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Treatment Switch Among Medicare-Insured People With HIV and Gaps in Care

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Conclusions

- This study examined treatment-experienced people with HIV (PWH) who were Medicare beneficiaries with low adherence to the index therapy or a gap in care prior to initiating therapy
- We found that individuals who indexed on bictegravir/emtricitabine/tenofovir alafenamide (B/F/TAF) had lower likelihood of switch versus those starting other regimens
- Findings from this study underscore the importance of optimizing antiretroviral therapy (ART) selection to reduce treatment switching and improve persistence, particularly among PWH with adherence challenges or prior gaps in care
- Future studies should assess reasons for switching and the reason for initial selection of the index therapy for each person with HIV, which this analysis did not capture

Plain Language Summary

- Antiretroviral therapy (ART) is critical for people with HIV (PWH) to stay healthy. This study looked at how long PWH stayed on their ART prior to switching to another therapy among Medicare beneficiaries who had low adherence to therapy or significant treatment gaps prior to reinitiating therapy
- The study assessed 30,205 PWH insured by Medicare who had taken HIV medicines before. About 20% of these people (1 out of 5) had low adherence measured by proportion of days covered less than 85% on the first regimen included in this study. About 25% (1 out of 4) had a previous ≥ 90-day gap in treatment
- PWH who did not take their medicine as often as prescribed or with a history of gaps in HIV treatment had a lower risk of switch when taking B/F/TAF compared with dolutegravir/abacavir/lamivudine (DTG/ABC/3TC) and multi-tablet regimens

Introduction

- Adherence and persistence to ART are crucial for long-term treatment success for PWH[1]
- Medicare, a federally funded health insurance program for adults ≥ 65 years old and for younger individuals with certain disabilities, covers approximately 28% of PWH in the United States[2]; however, few studies have evaluated ART treatment patterns in this population
- With the proportion of PWH who are eligible for Medicare and receiving long-term treatment continuing to increase,[3] a better understanding of ART adherence and persistence in this population is needed to inform optimal ART selection

Objective

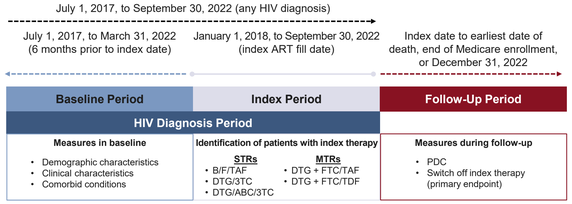
- The goal of this study was to describe treatment switch patterns among treatment-experienced PWH insured by Medicare with low ART adherence or significant treatment gaps prior to reinitiating ART

Methods

Study Design

This retrospective cohort study used claims data from Medicare Fee-For-Service and Medicare Advantage programs. Patients from a 100% Medicare sample were identified using ICD-10-CM diagnosis codes for HIV during 2017-2022 (**Figure 1**)

Figure 1. Study Design



3TC, lamivudine; ABC, abacavir; ART, antiretroviral therapy; B/F/TAF, bictegravir/emtricitabine/tenofovir alafenamide; DTG, dolutegravir; FTC, emtricitabine; MTR, multi-tablet regimen; PDC, proportion of days covered; TAF, tenofovir alafenamide; TDF, tenofovir disoproxil fumarate; STR, single-tablet regimen.

Study Population

- Individuals aged ≥ 18 years with treatment experience and having continuous Medicare Parts A, B, and D coverage during the 6-month baseline and ≥ 3 months during the variable follow-up period
  - Treatment-experienced: defined as having a record of ART treatment prior to switching to or restarting the index regimen between January 1, 2018, and September 30, 2022
  - Index date: the earliest date switching to or restarting a line of therapy of interest
  - Baseline period: 6 months prior to index date
  - Follow-up period: from index date until censoring events; requiring at least 3 months' follow-up time

Study Cohorts, Covariates, and Outcomes

- Study cohorts
  - PWH with low adherence on index regimen: low adherence measured by proportion of days covered (PDC) < 85% during the first 12 months of follow-up
  - PWH who had a previous gap in treatment: those who had a gap in therapy of ≥ 90 days during the baseline period prior to initiating the index regimen
- Covariates during 6-month baseline
  - Demographics, comorbid conditions, PDC with ART, hospitalization, emergency department visits, skilled nursing facility admission, and total physician visits
- Outcomes during follow-up
  - Treatment switch was defined as starting a new regimen (different from the index regimen) within 90 days of the last fill of the index ART
  - Time to switch was measured from the index date to the switch date with censoring at death date, discontinuation (having a ≥ 90-day gap between fills of the index ART), end of Medicare enrollment, and December 31, 2022

