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Persistence of antiretroviral therapy regimens among veterans with HIV newly initiating treatment in the US

Authors: S. Scott Sutton[1,2], Xingzhi Wang[3], Helena Diaz-Cuervo[4], Joseph Magagnoli [1,2]

[1]Dorn Research Institute, Columbia VA Health Care System, Columbia, South Carolina, USA;
[2]Department of Clinical Pharmacy & Outcomes Sciences, University of South Carolina, College of Pharmacy, Columbia, South California, USA
[3]Gilead Sciences Hong Kong Limited, Hong Kong SAR, China; [4]Gilead Sciences S.L., Madrid, Spain

Background

- Single-tablet regimens (STRs) have been associated with improved patient outcomes compared to multi-tablet regimens (MTRs)[1].
- With the advent of new antiretroviral therapy (ART) options, the extent to which ART regimen persistence varies between and within STRs and MTRs has not been fully defined.

Objective

- To assess persistence among treatment-naïve veterans with HIV infection newly initiating ART and measure risk of discontinuation for STRs vs. MTRs, and across different STRs and third agents.

Methods

- Veterans with HIV infection initiating regimens categorized in DHHS guidelines[2] as "recommended initial regimens for most people with HIV" and "recommended initial regimens in certain clinical situations" between January 1, 2016 and July 30, 2019 were included and observed until December 31, 2019.
- Index date was defined as the first ART claim date for STRs or the prescription fill claim date of the last drug in the regimen for MTRs.
- Persistence was measured as the percentage of patients remaining on the same initial regimen within 6 months and 1 year of index.
- Treatment discontinuation was recorded as a ≥90 day gap between prescription refills for the initial regimen.
- Adjusted Cox proportional hazards models were used to evaluate risk of discontinuation.

Results

Baseline Characteristics

- Over the study period, 2,591 treatment-naïve veterans with HIV initiated STRs and 728 initiated MTRs ART (**Table 1**).
- STR patients were younger (49.4 vs. 53.3 years, p<0.001) and with higher CD4 counts (>250 cells/μL: 38% vs. 30%, p<0.001) compared with MTR patients**.**
- Patients in both cohorts were predominantly male (94.9%)**.**
- STR patients had longer follow-up (535.9 vs. 393.1 days, p<0.001).
- STR patients were taking fewer drugs at index (4.9 vs. 7.4, p<0.001) and had a lower Charlson Comorbidity score (1.7 vs. 2.4, p<0.001).

Table 1: Baseline Characteristics of STR and MTR patients

Variable	STR N=2,591	MTR N=728	P value
Age Group, Mean (SD)	49.4 (13.3)	53.3 (12.2)	<0.001
18-34 years	478 (18.5%)	70 (9.6%)	
35-49 years	726 (28.0%)	168 (23.1%)	<0.001
50-64 years	1082 (41.8%)	376 (12.2%)	
>=65 years	305 (11.8%)	114 (15.6%)	
Gender (n, %)			
Male	2,460 (94.9%)	698 (95.9%)	0.347
Female	131 (5.1%)	30 (4.1%)	
Region (n, %)			
Continental	488 (18.8%)	185 (25.4%)	
Midwest	296 (11.4%)	74 (10.6%)	
North Atlantic	648 (25.0%)	164 (22.5%)	<0.001
Pacific	407 (15.7%)	156 (21.4%)	
Southeast	752 (29.0%)	149 (20.5%)	
Baseline Viral Load (n, %)			
>1000	656 (25.3%)	194 (26.7%)	
500-1000	63 (2.4%)	19 (2.6%)	0.88
0-500	1730 (66.8%)	477 (65.5%)	
Missing	142 (5.5%)	38 (5.2%)	
Baseline CD4 Counts (n, %)			
>250	983 (37.9%)	220 (30.2%)	
51-250	153 (5.9%)	54 (7.4%)	<0.001
0-50	36 (1.4%)	22 (3.0%)	
Missing	1,419 (54.8%)	432 (59.3%)	
Number of Drugs at Index Date, Mean (SD)	4.9 (4.0)	7.4 (4.6)	<0.001
Charlson Comorbidity Index, Mean (SD)	1.7 (2.3)	2.4 (2.8)	<0.001

Persistence Outcomes

- Unadjusted persistence at 6 and 12 months revealed the following (**Table 2**):
  - At 6 months, 85.5% of STR patients and 76.4% of MTR patients remained on their regimen;
  - At 12 months, 56.9% of STR patients and 40.8% of MTR patients remained on their regimen.

