GILEAD | Medical Information

Descovy® (FTC/TAF) Use for HIV-1 Post-Exposure Prophylaxis

This document is in response to your request for information regarding the use of Descovy® (emtricitabine/tenofovir alafenamide [FTC/TAF]) for HIV-1 post-exposure prophylaxis (PEP).

Some data may be outside of the US FDA-approved prescribing information. In providing this data, Gilead Sciences, Inc. is not making any representation as to its clinical relevance or to the use of any Gilead product(s). For information about the approved conditions of use of any Gilead drug product, please consult the FDA-approved prescribing information.

The use of FTC/TAF for HIV-1 PEP is investigational and has not been approved by any regulatory authority. The full indication, important safety information, and boxed warnings are available at: www.gilead.com/-/media/files/pdfs/medicines/hiv/descovy/descovy_pi.

Summary

Clinical Data on FTC/TAF for HIV-1 PEP

In a randomized controlled study that evaluated ex vivo PEP activity, HIV-1 p24 antigen concentrations were significantly reduced after foreskin explants were dosed with FTC/TAF or FTC/TFV at 1, 24, 48, and 72 hours following ex vivo HIV-1_{BaL} exposure at high and low titers (all, $P \leq 0.001$).[1] At the high titer, FTC/TFV was more effective at 1-hour dosing after exposure, whereas FTC/TAF was more effective at all other dosing time points.[1,2]

Clinical Data on FTC/TAF in Combination With Other Agents For HIV-1 PEP

In a prospective cohort study that compared completion rates, adherence, effectiveness, and safety between BIC/FTC/TAF (n=92) and DTG + FTC/TDF (n=87), all participants were HIV negative through the Week 12 follow-up.[3]

- The PEP completion and adherence rates were significantly higher in the BIC/FTC/TAF group than in the DTG + FTC/TDF group (completion rate, 97.8% vs. 86.2%; P=0.009; adherence rate, 99.6% vs. 90.2%; P=0.003).
- ADRs occurred in 15.2% of the BIC/FTC/TAF group and 10.3% of the DTG + FTC/TDF group (P=0.33); all reactions were classified as Grade 1 or 2.

A retrospective observational study compared completion, adherence, and seroconversion rates and safety of EVG/COBI/FTC/TAF (n=171) and DOR/3TC/TDF (n=140) for PEP.[4]

- PEP completion rates were similar between the EVG/COBI/FTC/TAF and DOR/3TC/TDF groups (94.6% vs. 96.8%; P=0.53). Adherence rates among those who completed PEP were 93.4% for the EVG/COBI/FTC/TAF group and 89.8% for the DOR/3TC/TDF group. No seroconversion was detected in either treatment group.
- In the EVG/COBI/FTC/TAF group, 29.7% experienced AEs, compared to 38.3% in the DOR/3TC/TDF group (P=0.11), with digestive AEs being the most common.

A randomized controlled trial evaluated the tolerability and adherence to 28 days of BIC/FTC/TAF as HIV PEP with text message support vs standard of care (N=119).[5]

- A total of 90/102 participants (88%) with available data completed ≥28 days of PEP. No HIV seroconversions occurred among the 66 participants tested at Week 12.
- AEs associated with BIC/FTC/TAF were mostly mild, and the most common AEs included fatigue (20%), nausea (12%), diarrhea (8%), and headache (8%).

Clinical Data on FTC/TAF For HIV-1 PEP

CHAPS Study: Ex Vivo FTC/TAF or FTC/TFV

Study design[1]

An open-label, randomized controlled study evaluated the efficacy of FTC/TAF or FTC/TDF for ex vivo PrEP activity, as well as FTC/TFV or FTC/TAF for ex vivo PEP activity. HIV-negative males aged 13 to 24 years, who weighed >35 kg, and were eligible for VMMC were enrolled in sub-Saharan Africa. Participants were randomly assigned to either the control group or one of eight treatment groups that received PrEP (FTC/TAF or FTC/TDF) before VMMC. The main outcome was the concentration of HIV-1 p24 in the foreskin explants, measured up to 15 days after the ex vivo HIV-1_{BaL} challenge, which involved exposure to HIV-1_{BaL} at a high titer (typical ex vivo challenge titer used, 10^4 $TCID_{50}$/mL) or a low titer (biologically relevant titer, 2×10^2 $TCID_{50}$/mL). The concentration of HIV-1 p24 on Day 15 was assessed as a secondary outcome for PEP using additional foreskin explants from the control group (n=16). These explants were treated with FTC/TAF or FTC/TFV for 2 hours at 1, 24, 48, or 72 hours after the HIV-1_{BaL} challenge.