Statistical Analysis

- Frequencies and percentages were reported for categorical variables, and means, standard deviations, medians, and quantiles for continuous variables
- Kaplan-Meier curves and log-rank tests were used to compare time until treatment switch
- Inverse probability treatment weighting (IPTW) was conducted to control for differences in baseline demographics (eg, age, sex, race/ethnicity, dual Medicare/Medicaid status, and Medicare Part D low-income subsidy status), comorbidities (eg, hypertension, diabetes, cardiovascular disease, kidney disease, liver disease, mental illness, substance abuse, and HIV-related infections), and baseline PDC
- Multivariate Cox proportional hazard models were used to compare adjusted risk of switching, controlling for baseline hospitalization, emergency department visit, skilled nursing facility admission, and total physician visits, after IPTW

Results

Demographics and Characteristics

- Of 30,205 treatment-experienced PWH, 6140 had low adherence (PDC < 85%) on the index regimen and 7227 had a previous gap in treatment
- Among PWH with low adherence, 4086/6140 (67%) were indexed on B/F/TAF, 351/6140 (6%) on dolutegravir (DTG)/lamivudine (3TC), 1501/6140 (24%) on DTG/abacavir (ABC)/3TC, and 202/6140 (3%) on multi-tablet regimens (MTRs). Compared with those indexed on other regimens, PWH indexed on DTG/3TC were older, had a higher prevalence of being non-Hispanic White, and a lower prevalence of Medicare/Medicaid dual eligibility and the Part D low-income subsidy (**Table 1**)
- Most PWH who had a previous gap in treatment were indexed on B/F/TAF (6189/7227 [86%]); 543/7227 (8%) were indexed on DTG/3TC, 294/7227 (4%) on DTG/ABC/3TC, and 201/7227 (3%) on MTRs. Demographic characteristics were generally similar to those of the low-adherence population (**Table 2**)

Table 1. Baseline Characteristics for PWH With Low Adherence

Demographic or Characteristic	B/F/TAF N = 4086	DTG/3TC N = 351	DTG/ABC/3TC N = 1501	MTRs N = 202
Age, years, mean (range)	54.9 (21.5-93.6)	59.6 (29.0-90.5)	55.6 (22.7-90.1)	52.7 (26.2-91.1)
Male sex, n (%)	2863 (70)	223 (64)	1005 (67)	136 (67)
Race/ethnicity, n (%)				
Non-Hispanic White	1431 (35)	147 (42)	523 (35)	79 (39)
Non-Hispanic Black	2258 (55)	168 (48)	816 (54)	104 (51)
Other	397 (10)	36 (10)	162 (11)	19 (9)
Residence in large metropolitan area, n (%)	3720 (91)	317 (90)	1382 (92)	179 (89)
Medicare/Medicaid dual-eligible, n (%)	2797 (68)	217 (62)	1027 (68)	143 (71)
Part D low-income subsidy, n (%)	3393 (83)	261 (74)	1234 (82)	176 (87)
Charlson comorbidity index, mean (SD)	3.5 (2.7)	3.6 (2.5)	3.3 (2.8)	3.5 (2.9)
Comorbid conditions (≥ 25% for any regimen), n (%)[a]				
Hypertension	1312 (32)	139 (40)	539 (36)	66 (33)
Mental illness	1009 (25)	86 (25)	351 (23)	37 (18)
Substance use	989 (24)	65 (19)	320 (21)	52 (26)
Infections (including hepatitis B and AIDS-related)	1426 (35)	107 (31)	490 (33)	86 (43)

[a]Based on ICD-10 codes.
3TC, lamivudine; ABC, abacavir; B/F/TAF, bictegravir/emtricitabine/tenofovir alafenamide; DTG, dolutegravir; ICD-10, 10th revision of the International Classification of Diseases; PWH, people with HIV; IQR, interquartile range; MTR, multi-tablet regimen; SD, standard deviation.

Table 2. Baseline Characteristics for PWH with a Previous Gap in Treatment

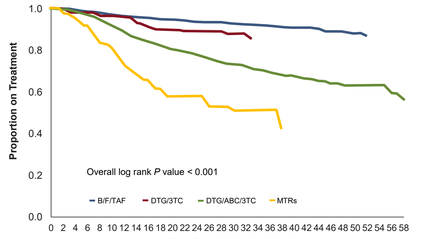
Demographic or Characteristic	B/F/TAF N = 6189	DTG/3TC N = 543	DTG/ABC/3TC N = 294	MTRs N = 201
Age, years, mean (range)	56.4 (22.7-91.7)	60.6 (27.5-88.0)	56.2 (27.8-84.2)	55.8 (26.5-87.9)
Male sex, n (%)	4366 (71)	365 (67)	205 (70)	128 (64)
Race/ethnicity, n (%)				
Non-Hispanic White	2551 (41)	269 (50)	105 (36)	71 (35)
Non-Hispanic Black	2997 (48)	217 (40)	155 (53)	105 (52)
Other	641 (10)	57 (10)	34 (12)	25 (12)
Residence in large metropolitan area, n (%)	5654 (91)	503 (93)	267 (91)	188 (94)
Medicare/Medicaid dual-eligible, n (%)	4090 (66)	312 (57)	211 (72)	151 (75)
Part D low-income subsidy, n (%)	4888 (79)	373 (69)	240 (82)	175 (87)
Charlson comorbidity index, mean (SD)	3.5 (2.8)	3.5 (2.7)	4.2 (2.9)	3.3 (2.9)
Comorbid conditions (≥ 25% for any regimen), n (%)[a]				
Hypertension	1997 (32)	207 (38)	130 (44)	79 (39)
Mental illness	1520 (25)	113 (21)	76 (26)	54 (27)
Substance use	1334 (22)	69 (13)	81 (28)	50 (25)
Infections (including hepatitis B and AIDS-related)	2120 (34)	153 (28)	115 (39)	65 (32)

