

Changes in HbA1c and Body Weight in US Adults with Type 2 Diabetes and Chronic Kidney Disease Who Received Oral Semaglutide

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Aim

- To assess changes in HbA1c and body weight in United States (US) adults with type 2 diabetes (T2D) and chronic kidney disease (CKD) treated with oral semaglutide.

Introduction

- In the US, 38.4 million people were estimated to have diabetes in 2021, and T2D accounts for 90-95% of all diabetes cases.^{1,2}
- The prevalence of CKD among people with diabetes is greater than 25%, and 40% of people with diabetes are estimated to develop CKD during their lifetime.³
- Sodium-glucose cotransporter-2 inhibitor (SGLT2i) medications are shown to improve management of blood glucose levels and reduce the risk of renal and severe cardiovascular complications among patients with T2D and CKD.⁴⁻⁶
- However, a substantial proportion of patients with T2D and CKD are either not eligible for SGLT2is due to advanced CKD stages or experience suboptimal outcomes due to uncontrolled glycemic levels.
- Glucagon-like peptide 1 receptor agonists (GLP-1 RAs) are a well-established treatment option for patients with T2D and are recommended for patients unable to take or tolerate SGLT2is.⁷
- Oral semaglutide is the first oral GLP-1 analog approved for treatment of T2D and there is a lack of real-world evidence on the effectiveness of oral semaglutide in patients with both T2D and CKD, including subgroups of patients who were ineligible for or experienced suboptimal treatment with SGLT2i.

Methods

- This US-based, retrospective study used data from Optum's de-identified Clinformatics® Data Mart (January 2016–June 2023) and included adults with T2D and CKD who initiated oral semaglutide (full selection criteria shown in **Figure 1**).
- The index date was defined as date of first fill of oral semaglutide on or after September 20, 2019.
- Baseline characteristics were assessed during the 12 months prior to oral semaglutide initiation.
- CKD stage was defined as the most severe stage based on diagnosis codes and eGFR values prior to the index date.
- Patients were followed up until the earliest of discontinuation of oral semaglutide, initiation of any other new antidiabetic medication, the end of continuous claims enrollment, or death.
- HbA1c and body weight before vs. during oral semaglutide treatment were compared.
- Changes in HbA1c and body weight were described at Month 12, with trajectories evaluated using adjusted mixed-effects models in the overall cohort, and in the following subgroups:
 - Patients ineligible for SGLT2i due to advanced CKD stages
 - Patients for whom SGLT2is were suboptimal as indicated by treatment switching or augmentation with oral semaglutide after having received SGLT2i during the baseline period
- In the adjusted mixed-effects model, a spline term for time trend was included as the predictor, and patient characteristics at baseline, including key demographics, comorbidities, prior procedures and treatments, and baseline clinical values, were adjusted as covariates.

Results

- A total of 15,539 patients initiating oral semaglutide were included, among whom 6.5% of the patients were ineligible for SGLT2is and 33.7% of the patients had suboptimal treatment with SGLT2is.
- The baseline demographic and clinical characteristics in the overall cohort and in the subgroups are summarized in **Table 1**.
- At 12 months after initiation of oral semaglutide, a decline in HbA1c (12-month mean change [95% confidence interval]: -0.96% [-1.00%, -0.92%]) and decline in body weight (-4.16 kg [-4.53, -3.79]) from baseline were observed in the overall cohort. The mean changes in the two subgroups are described in **Figure 2**.
- HbA1c decreased following initiation of oral semaglutide, with the reduction maintained over 25 months in the overall cohort and the two subgroups (**Figure 3**).
- Body weight decreased over time in the overall cohort and among patients for whom SGLT2is were suboptimal as a T2D treatment (**Figure 3**).

