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HSD30

Real-World Prescribing of GLP-1 RAs Among Patients with Overweight or Obesity in the United States

Patricia J Rodriguez, PhD MPH [1], Brianna M Goodwin Cartwright, MS [1], Samuel Gratzl , PhD[1], Rajdeep Brar, MD, MHS [1], Nicholas Stucky, MD PhD[1,2]
[1]Truveta Inc, Seattle, WA; [2] Providence St Joseph Health, Portland, OR

Background

Existing knowledge

- GLP-1RA-based medications have been FDA-approved as treatment for type 2 diabetes (T2D) in the US since 2005.
- Some GLP-1 RAs (semaglutide, liraglutide) have more recently received FDA approval as treatments for obesity in the US.
- GLP-1s RAs have recently gained widespread attention for weight loss in the US, with various GLP-1 RAs experiencing intermittent or prolonged shortages [1,2].
- High rates of off-label use of GLP-1 RAs labelled for treatment of T2D have been reported in media, but scientific literature is lacking.

Objective

- To describe recent trends in the real-world, first-time prescribing of GLP-1 RAs among patients with obesity or overweight in the US.

GLP-1 RA medications approved for use in the US

Medication		FDA –Labelled Use	
		T2D	Obesity
Semaglutide	0.5 mg (OZEMPIC)	√	
	7.0 mg oral (RYBELSUS)	√	
	2.4 mg (WEGOVY)		√
Tirzepatide	5.0 mg (MOUNJARO)	√	
Liraglutide	1.2 mg (VICTOZA)	√	
	3.0 mg (SAXENDA)		√
Dulaglutide	1.5 mg (TRULICITY)	√	
Lixisenatide	5.0 – 20.0 mcg (SOLIQUA)	√	
	20.0 mcg (ADLYXIN) [discontinued in US Jan 2023]	√	
Exenatide	2.0 mg (BYDUREON)	√	
	10.0 mcg (BYETTA)	√	

Standard full doses reported. Dose escalation scheduled used when initiating a GLP-1 RA. Doses may be increased above standard dose if needed.

Methods

Data

- A subset of Truveta Data was used; Truveta Data is comprised of real-world US electronic health record (EHR) data, which is aggregated, normalized, and de-identified from US health care systems comprising clinics and hospitals.
- Data included conditions, medication requests (e.g., prescriptions), laboratory values, and demographics.

Population

- First prescribed a GLP-1 RA between January 2021 and June 2023,
- Obesity (BMI ≥ 30) or overweight (BMI ≥27) in 12 months prior,
- Received regular care at the health care system,
- No history of type I diabetes, gestational diabetes, or diabetic retinopathy, and
- First prescription occurred post-approval.

Descriptive analysis

- First-time prescribing volume over time
- Patient demographic and health characteristics
- On- vs. off-label use for prescriptions where the labelled condition for could be identified or inferred using brand or generic name
- Seasonally adjusted autoregressive 1 (AR1) model to test for trends in prescribing volume over time

Results

Patient characteristics

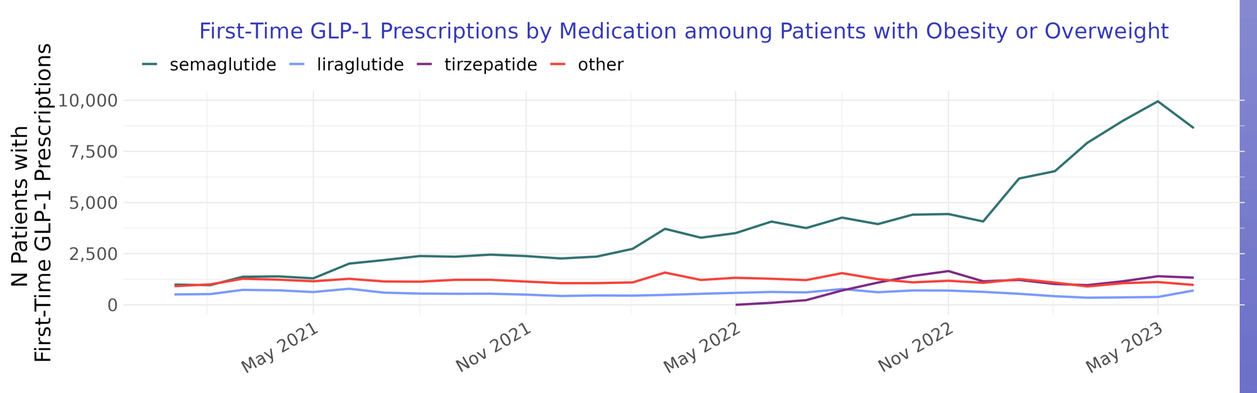
- N = 180,389 patients with overweight or obesity newly prescribed a GLP-1 RA
- Average age of 55.2 years and 67.2% were female
- 55.5% of patients also had type 2 diabetes (T2D)
- 60.8% of new prescriptions were for T2D-labelled medications. Of these, 55% were prescribed on-label (semaglutide: 66% on-label, liraglutide: 64% on-label, tirzepatide: 46% on-label, other: 85% on-label)

