HSD14

Characteristics of US Commercially Insured Patients With Type 2 Diabetes Initiating Tirzepatide

Karishma Desai, PhD[1]; Reema Mody, PhD[2]; Chia-Chen Teng, MS[1]; Brian D. Benneyworth, MD, MS[2]; Gally Reznor, MS[1]; Grace Stockbower, MPH[1]; Michael Grabner, PhD[1]

[1]Carelon Research, Wilmington, DE

[2]Eli Lilly and Company, Indianapolis, IN

Sponsored by Eli Lilly and Company

Scan the QR code or use this URL (https://lillyscience.lilly.com/congress/ispor2024) for a list of all Lilly content presented at the congress. Other company and product names are trademarks of their respective owners.

OBJECTIVE

- To describe characteristics of patients with T2D initiating tirzepatide in a large commercially insured US population.

CONCLUSION

- More than half of patients with T2D initiating tirzepatide in a commercially insured US population had uncontrolled HbA1c and had obesity or were overweight, indicating the potential need for additional glycemic control.
- Approximately half of patients with T2D initiating tirzepatide were previously on GLP-1 RA therapy.
- Hypertension and dyslipidemia were the most common comorbidities, while the most common diabetes complication was neuropathy.

Abbreviations: BMI: body mass index; DPP-4i: dipeptidyl peptidase-4 inhibitor; GLP-1 RA: glucagon-like peptide-1 receptor agonists; HbA1c: glycated hemoglobin; HIRD®: Healthcare Integrated Research Database; SGLT-2i: sodium-glucose co-transporter 2 inhibitors; SD: standard deviation; T2D: type 2 diabetes; TZD: Thiazolidinediones; US: United States.

Acknowledgments: The authors would like to acknowledge Piyalee Pal, employee of Eli Lilly Services India Pvt. Ltd., for providing medical writing support.

Disclosures: Employees of Carelon Research, which received funding from Eli Lilly and Company for the conduct of this study: KD, CCT, GS, MG, GR. Elevance Health shareholders: KD, MG, CCT. Employees and shareholders of Eli Lilly and Company: BB, RM.

International Society for Pharmacoeconomics and Outcomes Research (ISPOR); Atlanta, GA; May 5 – 8, 2024

BACKGROUND AND METHODS

Introduction

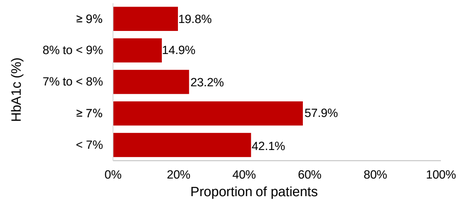
- Only 50.5% of people with type 2 diabetes (T2D) in the United States (US) achieved glycemic control (glycated hemoglobin [HbA1c] level <7%) between 2015 and 2018, highlighting the need for better management approaches.[1]
- Tirzepatide, a glucose-dependent insulinotropic polypeptide and glucagon-like peptide-1 receptor agonist, is approved in the US for the treatment of T2D and obesity.
- Multiple demographic and clinical risk factors may influence the treatment of T2D.[2,3] Given the relatively recent availability of tirzepatide, there is a need to understand the demographic, clinical, and prior treatment profile of patients initiating tirzepatide in the real world to better evaluate the change in clinical outcomes.

Study design and analysis

- This retrospective observational study used administrative claims and laboratory data from the Healthcare Integrated Research Database (HIRD®).
- Individuals (≥18 years of age) having ≥2 distinct claims of T2D diagnosis during pre-index (starting 2016 and inclusive of index date) with ≥1 treatment claims for tirzepatide from May 12, 2022 to July 31, 2023, and ≥6 months of continuous health plan enrollment before tirzepatide initiation (baseline) were included.
- Descriptive analyses were performed for baseline demographic and clinical characteristics.

