



Shaping Tomorrow's Nephrology: Insight-Driven Kidney Care

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SGLT2 Inhibitors and the Risk of Urinary Tract Infections in Kidney Transplant Recipients: A Propensity Score Matched Multicenter Cohort Study

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Objectives : The renal and cardiac benefits of sodium-glucose cotransporter-2 inhibitors (SGLT2i) in patients with chronic kidney disease have raised interest in their use among kidney transplant recipients (KTRs). However, concerns regarding urinary tract infections (UTIs) remain a major barrier to prescribing SGLT2i in KTRs. This study aimed to evaluate the association between the incidence of UTI and SGLT2i use in KTRs.

Methods : This multicenter retrospective cohort study included 1,966 KTRs, of whom 179 were prescribed SGLT2i. Baseline characteristics and infection outcomes were compared between SGLT2i users and non-users. UTI incidence rates were calculated per person-year, and negative binomial analysis was used to compare the rates. Propensity score matching (PSM) was performed to reduce baseline imbalances, and Anderson-Gill Cox proportional hazards modeling was applied to assess the risk of recurrent UTI events.

Results : Before matching, the overall UTI incidence rates per person-year were comparable between SGLT2i users and non-users (0.294 vs. 0.311, $P=0.251$). Bacterial infection incidence was also similar (0.270 vs. 0.296, $P=0.110$), whereas fungal infections were more frequent in SGLT2i users (0.025 vs. 0.016, $P=0.018$). Among the 112 SGLT2i users who experienced infections, the incidence rate decreased after initiation of SGLT2i therapy (0.332 to 0.085 per person-year). After 1:3 PSM ($n=702$), overall UTI incidence remained similar between groups (0.294 vs. 0.305, $P=0.123$; Table 1), however, bacterial infection incidence was significantly lower in the SGLT2i users (0.270 vs. 0.295, $P=0.033$; Table 1). Fungal infections showed a trend toward lower rates in the SGLT2i users (0.025 vs. 0.057, $P=0.071$; Table 1). In table 2, Anderson-Gill Cox regression revealed no significant association between SGLT2i use and recurrent UTI risk (hazard ratio 1.01, 95% confidence interval 0.78–1.36, $P=0.69$).

Conclusions : SGLT2i use in KTRs was not associated with an increased risk of UTI. These findings suggest the cautious consideration of SGLT2i in clinical practice for KTRs.

table 1.jpg



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	SGLT2i users [↵] (n=179) [↵]	Non-SGLT2i users [↵] (n=523) [↵]	P [↵]	↵
Number of patients with UTI, n (%) [↵]	112 (62.6%) [↵]	236 (45.1%) [↵]	↵	↵
Number of events, total, n [↵]	312 [↵]	1040 [↵]	↵	↵
Number of events, bacterial, n (%) [↵]	286 (91.7%) [↵]	978 (94.0%) [↵]	↵	↵
Number of events, fungal, n (%) [↵]	26 (8.3%) [↵]	62 (6.0%) [↵]	↵	↵
Overall infection incidence rate, person-year [↵]	0.294 [↵]	0.305 [↵]	0.123 [↵]	↵
Bacterial infection incidence rate, person-year [↵]	0.270 [↵]	0.295 [↵]	0.033 [↵]	↵
Fungal infection incidence rate, person-year [↵]	0.025 [↵]	0.057 [↵]	0.071 [↵]	↵

table 1.jpg

↵	HR [↵]	95% CI [↵]	P [↵]	↵
Overall infection events [↵]	1.012 [↵]	0.781 – 1.361 [↵]	0.693 [↵]	↵
Bacterial infection [↵]	1.163 [↵]	0.812 – 2.453 [↵]	0.754 [↵]	↵
Fungal infection [↵]	0.984 [↵]	0.544 – 1.122 [↵]	0.462 [↵]	↵