

**Title:** Evaluation of weight loss with insulin and sodium-glucose cotransporter-2 inhibitors or glucagon-like peptide-1 receptor agonists in medically underserved patients with type 2 diabetes

**Authors and Institutions:** Lourdes M Vega, Pharm.D.<sup>1,2</sup>; Justinne Guyton<sup>1,2</sup>; 1. St. Louis College of Pharmacy; 2. St. Louis County Department of Public Health

**Introduction:** SGLT-2 inhibitors (SGLT2-i) and GLP-1 receptor agonists (GLP-1RA) achieve meaningful weight loss in most patients; however, effect in medically underserved patients, whom have additional environmental and psychosocial stresses, is unknown. This study evaluates real-world weight loss in patients with T2DM treated with SGLT-2i or GLP-1RA and insulin in a medically underserved area.

**Methods:** Retrospective chart review from 2015-2019 identified patients with T2DM on insulin started on an SGLT-2i or GLP-1RA at the Saint Louis County Department of Public Health. The primary outcome was change in body weight from SGLT-2i or GLP-1RA initiation to week 12. The following was collected at baseline, week 12, and 20 ± 4 weeks: weight, BMI, SGLT-2i/GLP-1RA dose, insulin daily dose, blood pressure, documented report of blood glucose ≤70 mg/dL, and HbA1c. Analysis of the primary endpoint and continuous secondary endpoints was performed using a paired t-test and a McNemar's test for categorical data.

**Results:** A total of 34 patients met inclusion criteria. Of these 74% were treated with a GLP-1RA. Mean weight at baseline was 250.7 pounds (SD 67.9). At 12 ± 4 weeks of therapy, the mean weight lost was 2 pounds (SD 6.4; p=0.08). At 12 and 20 ± 4 weeks, mean decrease in HbA1c was 1.54% (SD 2.29; p=0.004) and 1.71% (SD 2.18; p=0.046), respectively. No statistical difference was identified for other secondary endpoints.

**Conclusions:** No significant change in body weight from SGLT-2i or GLP-1RA initiation to week 12 was found. These findings suggest additional confounding factors of patients in medically underserved areas may blunt weight loss with SGLT-2i or GLP-1RA therapy.