Comparison of clinical outcomes in Patients with TIIDM uses SGLT2 Inhibitors, Sulfonylureas and Combination Therapies

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Abstract

Introduction: Sodium-glucose co-transporter 2 (SGLT2) inhibitors are relatively new treatments that work by promoting urinary glucose excretion and have demonstrated multiple benefits beyond glycemic control in patients with type 2 diabetes. Sulfonylureas, on the other hand, represent one of the oldest and most widely used classes of oral antidiabetic drugs. They act by stimulating pancreatic β-cells to increase insulin secretion, which improves blood glucose levels but carries a higher risk of hypoglycemia and weight gain. Common sulfonylurea agents include glibenclamide (glyburide), glipizide, gliclazide, and glimepiride**, which are still widely prescribed due to their effectiveness, low cost, and availability, particularly in resource-limited settings.

Objectives: To compare SGLT2 inhibitors with sulfonylureas in terms of patient-reported outcomes and hematological parameters.

Research Methodology: Data were collected through a cross-sectional study. Anthropometric and laboratory measurements were obtained, and results were analyzed using the Statistical Package for the Social Sciences (SPSS) version 23.0.

Results: A total of 105 participants were included and divided into two groups according to the type of treatment received. The SGLT2 inhibitor group had a statistically significant increase in fatigue and

weight loss compared to the sulfonylurea group, but a markedly lower rate of hypoglycemic episodes. Laboratory results showed significantly lower fasting blood sugar, glycated hemoglobin, total cholesterol, LDL, LDL:HDL ratio, and sodium levels in the SGLT2 inhibitor group.

Conclusion and Recommendations: SGLT2 inhibitors appear to be effective and safe treatment options for patients with type 2 diabetes, offering superior glycemic control, lipid improvement, and weight reduction compared to sulfonylureas. However, they may contribute to higher rates of fatigue. In contrast, sulfonylureas remain effective glucose-lowering agents but are associated with a higher risk of hypoglycemia and potential weight gain. Due to their low cost and accessibility, sulfonylureas are still commonly prescribed, especially in low- and middle-income countries. Controlled clinical trials with larger sample sizes are recommended to further clarify the comparative safety and efficacy of these drug classes.