

## Background

- HIV-associated wasting (HIVAW) is progressive, involuntary weight loss with both fat and lean tissue loss
- Prevalence of HIVAW was estimated at 18% in the United States (US) from 2012-2018<sup>1</sup>
- HIVAW is an under-appreciated concern despite advancements in antiretroviral therapy (ART)

## Objective

Assess potential predictors of incident HIVAW/low weight among adults living with HIV in the US.

## Methods

### Study Population

- OPERA® observational cohort
  - Prospectively captured, routine clinical data from electronic health records
  - Represents ~13% of people with HIV in the US<sup>2</sup>
- Inclusion criteria
  - People living with HIV (PWH)
  - 18 years of age or older
  - In care: ≥ 1 visit in OPERA® from 2016-2020
  - No malignancy within 3 years or AIDS-defining opportunistic infection (OI) within 12 months of eligibility date
  - No prior HIVAW/low weight
- Baseline: First date between 01JAN2016 and 31DEC2020 eligibility criteria were met
- Follow-up through 31OCT2021

### Incident HIVAW/Low Weight

- New wasting or low BMI/underweight diagnosis (ICD codes, title search) or first BMI < 20 kg/m<sup>2</sup> over follow-up

### Analyses

- Multivariable logistic regression models, stratified by ART experience at baseline
- Baseline demographic and clinical characteristics selected *a priori* based on scientific literature and expert opinion

## Results

**Table 1. Select Baseline Characteristics of ART-Naïve People with HIV in OPERA® (N = 11,525)**

Baseline Characteristic, n (%) or Median (IQR)	With HIVAW / low weight N = 1,152	Without HIVAW / low weight N = 10,373
<b>Age</b>		
18 to < 40 years	811 (70)	6,627 (64)
40 to < 55 years	230 (20)	2,729 (26)
≥ 55 years	111 (10)	1,017 (10)
<b>Female sex</b>	186 (16)	1,700 (16)
<b>Black race</b>	670 (58)	5,669 (55)
<b>Hispanic ethnicity</b>	174 (15)	2,216 (21)
<b>Medicaid</b>	171 (15)	1,315 (13)
<b>VACS Mortality Index score</b>	20 (10, 39)	16 (7, 27)
<b>Months between HIV diagnosis &amp; baseline</b>		
< 1	462 (40)	4,311 (41)
1 to <12	159 (14)	1,242 (12)
≥ 12	531 (46)	4,820 (47)

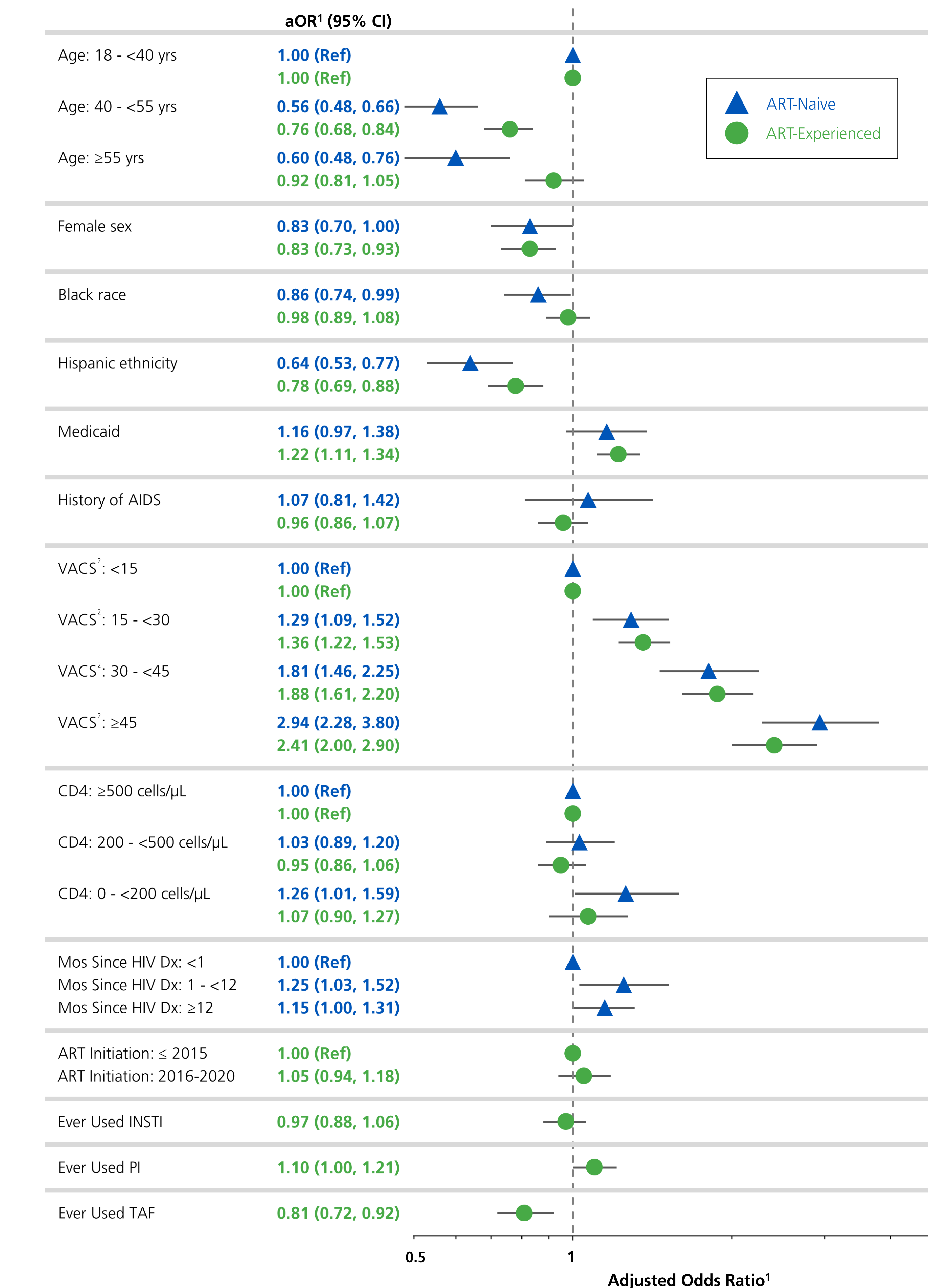
ART, antiretroviral therapy; HIV, human immunodeficiency virus; HIVAW, HIV-associated wasting; IQR, interquartile range; VACS, Veterans Aging Cohort Study

