Effect of Daily or Weekly GLP-1 Receptor Agonists on Glycemic Control in Insulin-Naïve Patients with Poorly Controlled Type 2 Diabetes: A Real-World Study

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Introduction

• In patients with diabetes, poor glycemic control is associated with increased morbidity, mortality, and health care costs.1,2

• GLP-1 receptor agonists (GLP-1RA) have been shown to reduce HbA1c in patients with uncontrolled type 2 diabetes mellitus (T2DM).1,2

• There is limited data on once-weekly or once-daily GLP-1RA real-world outcomes in patients with uncontrolled or poorly controlled diabetes who are initiated on a GLP-1RA without prior insulin treatment.

Objectives

• Evaluate glycemic response to GLP-1RA therapy in insulin-naïve patients with T2DM.

• Report HbA1c outcomes in a subset of poorly controlled patients with HbA1c ≥9%

• Evaluate glycemic response to GLP-1RA therapy in insulin-naïve patients with poorly controlled T2DM in a real-world setting: HbA1c reduction was twice the overall average in the subset with baseline HbA1c ≥9%.

• GLP-1RAs may be considered in insulin-naïve patients with poorly controlled T2DM.

Methods

• Study Design, Timeline & Data Source

– Historical cohort study using Quintiles Electronic Medical Record (Q-EMR) database between Jan 1, 2011 and Mar 31, 2014

• Inclusion & Exclusion Criteria

– Patients included were ≥18 years of age at index date and diagnosed with T2DM, identified by ICD-9 codes, diabetes medication use, or HbA1c ≥6.5%.

– Patients newly prescribed with exenatide once-weekly (QW) or liraglutide once-daily between Feb 1, 2012 and Mar 31, 2013 (first prescription date–index date) and no prescriptions for insulin or GLP-1RA during 13 months prior to index date.

– Patients with index date (±60 days) HbA1c ≥7% and a 1 year follow up (±60 days) were included. Patients were excluded if they had a diagnosis of type 1 diabetes at any time per ICD-9 codes.

– Women with diagnosis of gestational diabetes during 12 months prior to index date and no prior T2DM diagnosis or treatment exclusion were excluded. Patients with prescription orders for 2 different GLP-1RA on index date or who switched to a different GLP-1RA within 30 days after index date were excluded.

• Study Outcomes and Analysis

– Change in HbA1c at 6 months and 12 months of follow up

– Proportion of patients reaching HbA1c <7% at follow up

– Overall and in patients with HbA1c ≥9% at index date

– Paired t-tests and chi-square tests to test difference between baseline and follow-up outcomes.

– Analysis was conducted using SAS 9.4 (SAS Institute Inc., Cary NC)

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Figure 1. Patient Selection Criteria

Patients with T2DM on 1 ≤2 OAD monotherapy between Jan 1, 2011 and Mar 31, 2014

– Age ≥18 years

– Baseline HbA1c (mean, SD) 8.6 1.4

– Baseline BMI (mean, SD) 37 7.4

– Female (N, %) 735 49.9

– No T1DM or gestational diabetes

– Without insulin

– New Rx of GLP-1RA

– On GLP-1RA for 2 months prior to index date

– On GLP-1RA for ≥6 months prior to index date

– Did not have index T2DM complications

– No history or family history of T2DM

– No patients with uncontrolled T2DM in a real-world setting; HbA1c reduction was twice the overall average in the subset with baseline HbA1c ≥9%

– GLP-1RAs may be considered in insulin-naïve patients with poorly controlled T2DM.

References