

Do GLP-1 Receptor Agonists Lead to Weight Loss in Persons with HIV?

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Introduction

- Of nearly 38 million people with HIV (PWH), more than half are receiving antiretroviral therapy (ART).
- Many PWH on ART experience weight gain, lipodystrophy, and metabolic derangements.¹⁻³
- GLP-1 receptor agonists (GLP-1RA) are used to treat T2 diabetes and obesity, but data are limited in PWH.
- The aim of this study was to assess changes in weight and glycemic control among PWH on ART started on GLP-1RA compared to those started on metformin only.

Methods

- We reviewed charts of PWH prescribed ART and GLP-1RA or metformin at University Medical Center-New Orleans.
- Diabetes status (based on prior Hba1c% or documented diagnosis) was recorded but not required for inclusion.
- We tracked body weight from initiation of GLP-1RA or metformin to September 2022, then calculated body mass index (BMI) and percent change over time.
- We compared baseline characteristics using Fisher exact tests for categorical and t-tests for continuous variables.
- Linear mixed models were used to determine if GLP-1RA had a differential effect on BMI change over time, adjusted for repeated measures, baseline BMI, and follow-up time.

Results

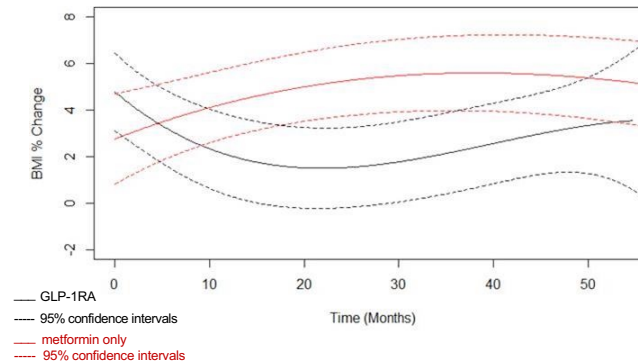
- 147 participants were prescribed metformin only.
- 38 participants were prescribed GLP-1RA.
 - Semaglutide for 12, liraglutide for 14, and duraglutide for 13.
 - 22 were prescribed concomitant metformin.
- Significant baseline differences were observed between the two groups for age, diabetes status, Hb A1C levels, and HIV viral suppression.

Table 1. Baseline Characteristics

Baseline characteristics	GLP-1RA (38)	Metformin only (147)	P-Value
	Count/Mean (%/SD)		
Age	54.95 (10.5)	51.11 (9.8)	0.046
Male Assigned Sex	22 (57.9)	87 (59.2)	1
Race:			
Black	32 (84.2)	117 (79.6)	0.648
Not Black race	6 (15.8)	30 (20.4)	
Hispanic	0	4 (2.7)	0.583
Type 2 Diabetes Mellitus	32 (86.5)	89 (61.0)	0.003
Hb A1c%	9.3 (2.65)	7.4 (2.1)	<0.001
BMI	35.6 (9.5)	34.5 (9.1)	0.531
Viral load <200 copies/mm ³	35 (92.1)	100 (68.0)	0.002
CD4 count >500	23 (60.5)	97 (66.0)	0.57
Prescribed TAF	34 (89.5)	141 (95.9)	0.125
Prescribed INSTI	33 (86.8)	106 (72.1)	0.09
Mean Months Follow-up	21.7 (15.2)	42.8 (33.9)	<0.001

HbA1c: hemoglobin a1c; TAF: tenofovir alafenamide; INSTI: integrase strand transfer inhibitor

Figure 1. Predicted BMI Percent Change by Treatment Group



Results

- When adjusted for follow-up time and baseline BMI, those prescribed GLP-1RA differed significantly from metformin controls in predicted trends of BMI percent change over time ($p = 0.0004$). See figure.
- Proportion with max BMI and final BMI percent losses >10% did not differ between the two groups.

Table 2. BMI Changes

	GLP-1RA	Metformin	P-value
Max BMI Loss >10%	7 (18.4%)	50 (34.0%)	0.077
Final BMI Loss >10%	6 (16.2%)	30 (20.7%)	0.648

Conclusions

- Patients on GLP-1RA had significantly different trajectories of weight loss than those prescribed metformin only; however, there were not meaningful differences in maximum or final percent changes in BMI.
- This study was limited as a retrospective review with a small sample size.
- Further investigation to evaluate the efficacy of GLP-1RA therapy for weight loss in PWH is needed.

References

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