[a]Based on ICD-10 codes.
3TC, lamivudine; ABC, abacavir; B/F/TAF, bictegravir/emtricitabine/ tenofovir alafenamide; DTG, dolutegravir; ICD-10, 10th revision of the International Classification of Diseases; PWH, people with HIV; IQR, interquartile range; MTR, multi-tablet regimen; SD, standard deviation.

Time to Switch and Adjusted Hazard of Switch

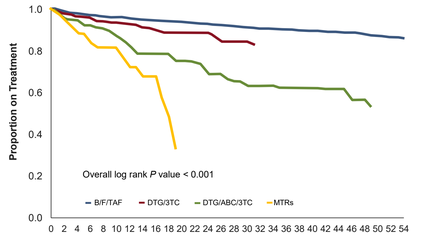
- In weighted Kaplan-Meier analyses, a significantly higher proportion of PWH indexed on B/F/TAF remained on treatment longer before switching compared with other regimens in both PWH with low adherence and PWH with a previous gap in treatment (both overall $P < 0.0001$; **Figures 2** and **3**)
- In the adjusted Cox proportional hazard models after IPTW, the adjusted risk of switch was higher for DTG/3TC, DTG/ABC/3TC, and MTRs compared with B/F/TAF for PWH with low adherence as well as those with a previous gap in treatment (all $P < 0.05$; **Table 3**)

Figure 2. Weighted Kaplan-Meier Curves for Time to Switch for PWH With Low Adherence



3TC, lamivudine; ABC, abacavir; B/F/TAF, bictegravir/emtricitabine/tenofovir alafenamide; DTG, dolutegravir; MTR, multi-tablet regimen

Figure 3. Weighted Kaplan-Meier Curves for Time to Switch for PWH with a Previous Gap in Treatment



3TC, lamivudine; ABC, abacavir; B/F/TAF, bictegravir/emtricitabine/ tenofovir alafenamide; DTG, dolutegravir; MTRs, multi-tablet regimen

Table 3. Adjusted Hazard of Switch Among Treatment-Experienced Medicare Beneficiaries With HIV

Cohorts	Regimens	Sample Size	HRs[a]	95% CI	*P* value
PWH with low adherence	**B/F/TAF**	4086	**Ref**		
	DTG/3TC	351	1.80	(1.19, 2.71)	0.005
	DTG/ABC/3TC	1501	3.44	(2.87, 4.13)	< 0.0001
	MTRs	202	8.01	(5.72, 11.22)	< 0.0001
PWH with a previous gap in treatment	**B/F/TAF**	6189	**Ref**		
	DTG/3TC	543	1.72	(1.27, 2.34)	0.0005
	DTG/ABC/3TC	294	4.18	(3.18, 5.51)	< 0.0001
	MTRs	201	5.98	(3.95, 9.06)	< 0.0001

[a]Adjusting for baseline hospitalization, ER visit, SNF admission, and total physician visits after IPTW.
3TC, lamivudine; ABC, abacavir; B/F/TAF, bictegravir/emtricitabine/tenofovir alafenamide; CI, confidence interval; DTG, dolutegravir; ER, emergency room; HR, hazard ratio; IPTW, inverse probability treatment weighting; MTR, multi-tablet regimen; PWH, people with HIV; SNF, skilled nursing facility.

References: **1.** Manalel JA, et al. *AIDS Res Ther.* 2024;21:68. **2.** Kaiser Family Foundation. Medicare and People with HIV. https://www.kff.org/hivaids/issue-brief/medicare-and-people-with-hiv/#xd_co_f=NGZlMjc0MjEtZmVjZi00Y2RmLTg3M2ItMzIzYWE4MjYxODkz~ (accessed Aug. 19, 2025). **3.** Wing EJ. *Int J Infect Dis.* 2016;53:61-8.

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Disclosures: **MJC**, **UM**, **TL**, and **NP** are employees of, and hold stocks/shares in, Gilead Sciences, Inc. **SL**, **HG**, **DG**, and **TC** are employees of the Chronic Disease Research Group.