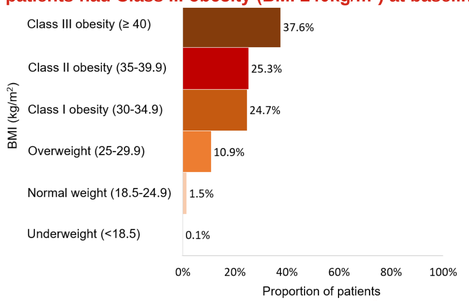
HbA1c AND BMI IN THE STUDY POPULATION

Among patients with available HbA1c data (N=12,342), 57.9% had HbA1c ≥7% at baseline



Mean (SD) HbA1c value was 7.6% (1.8)

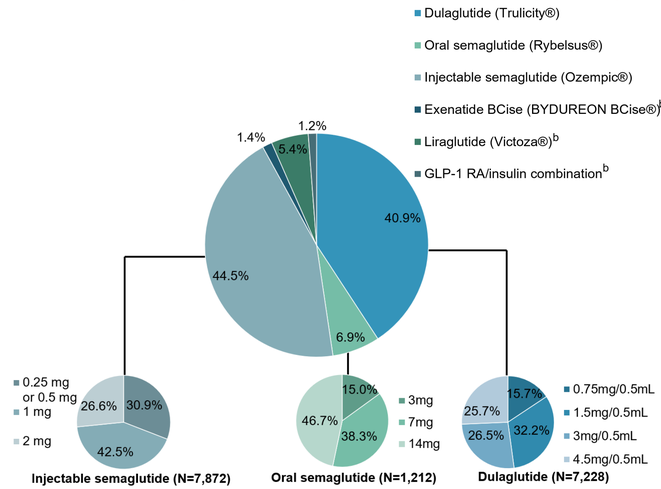
Among patients with available BMI data (N=8,561), 37.6% of patients had Class III obesity (BMI ≥40kg/m²) at baseline



Mean (SD) BMI was 38.5 (8.1) kg/m²

GLP-1 RA PRESCRIBED DOSE[a] PRIOR TO INITIATING TIRZEPATIDE

Among patients receiving GLP-1 RA, dulaglutide and injectable semaglutide were the most common therapies (N=17,672)



[a]Last prescribed dose was not mutually exclusive (N=17,687); [b]Last prescribed dose of other GLP-1 RA therapy: Exenatide BCise (BYDUREON BCise) 2mg/0.85mL: n=244; Exenatide BID (Byetta®) 5mcg/0.02mL n=7 and 10mcg/0.02mL n=7; Liraglutide (Victoza®) 18mg/3mL: n=947; GLP-1 RA/insulin combination: Xultophy 100/3.6: degludec 100units/mL. Liraglutide 3.6mg/mL: n=50 and Soliqua 100/3.6: glargine 100units/mL. Lixisenatide 3.6mg/mL: n=159.

Sociodemographic and clinical characteristics

Sociodemographic and Clinical Characteristics	Tirzepatide initiators (N=37,314)
Age on index date (years), Mean (SD)	53.5 (10.1)
Female, n (%)	21,884 (58.7)
Geographic region of residence of patient, n (%)	
South	17,897 (48.0)
Midwest	10,026 (26.9)
West	5,650 (15.1)
Northeast	3,741 (10.0)
Race/ethnicity, n (%) with data available	33,309 (89.3)
White, not Hispanic or Latino	25,498 (76.5)
Black or African American, not Hispanic or Latino	3,286 (9.9)
Hispanic or Latino of any race	3,058 (9.2)
Payor type, n (%)	
Commercial	33,962 (91.0)
Medicare Advantage and Supplement plans	3,352 (9.0)
Prescribing physician specialty for index tirzepatide claim, n (%)	
Primary care physician[a]	14,520 (38.9)
Endocrinologist	7,008 (18.8)
Other[b]	15, 447 (41.4)

[a]Primary care physician specialty included general/family practice, internal medicine, and geriatric medicine. [b]Other specialty included nurse practitioner, physician assistant, cardiologist, emergency medicine, obstetrics and gynecology, surgery, preventive medicine, gastroenterology, physical medicine and rehabilitation, psychiatry, hematology/oncology, infectious disease, nephrology, anesthesiology, pulmonology, dermatology, addiction medicine, pain management, neurology, allergy immunology, rheumatology, sports medicine, otolaryngology, critical care, and sleep medicine.