Patient characteristics by medication

	Semaglutide (N=114,842)	Liraglutide (N=17,029)	Tirzepatide (N=13,419)	Other (N=35,099)	Overall (N=180,389)
Age Group					
18-44	27,641 (24.1%)	6,242 (36.7%)	3,910 (29.1%)	4,870 (13.9%)	42,663 (23.7%)
45-64	57,914 (50.4%)	8,465 (49.7%)	7,204 (53.7%)	17,208 (49.0%)	90,791 (50.3%)
65+	29,287 (25.5%)	2,322 (13.6%)	2,305 (17.2%)	13,021 (37.1%)	46,935 (26.0%)
Female Sex	78,715 (68.5%)	13,461 (79.0%)	9,591 (71.5%)	19,767 (56.3%)	121,534 (67.4%)
Race					
White	81,506 (71.0%)	12,077 (70.9%)	9,994 (74.5%)	23,653 (67.4%)	127,230 (70.5%)
Black or African American	18,246 (15.9%)	3,069 (18.0%)	1,672 (12.5%)	6,077 (17.3%)	29,064 (16.1%)
Asian	2,719 (2.4%)	243 (1.4%)	207 (1.5%)	1,013 (2.9%)	4,182 (2.3%)
Other or Unknown Race	12,371 (10.8%)	1,640 (9.6%)	1,546 (11.5%)	4,356 (12.4%)	19,913 (11.0%)
On-label Condition					
Obesity	18,869 (16.4%)	5,652 (33.2%)	0 (0%)	0 (0%)	24,521 (13.6%)
T2D	57,115 (49.7%)	4,112 (24.1%)	13,419 (100%)	35,099 (100%)	109,745 (60.8%)
Unknown	38,858 (33.8%)	7,265 (42.7%)	0 (0%)	0 (0%)	46,123 (25.6%)
Comorbidities					
Bariatric Surgery	4,086 (3.6%)	1,103 (6.5%)	517 (3.9%)	630 (1.8%)	6,336 (3.5%)
Asthma	23,597 (20.5%)	4,029 (23.7%)	2,693 (20.1%)	6,603 (18.8%)	36,922 (20.5%)
CKD	14,676 (12.8%)	1,664 (9.8%)	1,175 (8.8%)	7,480 (21.3%)	24,995 (13.9%)
COPD	8,098 (7.1%)	1,175 (6.9%)	708 (5.3%)	4,064 (11.6%)	14,045 (7.8%)
Hyperlipidemia	75,414 (65.7%)	8,838 (51.9%)	8,135 (60.6%)	26,896 (76.6%)	119,283 (66.1%)
Hypertension	75,442 (65.7%)	9,616 (56.5%)	8,213 (61.2%)	27,610 (78.7%)	120,881 (67.0%)
Ischemic Heart Disease	8,179 (7.1%)	927 (5.4%)	715 (5.3%)	4,247 (12.1%)	14,068 (7.8%)
Major Depressive Disorder	26,162 (22.8%)	4,802 (28.2%)	2,813 (21.0%)	7,536 (21.5%)	41,313 (22.9%)
T2D	58,210 (50.7%)	4,937 (29.0%)	6,144 (45.8%)	30,123 (85.8%)	99,414 (55.1%)
Anti-diabetic medications					
Insulin	8,537 (7.4%)	1,450 (8.5%)	724 (5.4%)	4,961 (14.1%)	15,672 (8.7%)
Metformin	48,470 (42.2%)	4,833 (28.4%)	4,992 (37.2%)	23,034 (65.6%)	81,329 (45.1%)
SGLT2i	15,826 (13.8%)	1,142 (6.7%)	1,489 (11.1%)	8,743 (24.9%)	27,200 (15.1%)
Anti-obesity medications					
Orlistat	251 (0.2%)	97 (0.6%)	17 (0.1%)	34 (0.1%)	399 (0.2%)
Phentermine Topiramate	768 (0.7%)	251 (1.5%)	119 (0.9%)	39 (0.1%)	1,177 (0.7%)

Prescribing trends

- Significant increase in seasonally-adjusted first-time prescribing ($p < .001$)
- January to June prescription volumes were 1.6 times higher in 2022 and 3.4 times higher in 2023, compared to 2021.



Conclusions

- New prescribing of GLP-1 RAs among patients with overweight or obesity has increased since 2021, including prescribing of T2D-labeled medications to patients with no evidence of T2D.
- Additional work is needed to understand initiation, adherence, and outcomes among patients newly prescribed a GLP-1 RA.

In a large and diverse real-world EHR dataset, **GLP-1 RA prescribing for patients with overweight or obesity significantly increased since 2021**, with **3.4-fold higher** January-June prescribing volumes in 2023 compared to 2021.

Disclosures: PJR, BGC, SG, RB, and NS are employees of Truveta Inc.

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