Results for PEP

The p24 concentration significantly decreased in samples treated with FTC/TAF or FTC/TFV at all time points following ex vivo HIV-1_{BaL} exposure with high and low titers (all, $P\leq0.001$).[1] The effect of ex vivo PEP was observed to decrease with later dosing (≥48 hours), particularly with the 72-hour post-exposure dosing (Table 1). At the high titer, FTC/TFV was more effective than FTC/TAF at 1-hour dosing after exposure, whereas FTC/TAF was more effective at all other dosing time points (Table 2).[1,2]

Table 1. CHAPS Study: Effect of Ex Vivo PEP Dosing on p24 at Day 15 (n=16)[1,2]

Time of Dosing After HIV-1_{BaL} Exposure	GMR (95% CI) for p24 After High Titer Challenge		GMR (95% CI) for p24 After Low Titer Challenge	
	FTC/TAF	FTC/TFV	FTC/TAF	FTC/TFV
1 hour	0.06 (0.04–0.09)	0.07 (0.05–0.11)	0.03 (0.01–0.09)	0.04 (0.01–0.13)
24 hours	0.06 (0.04–0.09)	0.08 (0.06–0.11)	0.05 (0.02–0.1)	0.05 (0.02–0.12)
48 hours	0.17 (0.11–0.26)	0.24 (0.17–0.34)	0.11 (0.03–0.34)	0.27 (0.13–0.55)
72 hours	0.39 (0.32–0.48)	0.5 (0.41–0.62)	0.41 (0.29–0.58)	0.62 (0.49–0.77)

Note: $P\leq0.001$ for all; *P*-values compared the GMR (95% CI) between the control group samples with and without PEP.

Table 2. CHAPS Study: Ex Vivo PEP With FTC/TAF vs FTC/TFV on p24 at Day 15 (n=16)[1,2]

Time of Dosing After HIV-1_{BaL} Exposure	p24 After High Titer Challenge			p24 After Low Titer Challenge		
	FTC/TAF, GM (95% CI), pg/mL	FTC/TFV, GM (95% CI), pg/mL	GMR (95% CI)	FTC/TAF, GM (95% CI), pg/mL	FTC/TFV, GM (95% CI), pg/mL	GMR (95% CI)
1 hour	32 (20–51)	27 (41–62)	1.29[a] (1.06–1.57)	1.1 (0.3–4.5)	1.8 (0.6–5.9)	0.64 (0.34–1.21)
24 hours	35 (24–49)	45 (33–62)	0.77[a] (0.59–1)	2.1 (0.9–4.9)	2.1 (0.7–5.7)	1 (0.66–1.53)
48 hours	96 (64–143)	136 (96–191)	0.7[a] (0.56–0.89)	4.8 (1.2–18.9)	11.8 (4.7–30.1)	0.4[a] (0.17–0.97)
72 hours	219 (179–269)	282 (235–338)	0.78[a] (0.69–0.87)	18.1 (9.9–33.2)	27.5 (17.5–43)	0.66[a] (0.47–0.92)

Abbreviation: GM=geometric mean.
[a]$P \leq 0.05$ for comparison between two treatment groups.
Note: The GMs (95% CI) for control group samples without PEP at high and low titers were 560 (454-690) pg/mL and 45 (30-67) pg/mL, respectively.

Clinical Data on FTC/TAF in Combination With Other Antiretrovirals for HIV-1 PEP

Chinese Prospective Cohort Study of BIC/FTC/TAF[3]

Study design and demographics

A single-center, open-label, prospective cohort study was conducted in China to compare completion rates, adherence, effectiveness, and safety between BIC/FTC/TAF and DTG + FTC/TDF for PEP. Participants selected treatments based on their preference (BIC/FTC/TAF, n=92; DTG + FTC/TDF, n=87). Eligible participants were males and females who were aged >18 years, HIV negative, and exposed to HIV within 72 hours. The primary endpoint was PEP completion rate over 28 days, and secondary endpoints were rates of adherence and HIV infection at Weeks 4 and 12.

