Buljan\*,  
 Anđela Jurišić,  
 Marin Vidak,  
 Šime Manola,  
 Ivana Jurin

Dubrava University Hospital,  
Zagreb, Croatia

**KEYWORDS:** sodium-glucose cotransporter-2 inhibitors, urinary tract infections.

**CITATION:** *Cardiol Croat.* 2023;18(11-12):289. | <https://doi.org/10.15836/ccar2023.289>

**\*ADDRESS FOR CORRESPONDENCE:** Dominik Buljan, Klinička bolnica Dubrava, Av. G. Šuška 6, HR-10000 Zagreb, Croatia. / Phone: +385-91-567-5944 / E-mail: [dominik.buljan@gmail.com](mailto:dominik.buljan@gmail.com)

**ORCID:** Dominik Buljan, <https://orcid.org/0000-0001-9603-2610> • Anđela Jurišić, <https://orcid.org/0000-0001-8316-4294>  
Marin Vidak, <https://orcid.org/0000-0003-0341-9598> • Ivana Jurin, <https://orcid.org/0000-0002-2637-9691>  
Šime Manola, <https://orcid.org/0000-0001-6444-2674>

**Introduction:** Urinary tract infections (UTIs) can contribute to adverse cardiovascular events due to systemic inflammation process. Patients with heart failure (HF) represent fragile population with increased risk of heart failure accutization as well as cardiovascular death.<sup>1</sup> Sodium glucose cotransporter-2 (SGLT-2) inhibitors have been proven to reduce adverse cardiovascular events among patients with chronic heart failure with reduced ejection fraction (HFrEF), chronic renal disease as well as patients with diabetes mellitus type 2 (T2D). Otherwise SGLT-2 inhibitor-induced glycosuria is hypothesized to increase the risk of UTIs so we assessed the risk of UTIs associated with SGLT-2 inhibitors depending on used SGLT-2 inhibitor, dapagliflozin or empagliflozin.

**Patients and Methods:** We conducted a prospective cohort study using data from register of our patients treated with SGLT-2 inhibitors. From a base cohort of patients with UTIs we constructed two comparative cohorts wherein the exposure contrast was defined as usage of SGLT-2 inhibitors type. For comparison we used chi-squared distribution.

**Results:** There were 75 patients with diagnosed UTIs during the study and 23 of them had UTIs in medical history before initiation of SGLT-2 inhibitor. Patients were elderly, predominantly female (56%) and with T2D or prediabetes in anamnesis (72%). 44 patients were treated with dapagliflozin while 31 were treated with empagliflozin. Among 30 patients SGLT-2 inhibitors were discontinued during the study, mostly due to UTIs (80%). Median of time between initiation and discontinuation of SGLT-2 inhibitors was 113 days.

**Conclusion:** There is not statistically significant difference of UTIs among patients depending on which of two compared SGLT-2 inhibitors they are treated with (p=0.1659).

RECEIVED:  
September 6, 2023

ACCEPTED:  
September 27, 2023



## LITERATURE

1. Alkabbani W, Zongo A, Minhas-Sandhu JK, Eurich DT, Shah BR, Alsabbagh MW, Gamble JM. Sodium-Glucose Cotransporter-2 Inhibitors and Urinary Tract Infections: A Propensity Score-matched Population-based Cohort Study. *Can J Diabetes.* 2022 Jun;46(4):392-403.e13. <https://doi.org/10.1016/j.jcid.2021.12.005>