Clinical Journal of Diabetes Care and Control
ISSN: 2642-0872

Chembio Publishers
Right Choice for Researchers

Commentary *Volume 2; Issue 3*

Sodium Glucose Co-Transporter 2 Inhibitors Use In Type 1 Diabetes

Majid Alabbood*

Director of the Specialized Endocrine and Diabetes Center, University of Basrah, Iraq

***Corresponding author:** Dr. Majid Alabbood, Consultant Endocrinologist, Director of the Specialized Endocrine and Diabetes Center, Lecturer, AlZahraa college of Medicine, University of Basrah, Basrah, Iraq, Tel: +9647801046883; Email: dr_majid79@yahoo.com

Received Date: June 01, 2019; **Published Date:** June 06, 2019

Commentary

Sodium glucose co-transporter 2 inhibitors (SGLT2i) are a new class of oral antidiabetic agents that is considered a breakthrough in the history of management of diabetes due to the famous cardiovascular outcome trials [1]. These agents lower blood glucose by inhibition of the re-absorption of filtered glucose at the proximal convoluted tubule in the kidneys. Thus, glycosuria will result which will lead to loss of calories and consequently weight loss. Because these agents act in a non-insulin dependent fashion, several imminent diabetologists have suggested the potential possible benefit of using these agents as adjunct to insulin in patients with type 1 diabetes (T1D). However, the Food and Drug Administration (FDA) has recently disapproved the use of one of these agents, sotagliflozin, in T1D.

Despite that, these agents are still being used off-label in T1D. The proponents of this off-label use defend themselves by the following points: first, their patients are feeling better after the addition of SGLT2i to their insulin. Second, patients who were started on SGLT2i have lost the weight that was gained because of insulin therapy and hence they needed lower doses of the later. Third, the results of three clinical trials, DEPICT, EASE and In Tandem, which were conducted on thousands of patients with T1D have shown that there was additional reduction in A1C and plasma glucose with less glycemic variability in those received SGLT2i [2-4]. Furthermore, there was a reduction in the total daily dose of insulin by around 3 units and in body weight by 3 Kg in the in Tandem trial [3]. Fourth, SGLT2i has the benefit of reducing systolic blood pressure in patients with coexistent hypertension.

On the other hand, the opponents of the use of SGLT2i in T1D base their objection on the fear of euglycemic diabetic ketoacidosis (DKA) that is encountered in some patients and it might be fatal. Therefore, the STICH protocol has been advocated by the integrated diabetes services in 2018 to react to people on SGLT2i who developed euglycemic DKA. From my perspective, I support the second group for the following reasons: firstly, patients need to be well controlled on insulin when adding SGLT2i and this is hard to be achieved in most of the patients worldwide [5]. Secondly, patients need to monitor their ketone, whether in blood or urine, frequently and regularly while on SGLT2i.

These tests are not widely available in most of the developing countries. Thirdly, a thorough education is required about the symptoms of euglycemic DKA and how to mitigate the risk of its development and how to manage it immediately by taking more carbohydrates and increasing the dose of insulin as per the STICH protocol [6]. The use of SGLT2i as adjunct or add on to insulin in T1D is still need to be investigated thoroughly by clinical

Citation: Majid Alabbood. Sodium Glucose Co-Transporter 2 Inhibitors Use In Type 1 Diabetes. Clin J Dia Care Control 2019, 2(2): 180025.

trials. Meanwhile, the use of these agents should be judicious, cautious and preferably under the supervision of an experienced endocrinologist or diabetologist with the availability of tests for mitigation and early detection of euglycemic DKA.

References

1. Zinman B, Wanner C, Lachin JM, Fitchett D, Bluhmki E, et al. (2015) Empagliflozin, cardiovascular outcomes, and mortality in type 2 diabetes. N Engl J Med 373(22): 2117-21128.

2. Dandona P, Mathieu C, Phillip M, Hansen L, Tschöpe D, et al. (2017) Efficacy and safety of dapagliflozin in patients with inadequately controlled type 1 diabetes (DEPICT-1): 24 week results from a multicentre, double-blind, phase 3, randomised controlled trial. The Lancet Diabetes and Endocrinology 5(11): 864-876.

3. Satish K Garg, Robert R Henry, Phillip Banks, John B Buse, Melanie J Davies, et al. (2017) Effects of sotagliflozin added to insulin in patients with type 1 diabetes. NEJM 377: 2337-2348.

4. Julio Rosenstock, Jan Marquard, Lori M Laffel, Dietmar Neubacher, Stefan Kaspers, et al. (2018) Empagliflozin as Adjunctive to Insulin Therapy in Type 1 Diabetes: The EASE Trials. Diabetes Care 41(12): 2560-2569.

5. Tahbaz F, Kreis I, Calvert D (2006) An audit of diabetes control, dietary management and quality of life in adults with type 1 diabetes mellitus, and a comparison with nondiabetic subjects. J Hum Nutr Diet 19(1): 3-11.

6. Garg S, Peters A, Buse J, Danne T (2018) Strategy for mitigating DKA risk in patients with type 1 diabetes on adjunctive treatment with SGLT inhibitors: a STICH protocol. Diabetes Technol Ther 20(9): 571-575.