Table 3. Baseline Demographics and Disease Characteristics (Gan et al)[3]

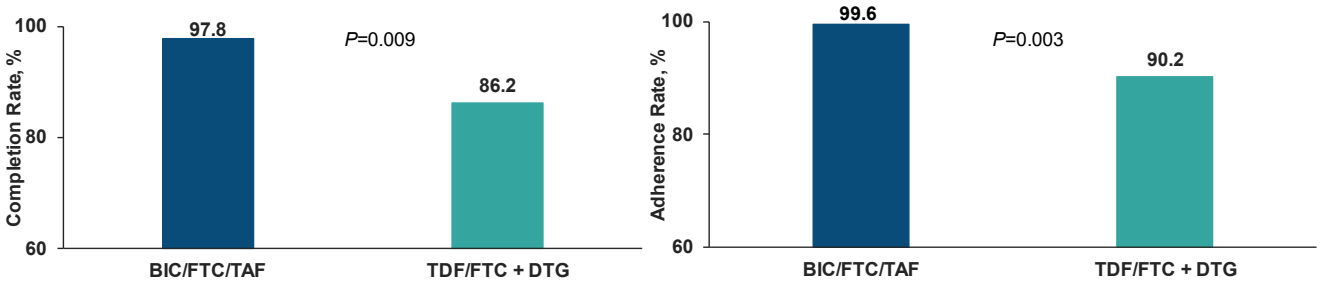
Key Demographics and Characteristics		BIC/FTC/TAF (n=92)	DTG + FTC/TDF (n=87)
Age, median (IQR), years[a]		27.5 (25–34)	31 (26–37)
Male, n (%)		80 (86.9)	78 (89.7)
Mode of exposure, n (%)	Vaginal intercourse	71 (77.2)	66 (75.9)
	Anal sex	17 (18.5)	18 (20.7)
	Oral sex	4 (4.3)	3 (3.4)
Median exposure time, n (%)	<24 hours	58 (63)	59 (67.8)
	24–47.9 hours	26 (28.3)	14 (16.1)
	48–72 hours	8 (8.7)	14 (16.1)
Previous PEP, n (%)		4 (4.3)	2 (2.3)

[a]P=0.042.

Effectiveness, completion, and adherence rates

All participants were HIV negative through follow-up. The PEP completion rate and drug adherence rate were significantly higher in the BIC/FTC/TAF group than in the DTG + FTC/TDF group (*P*=0.009 and *P*=0.003, respectively; Figure 1). The PEP regimen was the only factor associated with not completing PEP, as identified by a multivariable logistic regression model (adjusted odds ratio for DTG + FTC/TDF vs. BIC/FTC/TAF, 7.02, 95% CI: 1.82–46.29; *P*<0.05).

Figure 1. PEP Completion Rate and Adherence Rate (Gan et al)[3]



Safety

ADRs were reported in 15.2% of the BIC/FTC/TAF group and 10.3% of the DTG + FTC/TDF group (*P*=0.33), and all were Grade 1 or 2 (Table 4).

Table 4. Summary of Safety Results (Gan et al)[3]

Grade 1–2 ADRs, n (%)	BIC/FTC/TAF (n=92)	DTG + FTC/TDF (n=87)
Any ADR	14 (15.2)	9 (10.3)
Dyslipidemia	5 (5.4)	3 (3.4)
Blood uric acid increased	2 (2.2)	3 (3.4)
Elevated serum creatinine	2 (2.2)	1 (1.1)
Hepatic function abnormal	2 (2.2)	1 (1.1)
Bilirubin elevation	1 (1.1)	1 (1.1)
Platelet reduction	1 (1.1)	0
Pyrexia	1 (1.1)	0
Dizziness	0	1 (1.1)[a]

[a]Discontinued PEP due to drug-related ADR.

Retrospective Observational Study of EVG/COBI/FTC/TAF[4]

Study design and demographics

A single-center, retrospective, observational study was conducted to compare completion, adherence, and seroconversion rates and safety between EVG/COBI/FTC/TAF (n=171) and DOR/3TC/TDF (n=140) for PEP. Eligible patients were prescribed EVG/COBI/FTC/TAF (150 mg/150 mg/200 mg/10 mg) in 2020 or DOR/3TC/TDF (100 mg/300 mg/245 mg) in 2021 for PEP. The study included both males and females aged >18 years who were HIV negative and had sexual exposure to HIV. The primary outcome was self-reported PEP adherence over 28 days. Other outcomes included seroconversion rates, incidence of AEs, and quality of life affected by AEs.

