Tirzepatide use in People with HIV Shows Effectiveness for Weight Loss and Diabetic Control

Comparisons with Semaglutide

Heidi M. Crane[1], Stephanie A. Ruderman[1], Lydia N. Drumright[1], Lara Haidar[2], Bridget M. Whitney[1], D. Scott Batey[3], Maile Karris[4], Ryan P. Kyle[1], Carolyn A. Fahey[1], Y. Joseph Hwang[5], Kenneth H. Mayer[6], Sonia Napravnik[7], Mari M. Kitahata[1], Kristina Crothers[1], Joseph A.C. Delaney[1]

1 University of Washington; 2 University of Manitoba; 3 Tulane University; 4 University of California, San Diego; 5 Johns Hopkins University; 6 Fenway Health; 7 University of North Carolina, Chapel Hill

697

BACKGROUND

- Semaglutide is a glucagon-like peptide-1 (GLP-1) receptor agonist, and tirzepatide is a newer glucose-dependent insulinotropic polypeptide (GIP)-GLP-1 combination medication.
  - Both are indicated for treatment of diabetes and obesity, including for people with HIV (PWH).
- There may be differential impact of each on weight loss and diabetes control (measured by hemoglobin A1c, HbA1c), but evidence is limited among PWH.

We assessed weight and HbA1c change among PWH taking tirzepatide or semaglutide

METHODS

Setting & Participants

Centers for AIDS Research Network of Integrated Clinical Systems (CNICS) Cohort

CNICS is a 10-site cohort of adult PWH engaged in care at academic clinics across the US

New-users of semaglutide or tirzepatide were included in this study

Observation Period

Semaglutide: 04/2018 – 07/2025
Tirzepatide: 08/2022 – 07/2025

Outcomes

1. Percent change in weight
2. Change in hemoglobin A1c

Analysis

Linear mixed model adjusted for age, sex, race/ethnicity, and time

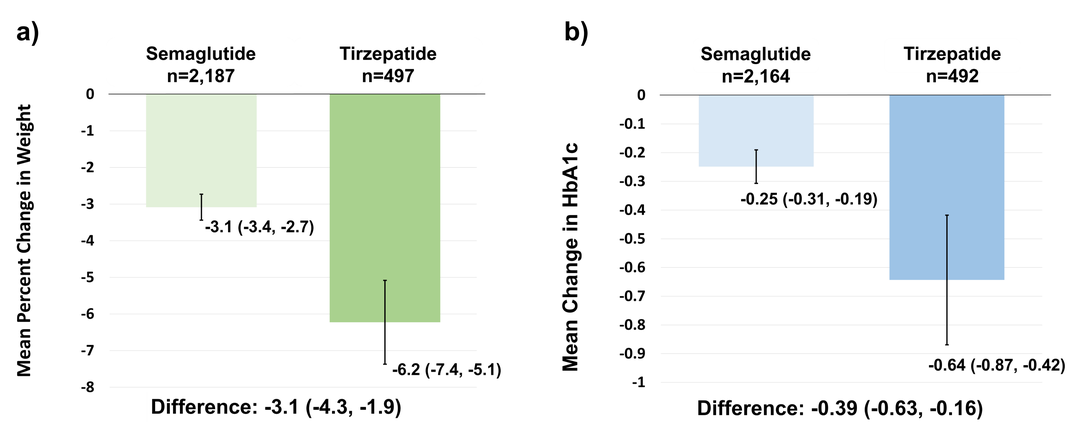
Stratified by BMI (<30 vs. ≥30), sex (male vs. female), and diabetes status

Secondary analysis restricted to PWH who newly initiated semaglutide/tirzepatide in the same observation period (08/2022 – 07/2025)

People with HIV taking ***tirzepatide*** **lost 3.1% more bodyweight** and **had 0.39 percent greater hemoglobin A1c reduction** than those taking **semaglutide** in routine care

RESULTS

Figure 1. Comparison of change in (a) percent bodyweight and (b) hemoglobin A1c in adjusted models among people with HIV who initiated tirzepatide vs. semaglutide



- Results were consistent in stratified models among male PWH, female PWH, and PWH with BMI ≥30 for weight loss – **all strata experienced greater loss on tirzepatide vs. semaglutide**
- Results were consistent in stratified models among male PWH, PWH with diabetes and PWH with BMI ≥30 for diabetes control– **all strata experienced greater HbA1c reduction on tirzepatide vs. semaglutide**
- We observed a *similar difference in weight loss* and *no significant difference in HbA1c change* when observation periods were restricted to 2022 and later

RESULTS

Table 1. Baseline Characteristics by Medication

	Semaglutide	Tirzepatide
N (%) or mean (SD)	N=2,187	N=497
Age	52.4 (10.9)	51.9 (11.0)
Female	555 (25.4%)	126 (25.4%)
Non-Hispanic White	885 (40.5%)	187 (37.6%)
Non-Hispanic Black	844 (38.6%)	190 (38.2%)
Body Mass Index (BMI)	35.6 (7.7)	36.4 (7.8)
BMI ≥30	1,712 (78.9%)	410 (83.0%)
Hemoglobin A1c (HbA1c)	6.9 (2.0)	6.6 (1.9)
HbA1c ≥6.5	901 (42.1%)	171 (35.0%)
Diabetes	1,192 (54.5%)	265 (53.3%)

LIMITATIONS

- Recent introduction of tirzepatide limited follow-up time

CONCLUSIONS

- Tirzepatide is an effective treatment option for obesity and diabetes control in PWH
- Our findings offer real-world evidence to support reports from trials
- Tirzepatide may offer greater benefit than semaglutide in some subgroups
- Longer follow-up will aid in further evaluating these findings

ADDITIONAL INFORMATION

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Contact: Heidi Crane, hcrane@uw.edu

Plain language summary: In a cohort of PWH engaged in clinical care who initiated either semaglutide (a GLP-1 receptor agonist) or tirzepatide (a GIP-GLP-1), we observed that those who initiated tirzepatide experienced greater reduction in bodyweight and hemoglobin A1c.