

# Comment on “Renal abscess complicated by duodenal obstruction in a patient with obesity and type 2 diabetes mellitus treated with gliflozin”

**To the Editor** We read with great interest the recent article by Gierlikowski et al.<sup>1</sup> Although it is an interesting paper demonstrating a very rare complication, we believe that it deserves some comments.

Both in the title and the manuscript itself, the authors emphasize the association between canagliflozin administration and manifestation of a complicated urinary tract infection (UTI) in their patient.<sup>1</sup> However, according to the most recent meta-analysis by Puckrin et al.,<sup>2</sup> the risk of UTI was not elevated in patients using sodium-glucose co-transporter-2 (SGLT-2) inhibitors compared with placebo (risk ratio [RR], 1.03; 95% CI, 0.96–1.11) or an active comparator (RR, 1.08; 95% CI, 0.93–1.25). Only dapagliflozin was associated with a significant increase in the risk of UTI. Similar results were obtained in a meta-analysis by Li et al.<sup>3</sup>

On the other hand, obesity and type 2 diabetes are considered predisposing factors for UTIs. Obesity has been demonstrated to be closely associated with the incidence of recurrent UTIs in premenopausal women (odds ratio, 4.00; 95% CI, 3.20–4.61).<sup>4</sup>

Thus, we recommend that predisposition to genital infections with the use of SGLT-2 inhibitors should be interpreted with caution, as there is no solid evidence that this drug class also predisposes to UTIs, especially to severe forms, such as the one presented by Gierlikowski et al.<sup>1</sup>

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**Authors' reply** We thank Dr. Dimitrios and co-authors for their interest in our manuscript and their valuable comments.

Sodium-glucose co-transporter-2 (SGLT-2) inhibitors are a novel group of antidiabetic drugs with favorable outcomes. However, like with all new drugs, it takes time to establish all possible side effects. None of the previously cited meta-analyses were able to reliably evaluate the risk of pyelonephritis due to rare occurrence of this disease.

Therefore, although large randomized controlled trials are available, we should also analyze data from everyday practice and observational

studies.<sup>1,2</sup> We also believe that all possible severe side effects should be reported, especially in the case of new drugs.

As data regarding the risk of complicated UTI and gliflozin use are equivocal, we did not claim that there was the cause-and-effect relationship. Nevertheless, the described case fulfills the criteria of an adverse event.<sup>3</sup> Thus, we stated in the title of our manuscript that the patient was treated with gliflozin. In the paper we listed conditions that may have contributed to the course of the disease, including obesity, poor diabetes control, gliflozin use, and prolonged untreated UTIs. We agree that it is not possible to assess the exact role of each of the above factors.

Until the relationship of SGLT-2 inhibitors (as a group or a specific compound) and UTIs, especially complicated ones, is fully determined, we believe that caution is needed when prescribing these drugs to patients with recurrent and inadequately treated UTIs. A similar approach was adopted by the canagliflozin's manufacturer, who provides information about an increased UTI risk.<sup>4</sup>

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