

Lauren F. O'Connor<sup>1</sup>, Alan Greenberg<sup>1</sup>, Cynthia Ogden<sup>1</sup>, Michael Horberg<sup>2</sup>, Megan O'Brien<sup>1</sup>, Amanda D. Castel<sup>1</sup> on Behalf of the DC Cohort Executive Committee

<sup>1</sup>George Washington University Milken Institute School of Public Health, Washington, DC, United States, <sup>2</sup>Kaiser Permanente Mid-Atlantic Permanente Medical Group, Washington, DC, United States

## BACKGROUND

- GLP-1 receptor agonists are effective treatments for diabetes, obesity, and cardiac risk reduction.
- GLP-1 medications have been found to be safe and effective among PWH.<sup>1-5</sup>
- Few data are available describing the overall population of PWH who take a GLP-1 medication.

**Objective #1:** Describe a subset of participants taking a GLP-1 receptor agonist in a large cohort of PWH.

**Objective #2:** Evaluate factors associated with 5-9.9% and ≥ 10% weight loss after GLP-1 initiation among PWH.

## METHODS

Data collected from the **DC Cohort Longitudinal HIV Status Neutral Study** - 13,000+ participants receiving HIV prevention services or HIV care in Washington, DC.

#1. Participants were included in the analysis if they:

- Have HIV *and*
- Took a GLP-1 medication for ≥ 6 months

#2. Demographics and clinical characteristics were collected from the EHR at time of GLP-1 initiation.

#3. **Weight change measured by comparing baseline weight to weight 6-12 months after GLP-1 initiation.**

#4. Chi-square test, Wilcoxon Rank Sum test, and logistic regression used to compare participants with **< 5% weight loss, 5-9.9% weight loss, and ≥ 10% weight loss.**

## RESULTS

**N = 362**

<b>Average Time on GLP-1 Medication</b> 3.2 years	<b>Most Common GLP-1 Medication</b> Semaglutide (50%)
<b>Participants with Diabetes</b> 82%	<b>Participants with Obesity at GLP-1 Initiation</b> 78%
<b>&gt; 3 Month Gap in GLP-1 Prescription*</b> 71%	<b>Weight Gain Range</b> 0.3-25% (N = 112) <sup>+</sup> <b>Weight Loss Range</b> 0.2-28% (N = 239) <sup>+</sup>

\*> 3 months between end date of one GLP-1 prescription order and start date of the next prescription order

<sup>+</sup>11 participants had no weight change

**PWH and diabetes were less likely to lose ≥ 5% and ≥ 10% of weight after taking a GLP-1 RA than PWH without diabetes.**

**Table 1.** Distribution of participant characteristics, stratified by those who lost < 5% of weight, 5-9.9% of weight, and ≥ 10% of weight, N=362.

