Does a gluten-free diet determine the efficacy of sotagliflozin in patients with concomitant type 1 diabetes mellitus and celiac disease?

Dimitrios Ioannis Patoulias[1,2], Petros Keryttopoulos[2]

[1]2nd Propaedeutic Department of Internal Medicine, Aristotle University of Thessaloniki, General Hospital Hippokration, Thessaloniki, Greece

[2]Department of Internal Medicine, General Hospital of Veria, Veria, Greece

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Address for correspondence: Dimitrios Ioannis Patoulias MD, Department of Internal Medicine, General Hospital of Veria, 3B M. Alexandrou St, 57010 Veria, Greece, phone: +30 6946900777, e-mail: dipatoulias@gmail.com

Sodium glucose-cotransporter type 2 (SGLT-2) inhibitors constitute a novel class of antidiabetics, approved for the treatment of type 2 diabetes mellitus. There are sufficient data regarding their contribution to significant improvement in the major cardiometabolic parameters (HbA_{1c}, fasting plasma glucose, blood pressure, lipid profile, body weight), with promising results in cardiovascular and diabetic kidney disease [1–4].

Their insulin-independent mechanism of action makes them an attractive and promising treatment option in patients with type 1 diabetes mellitus, as an adjunct therapy to insulin. Sodium glucose-cotransporter type 2 inhibitors provide significant improvement in two main adverse effects of insulin, namely hypoglycaemic events and weight gain; thus, the discussion on their use in those patients is ongoing.

Sotagliflozin, a dual SGLT1/SGLT2 inhibitor, acts as a glucagon-like peptide 1 secretagogue, as well. The latter makes sotagliflozin an interesting therapeutic option in diabetic patients [5].

Garg *et al.* reported significant clinical benefits of sotagliflozin when added to insulin in patients with type 1 diabetes, namely improved glycaemic control, along with weight reduction and blood pressure lowering effects, results similar to those provided by Sands *et al.*, despite the substantial differences in the number of involved patients and the short-term evaluation of the efficacy of sotagliflozin [6, 7].

We would like to draw attention to a specific point. It is well established that type 1 diabetes and celiac disease share common alleles, leading to frequent concomitance of the two diseases, both in youths and adults [8, 9]. Based on the fact that SGLT1 expression has been shown to be absent in patients with untreated celiac disease, normalising after initiation of a gluten-free diet for at least 12 months, it seems reasonable that sotagliflozin, a dual SGLT1/SGLT2 inhibitor, may provide significant therapeutic results in patients with concomitant type 1 diabetes and celiac disease, along with appropriate dietary modification [10]. In other words, sotagliflozin is expected to act only through SGLT2 inhibition in those patients with untreated celiac disease, leading to insufficient glycaemic control. Thus, it is deduced that in patients following a gluten free diet, sotagliflozin will inhibit both SGLT1 and SGLT2 inhibitors, maximizing its glucose lowering properties. Another question that arises is whether sotagliflozin is equally efficient in type 1 diabetic patients with treated celiac disease and in type 1 diabetic patients without celiac disease.

After conjugation of pathophysiologic mechanisms and clinical data, it seems that sotagliflozin is a very promising treatment option. Of course, this is a hypothesis based upon very limited relevant literature, which must be further elucidated. Thus, further clinical trials concerning the use of sotagliflozin in patients with concomitant type 1 diabetes and celiac disease, both treated and untreated, and the achieved glycaemic control are required, in order to reinforce, confirm, or reject this hypothesis.

Conflict of interest

The authors declare no conflict of interest.

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