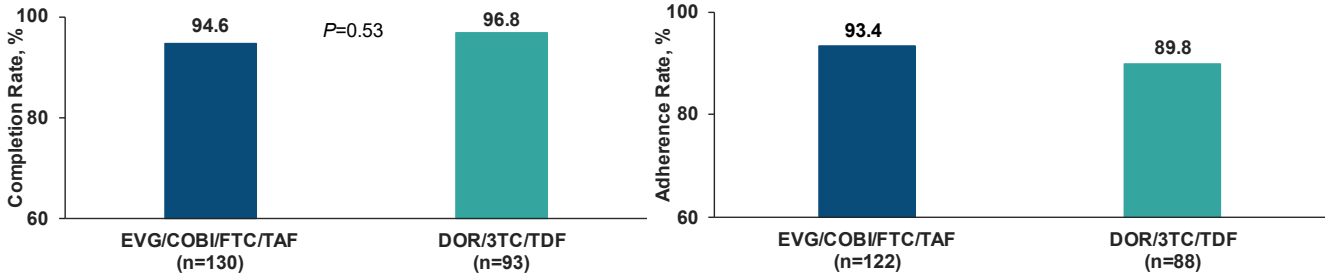
Table 5. Baseline Demographics and Disease Characteristics (Devred et al)[4]

Key Demographics and Characteristics		EVG/COBI/FTC/TAF (n=171)	DOR/3TC/TDF (n=140)	*P*-Value
Age, median (range), years		30 (18–75)	29 (18–70)	0.8
Male, n (%)		150 (87.7)	115 (82.1)	0.17
Previous HIV non-occupational exposure, n (%)		64 (37.4)	31 (22.1)	0.03
Men who have sex with men, n (%)		110 (74.3)	91 (81.3)	0.23
Mode of exposure, n (%)	Receptive or insertive vaginal	53 (31.4)	39 (28.7)	–
	Insertive/receptive anal sex	32 (18.9)/70 (41.4)	43 (31.6)/47 (34.6)	
	Insertive/receptive oral sex	3 (1.8)/7 (4.1)	0/6 (4.3)	
	Others	4 (2.4)	1 (0.7)	

Completion, adherence, and seroconversion rates

A total of 130 patients in the EVG/COBI/FTC/TAF group and 93 in the DOR/3TC/TDF group who had a follow-up clinic visit or telephone call were included in the PP analysis. PEP completion rates were similar between the EVG/COBI/FTC/TAF group and the DOR/3TC/TDF group in the PP analysis (94.6% vs. 96.8%; *P*=0.53). Self-reported adherence rates to the daily treatment schedule among those who completed PEP were 93.4% for the EVG/COBI/FTC/TAF group and 89.8% for the DOR/3TC/TDF group (Figure 2). Reasons for not completing PEP included poor tolerance (EVG/COBI/FTC/TAF, n=5; DOR/3TC/TDF, n=1) and misunderstanding its purpose (EVG/COBI/FTC/TAF, n=2; DOR/3TC/TDF, n=2). Among the 191 patients (61.4%) who had a follow-up serological test, no seroconversion was detected in either treatment group.

Figure 2. PEP Completion Rate and Adherence Rate (Devred et al)[4]



Note: Adherence rates for both groups were based on the patients who completed PEP.

Safety

AEs were reported in 29.7% of the EVG/COBI/FTC/TAF group and 38.3% of the DOR/3TC/TDF group (*P*=0.11), with digestive AEs (nausea, vomiting, and diarrhea) being the most common (Table 6). The impact on daily life was reported as “significant discomfort” in 4% (5/128) of the EVG/COBI/FTC/TAF group and 3.4% (3/94) of the DOR/3TC/TDF group and “major discomfort” in 0.8% (1/128) of the EVG/COBI/FTC/TAF group and none of the DOR/3TC/TDF group.