**Table 2. Select Baseline Characteristics of ART-Experienced People with HIV in OPERA® (N = 39,166)**

Baseline Characteristic, n (%) or Median (IQR)	With HIVAW / low weight N = 2,306	Without HIVAW / low weight N = 36,860
<b>Age</b>		
18 to < 40 years	947 (41)	15,414 (42)
40 to < 55 years	790 (34)	14,560 (40)
≥ 55 years	569 (25)	6,886 (19)
<b>Female sex</b>	443 (19)	6,823 (19)
<b>Black race</b>	1,154 (50)	16,926 (46)
<b>Hispanic ethnicity</b>	413 (18)	8,513 (23)
<b>Medicaid</b>	757 (33)	10,039 (27)
<b>VACS Mortality Index score</b>	18 (7, 33)	12 (6, 24)
<b>Ever used INSTI</b>	1,398 (61)	22,859 (62)
<b>Ever used PI</b>	825 (36)	11,445 (31)
<b>Ever used TAF</b>	549 (24)	10,118 (27)

ART, antiretroviral therapy; HIV, human immunodeficiency virus; HIVAW, HIV-associated wasting; INSTI, integrase strand transfer inhibitor; IQR, interquartile range; PI, protease inhibitor; TAF, tenofovir alafenamide; VACS, Veterans Aging Cohort Study

**Figure 1. Predictors of Incident HIV-Associated Wasting/Low Weight Among 11,525 ART-Naïve and 39,166 ART-Experienced People with HIV in OPERA®**



AIDS, acquired immunodeficiency syndrome; aOR, adjusted odds ratio; ART, antiretroviral therapy; CI, confidence interval; Dx, diagnosis; HIV, human immunodeficiency virus; INSTI, integrase strand transfer inhibitor; μL, microliter; Mos, months; PI, protease inhibitor; TAF, tenofovir alafenamide; VACS, Veterans Aging Cohort Study; yrs, years

<sup>1</sup>Adjusted for all variables in the model

<sup>2</sup> VACS Mortality Index: Composite index used to estimate a 5-year risk of all-cause mortality; a higher VACS score is associated with a higher risk of mortality

## Discussion

- Incident HIVAW/low weight was identified in 7% of a large population of PWH in the US from 2016-2020
- Similar patterns among demographic and clinical predictors were observed among ART-naïve and ART-experienced PWH
- Increasing VACS Mortality Index<sup>3</sup> scores, resulting from increased severity of HIV and/or comorbidities, were associated with higher odds of incident HIVAW/low weight
- Among ART-Experienced PWH, tenofovir alafenamide (TAF) was associated with an almost 20% decrease in the odds of incident HIVAW/low weight
  - TAF has been associated with weight gain, though the mechanism is unclear<sup>4</sup>
- Limitation: The definition of HIVAW/low weight may be an imprecise estimate of true HIVAW in the absence of an objective measure such as a diagnostic test or lab result

## Key Finding

Advanced HIV and comorbidities significantly predict new onset HIVAW/low weight. Assessment of frailer PWH for wasting should be prioritized.

## References

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