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A Prescription Pattern of HIV First-Line Tenofovir Alafenamide-Based Single-Tablet Regimens: A Multi-Institutional Study in Taiwan

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OBJECTIVES

In Taiwan, single-tablet regimens (STRs) have been implemented for first-line or more forHIV treatment. Previous evidence suggests that tenofovir alafenamide (TAF) is associated with less renal and bone toxicity. Additionally, rilpivirine (RPV) was associated with psychiatric disorders. However, the impact of bictegravir (BIC) on weight gain remains unclear. This study was aimed to analyze prescribing pattern of two TAF-based STRs using real-world data, including TAF/emtricitabine(FTC)/RPV and TAF/FTC/BIC.

METHODS

This was a retrospective cohort study using a multi-institutional electronic medical records database. From October 2019 to April 2023, HIV patients newly receiving TAF/FTC/RPV or TAF/FTC/BIC were included. Baseline characteristics and biochemical data, including age, line of highly active antiretroviral therapy (HAART) treatment, and comorbidity (e.g., psychotic disease), HIV-RNA viral load and CD_4, were assessed.

RESULTS

Table 1. Baseline characteristics

	TAF/FTC/BIC (n = 1403)	TAF/FTC/RPV (n = 408)	P-value
Sex (male)	92.3% (1295)	92.7% (378)	
Age	39.6 (12.0)	41.5 (11.5)	<0.01
Line of Treatment	1.6 (2.0)	2.0 (1.7)	<0.01
Naïve (%)	45.7% (641)	18.3% (75)	<0.01
HIV RNA viral load			<0.01
Undetected	34.1% (478)	67.9% (277)	
Detected	22.8% (320)	11.0% (45)	
Missing	43.1% (605)	21.1% (86)	
CD4	452.2 (295.3)	571.6 (262.1)	<0.01
ALT	37.5 (56.1)	41.5 (37.3)	
Creatinine	0.9 (0.6)	0.9 (0.2)	
HbA1c	5.8 (1.1)	6.0 (1.4)	0.36
LDL	114.1 (55.7)	106.8 (49.2)	0.08
Total cholesterol	178.5 (42.4)	164.7 (33.5)	<0.01
Triglyceride	164.6 (129.4)	131.9 (90.3)	<0.01
Diabetes mellitus	5.2% (73)	5.1% (21)	0.96
Hypertension	13.6% (191)	20.8% (85)	<0.01
Hyperlipid	8.2% (115)	11.5% (47)	<0.05

CONCLUSIONS

Patients with higher CD_4 counts and unmeasurable HIV-RNA viral load tend to prefer TAF/FTC/RPV. Moreover, TAF/FTC/RPV is more prone to developing drug resistance, resulting in fewer antiretroviral-naïve users. These findings align with previous evidence. Surprisingly, we expected patients with comorbidity of psychiatric disorders to choose TAF/FTC/BIC; however, the analysis yielded no significant difference. As for a history of hyperlipidemia, our results indicate a higher likelihood of using TAF/FTC/RPV.