Variable	Weight Loss < 5% (N (%))	Weight Loss 5-9.9% (N (%))	Weight Loss ≥ 10% (N (%))	p-value
	252 (69.6%)	70 (19.3%)	40 (11.1%)	
<b>Years taking GLP-1 (Mean [St.Dv.]: 3.2 (2.6))</b>	3.4 (2.6)	2.9 (2.7)	2.3 (1.9)	<b>0.04</b>
<b>BMI (Mean [St.Dv.]: 35.9 (8.0))<sup>a</sup></b>	35.4 (7.8)	38.2 (9.3)	35.0 (5.9)	<b>0.02</b>
<b>Diabetes Status<sup>b</sup></b>				<b>&lt; 0.01</b>
<i>History of Diabetes (N= 298; 82.3%)</i>	218 (86.5%)	58 (82.9%)	22 (55.0%)	
<i>No History of Diabetes (N = 64; 17.7%)</i>	34 (13.5%)	12 (17.1%)	18 (45.0%)	
<b>Race/Ethnicity<sup>c</sup></b>				<b>0.01<sup>d</sup></b>
<i>Hispanic (N = 35; 9.7%)</i>	23 (9.1%)	8 (11.4%)	4 (10.0%)	
<i>Non-Hispanic Black (N = 284; 78.5%)</i>	206 (81.8%)	50 (71.4%)	28 (70.0%)	
<i>Non-Hispanic White (N = 32; 8.8%)</i>	17 (6.8%)	7 (10.0%)	8 (20.0%)	
<b>Age [years] (Mean [St.Dv.]: 54.8 (9.5))<sup>a</sup></b>	55.1 (9.4)	53.5 (9.7)	54.8 (9.6)	0.38
<b>Sex</b>				0.72
<i>Female (N = 118; 32.6%)</i>	85 (33.7%)	22 (31.4%)	11 (27.5%)	
<i>Male (N = 244; 67.4%)</i>	167 (66.3%)	48 (68.6%)	29 (72.5%)	
<b>Years Since HIV Diagnosis (Mean [St.Dv.]: 19.5 (8.5))<sup>a</sup></b>	19.6 (8.1)	19.2 (10.2)	19.4 (7.7)	0.70
<b>CD4 [cells/μL] (Mean [St.Dv.]: 797.8 (356.2))<sup>a</sup></b>	766.7 (355.4)	855.4 (350.1)	892.3 (351.7)	0.07

<sup>a</sup>Measured at GLP-1 RA initiation; <sup>b</sup>Defined as history of diabetes diagnosis, HgA1c > 6.5, or medication for high glucose; <sup>c</sup>11 participants had other/unknown race/ethnicity; <sup>d</sup>Calculated using Fisher's exact test

**Table 2.** Odds Ratios (95% CI) comparing those above and below each respective weight loss cut-off, adjusting for BMI, diabetes, race/ethnicity, and age.

Variable	Weight Loss ≥ 5% vs. < 5%	Weight Loss ≥ 10% vs. < 10%
<b>BMI<sup>a</sup></b>	1.03 (1.00, 1.06)	0.98 (0.94, 1.03)
<b>Diabetes Status</b>		
<i>History of Diabetes</i>	<b>0.47 (0.26, 0.84)</b>	<b>0.21 (0.10, 0.45)</b>
<i>No History of Diabetes</i>	1.00	1.00
<b>Race/Ethnicity</b>		
<i>Hispanic</i>	0.54 (0.19, 1.56)	0.50 (0.11, 2.29)
<i>Non-Hispanic Black</i>	0.47 (0.22, 1.01)	0.51 (0.19, 1.33)
<i>Non-Hispanic White</i>	1.00	1.00
<b>Age [years]<sup>a</sup></b>	1.00 (0.98, 1.03)	1.02 (0.98, 1.06)

<sup>a</sup>Measured at GLP-1 RA initiation

## CONCLUSIONS

- 30.4% participants lost ≥ 5% of weight, confirming prior findings that **GLP-1s are effective among PWH.**
- Potential racial disparities were identified, but were non-significant after adjusting for BMI, diabetes, and age,** further research is needed given racial underrepresentation in GLP-1 trials.<sup>6</sup>
- As in the general population<sup>7</sup>, PWH with a history of diabetes were less likely to have ≥ 10% weight loss, suggesting **lower weight loss effects among PWH and diabetes.**

## REFERENCES

(1) Zino L. et. al. *HIV Medicine* 2023; (2) Nguyen Q et. al. *Clin Infect Dis* 2024; (3) Lee D et. al. *AIDS* 2024; (4) Haidar L et. al. *AIDS* 2024; (5) Eckard AR et. al. *Lancet Diabetes Endocrinol* 2024; (6) Kimberly H et. al. *Am J Gastroenterology* 2025; (7) Vosoughi K et. al. *Obesity Medicine* 2022

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**Author Contact Information:** Lauren O'Connor, PhD, MPH ~ laurenocconnor@gwu.edu