Results (cont'd)

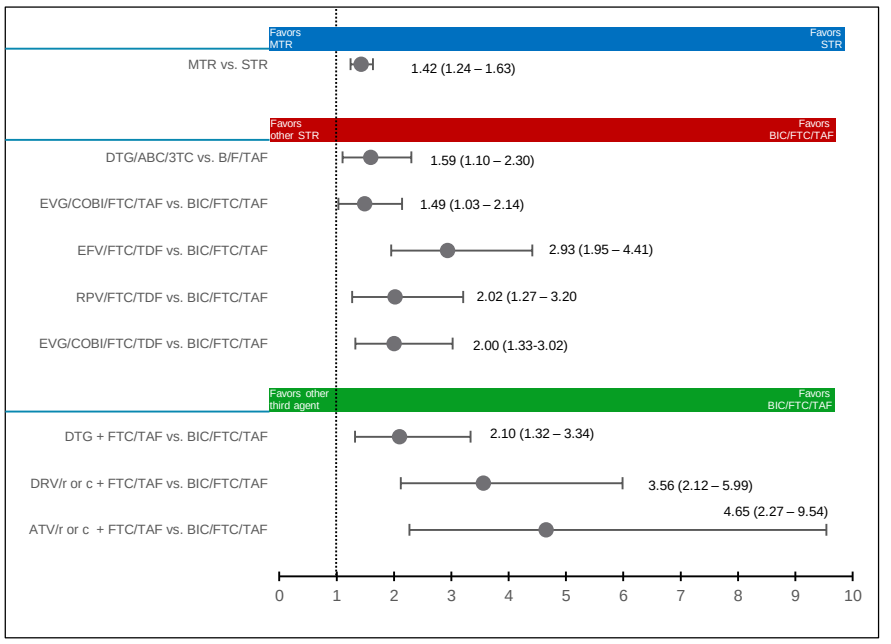
Table 2: Mean and Median Persistent Days by Regimen

Variable	N	Median (days)	Mean (days)	% persistent at 6 months	% persistent at 12 months*
STR overall	**2,591**	**321**	**421**	**85.5%**	**56.9%**
BIC/FTC/TAF	304	239	251	90.1%	73.0%
DTG/ABC/3TC	794	434	507	88.5%	70.6%
EVG/COBI/FTC/TAF	760	410	469	89.3%	68.7%
RPV/FTC/TAF	143	408	427	81.8%	63.9%
EVG/COBI/FTC/TDF	251	232	338	77.3%	44.2%
RPV/FTC/TDF	116	233	370	75.0%	51.8%
EFV/FTC/TDF	223	182	294	72.6%	41.9%
MTR overall	**728**	**197**	**293**	**76.4%**	**40.8%**
DTG + FTC/TAF	284	310	363	83.1%	56.8%
DRV/r or DRV/c + FTC/TAF	89	190	291	77.5%	46.4%
ATV/r or ATV/c + FTC/TAF	20	244	226	75.0%	57.9%
DTG + FTC/TDF	138	191	291	79.0%	32.4%
DRV/r or DRV/c + FTC/TDF	121	152	226	70.2%	31.1%
ATV/r or ATV/c + FTC/TDF	53	122	156	56.6%	15.1%
DRV/r or DRV/c + ABC/3TC	23	121	169	52.2%	13.0%

* Patients with 12 month persistence of those who had a start date 1 year prior to study end (December 31, 2019)

- After adjusting for sociodemographic and clinical characteristics (**Figure 1**):
  - Risk of discontinuation of the first-line therapy was lower for STRs compared to MTRs (HR: 0.70, 95% CI: 0.61-0.81).
  - In comparison with BIC/FTC/TAF (all p<0.001), risk of discontinuation was
    - 1.49 times higher for EVG/COBI/FTC/TAF
    - 1.59 times higher for DTG/ABC/3TC
    - 2.10 times higher for DTG + FTC/TAF

Figure 1: Adjusted* Hazard Ratio for Treatment Discontinuation



* Hazard ratio and 95% confidence interval adjusted for age group, gender, geographic region, number of unique drugs filled on index date, baseline viral load, CD4 counts and CCI score

Conclusions

- Among US veterans with HIV, STR initiators were significantly less likely to discontinue first-line therapy compared to MTR initiators.
- Veterans who initiated a BIC/FTC/TAF regimen had a lower risk of discontinuation compared to MTRs and other STRs included in the study.

References

1. Altice F, Evuarherhe O, Shina S, et al. Adherence to HIV treatment regimens: systematic literature review and meta-analysis. Patient Prefer Adherence. 2019;13:475-490.
2. Department of Health and Human Services. What is HIV/AIDS? https://www.aids.gov/hiv-aids-basics/hiv-aids-101/what-is-hiv-aids/. Accessed Sep 17, 2020.

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