Common comorbidities

Comorbidities at Baseline[a]	Tirzepatide Initiators (N=37,314) n (%)
Hypertension	25,840 (69.3%)
Dyslipidemia	25,511 (68.4%)
Overweight or obesity	21,273 (57.0%)
Obstructive sleep apnea	8,321 (22.3%)
Anxiety	7,242 (19.4%)
Depression	6,456 (17.3%)

Hypertension and dyslipidemia were the most common comorbidities

74.7% and 65.7% of patients were receiving concomitant antihypertensive and antihyperlipidemic medications, respectively. However, only 2.5% were receiving anti-obesity medications.

[a]Patients with diagnosis claim for these selected comorbidities during the 6-month baseline period

The most common diabetes complication[a] was neuropathy

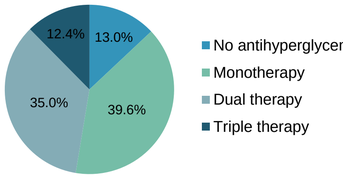
Adapted Diabetes Complication Severity Index Complication Category	Tirzepatide Initiators (N=37,314) n (%)
Neuropathy	7,227 (19.4%)
Cardiovascular complication	5,530 (14.8%)
Nephropathy	4,181 (11.2%)
Peripheral vascular disease	3,695 (9.9%)
Retinopathy	3,159 (8.5%)
Metabolic disorder	666 (1.8%)
Cerebrovascular complication	466 (1.2%)

Mean (SD) Adapted Diabetes Complication Severity Index score[b] was 0.9 (1.3).

[a]patients with diagnosis claim for these selected complications during the 6-month baseline period. [b]Adapted Diabetes Complication Severity Index score range is 0-13.

Number of antihyperglycemic medications

Almost 40% of patients with T2D initiating tirzepatide were on a single class of antihyperglycemic medication[a]



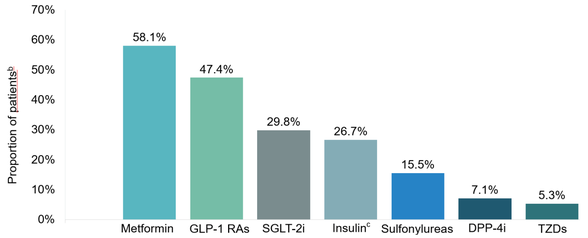
13% of patients had no fills of any antihyperglycemic medication at baseline.

[a]Antihyperglycemic medications include insulin, metformin, glucagon-like peptide-1 receptor agonists (GLP-1 RAs), sulfonylureas, dipeptidyl peptidase-4 inhibitors (DPP-4i), sodium-glucose co-transporter 2 inhibitors (SGLT-2i), and thiazolidinediones (TZDs).

Patients on different classes of antihyperglycemic medications in baseline

Metformin (alone or fixed-dose combination pill[a]) was the most frequently used antihyperglycemic medication before tirzepatide initiation (N=37,314)

13.7% of patients were on metformin monotherapy



[a]Medications that include metformin and one or more other diabetes medications in a single tablet; [b]Patients with combination antihyperglycemic medications are counted multiple times; [c]Insulin includes: Rapid-acting insulin: Insulin aspart (Fiasp®, Novolog®), insulin glulisine (Apidra®), insulin lispro (Admelog®, Humalog®, Lyumjev®), inhaled-insulin (Afrezza®) Other Insulin-(Myxredlin®), Short-acting insulin: Human Regular (Humulin R®, Novolin R®, Velosulin R®, ReliOn R), Intermediate-acting insulin: NPH (Humulin N®, Novolin N®, ReliOn N), Long-acting insulin: Glargine (Lantus®, Toujeo®, and Basaglar®), Detemir (Levemir®), Degludec (Tresiba®), U500, Premix: Humalog Mix75/25®, Humalog Mix 50/50®, Humulin 70/30®, Novolin 70/30®, Novolog 70/30®, Novolog Mix 50/50®, Ryzodeg70/30®, Humulin 50/50®, ReliOn 70/30.

Limitations

- Findings should be interpreted considering caveats of administrative database analyses, including potential coding errors and incomplete data.
- The requirement of 6-month continuous enrollment before index date may limit the generalizability of the study.
- Results may not be generalizable to all populations because commercially insured patients may have different characteristics than those with public or no health insurance.

References 1. Fang M, et al. N Engl J Med. 2021;384(23):2219-28; 2. Garber AJ, et al. Endocr Pract. 2020;26:107-139; 3. American Diabetes Association. Diabetes Care. 2024;47:Suppl 1:S11-S19.