



Letter to Editor

Treatment of prediabetes by gliflozins: Risk of infection

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To Editor,

An interesting review article by Echouffo-Tcheugui and colleagues about the diagnosis and management of prediabetes has been published in *JAMA*.¹ The lifestyle change that includes exercise and weight loss was proposed as first-line therapy with a superior advantage over than metformin. Recently, a letter was published in which sodium-glucose co-transporter-2 (SGLT2) inhibitors (gliflozins) were suggested as the treatment of prediabetes because of the anti-diabetic effects and weight-reduction benefits of SGLT2 inhibitors.² This comment was replied by Dagogo-Jack,³ and some concerns were declared because of no evidence of gliflozins effect on insulin and β -cell actions and their efficacy on people without type 2 diabetes. Therefore, further studies were recommended to verify the effectiveness of gliflozins in the management of prediabetes. In addition, adverse effects of gliflozins are another issue should be considered.

Gliflozins have several beneficial effects in managing diabetes and cardiovascular disease.⁴ However, clinical studies have shown an increased risk of certain infections. The most common infection associated with SGLT2 inhibitors is urinary tract infection (UTI). They work by increasing the excretion of glucose through the urine, which can create an environment favorable for bacterial growth. In addition, osmotic diuresis, by maintaining urinary flow, is another mechanism of UTI in patients treated with gliflozins.⁵ They may also enhance the risk of genital yeast infections and vulvitis.⁶

A retrospective cohort study reported that genitourinary infection is common within six months of treatment among patients on gliflozins.⁷ McGovern et al⁸ reported significantly increased risk of genital infections in 21004 people with type 2 diabetes starting gliflozins and compared with 55471 patients initiating dipeptidyl peptidase-4 inhibitors (DPP4i).

A meta-analysis of randomized placebo-controlled trials about renal efficacy and cardiovascular safety of gliflozins in non-diabetic patients concluded an increased risk for genital and UTIs.⁹ Bapir et al,¹⁰ also designed a systematic review and meta-analysis, and an increase in the risk of

urogenital infections was obtained in patients without diabetes. In another meta-analysis with 77 randomized controlled trials involving 50 820 participants, a significant difference has been reported in genital infections between SGLT2 inhibitors versus control.¹¹

According to available evidence, UTI and genital yeast infections are possible adverse effects of SGLT2 inhibitors and may be considered in their administration for prediabetic conditions. Thus, I also believe that more randomized controlled trials are necessary to establish strong evidence for the application of gliflozins in prediabetic patients and monitoring their adverse effects i.e., infections.

Competing Interests

None reported.

Data Availability Statement

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Ethical Approval

Not applicable.

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