Table 6. Summary of Safety Results (Devred et al)[4]

Safety Outcomes, n (%)		EVG/COBI/FTC/TAF (n=128)	DOR/3TC/TDF (n=94)
≥1 AEs[a]		38 (29.7)	36 (38)
Clinical AEs in ≥5% in either group	Nausea or vomiting	14 (10.1)	13 (13.8)
	Diarrhea	8 (6.2)	8 (8.5)
	Fatigue, discomfort	2 (1.6)	5 (5.3)
Discontinued due to poor tolerance[b]		5 (3.9)	1 (1.1)

[a]*P*=0.11. [b]*P*=0.4.

Randomized Controlled Trial of BIC/FTC/TAF as HIV PEP[5]

Study design and demographics

A randomized controlled trial evaluated the tolerability and adherence to BIC/FTC/TAF as HIV PEP with text message support vs standard of care without text message support. Key inclusion criteria were HIV-negative individuals aged ≥18 years who had initiated PEP within the past 6 days for sexual exposure and were able/willing to receive texts via mobile phone. Participants received a standard PEP regimen for a median of 2 days of before being switched to BIC/FTC/TAF for a total of ≥28 days of PEP. HIV status was assessed at baseline, Week 6, and Week 12. Additional outcomes included adherence, assessed via telephone call at Week 4, and AEs, assessed at Week 4 and Week 13 follow-up visits.
A total of 120 participants enrolled in the trial; 1 participant was HIV seropositive at baseline and was not included in the analysis. Baseline demographics are listed in Table 7.

Table 7. Select Baseline Demographics and Characteristics (Tan et al)[5]

Key Demographics and Characteristics		BIC/FTC/TAF (N=119)
Age, median (Q1, Q3), years		29.3 (25.8–34.4)
Sexual orientation and gender, n (%)	MSM	97 (81)
	Heterosexual men	16 (13)
	Heterosexual women	7 (6)
Type of condomless exposure,[a] n (%)	Anal insertive	40 (34)
	Anal receptive with ejaculation	36 (30)
	Anal receptive without ejaculation	21 (18)
	Vaginal insertive	15 (13)
	Vaginal receptive with ejaculation	4 (3)
	Vaginal receptive without ejaculation	3 (3)
Previously used PEP regimens, n (%)	0	91 (77)
	1	24 (20)
	2	4 (3)
Initially prescribed PEP regimen, n (%)	DTG + TDF/FTC	106 (89)
	BIC/FTC/TAF	11 (9)
	RAL + TDF/FTC	2 (2)
Time from exposure to PEP initiation, median (Q1, Q3), hours		23 (13, 39)

Abbreviations: MSM=men who have sex with men; Q=quartile; RAL=raltegravir.
[a]Report included the highest-risk type of sexual exposure.

Results

A total of 90 of the 102 participants (88%) with available data reported completing ≥28 days of PEP. No HIV seroconversions occurred among the 66 participants (55%) who were tested at Week 12. By the final visit, 28 participants (23%) had initiated PrEP. AEs associated with

the study drug were mostly mild, and the most common AEs included fatigue (20%), nausea (12%), diarrhea (8%), and headache (8%). Only 10% of participants experienced AEs of Grade ≥2 severity, which included diarrhea (3%) and fatigue (2%).

References

1. Herrera C, Serwanga J, Else L, et al. Dose finding study for on-demand HIV pre-exposure prophylaxis for insertive sex in sub-Saharan Africa: results from the CHAPS open label randomised controlled trial. *EBioMedicine.* 2023;93:104648.
2. Herrera C, Serwanga J, Else L, et al. Dose finding study for on-demand HIV pre-exposure prophylaxis for insertive sex in sub-Saharan Africa: results from the CHAPS open label randomised controlled trial [Supplement]. *EBioMedicine.* 2023;93:104648.
3. Gan L, Xie X, Fu Y, et al. Safety and adherence of bictegravir/emtricitabine/tenofovir alafenamide for HIV post-exposure prophylaxis among adults in Guiyang China: a prospective cohort study. *BMC Infect Dis.* 2024;24(1):565.
4. Devred I, Kayembe K, Valin N, et al. Prophylaxis by doravirine-lamivudine-tenofovir disoproxil fumarate or elvitegravir-cobicistat-emtricitabine-tenofovir alafenamide after sexual exposure to HIV. *BMC Infect Dis.* 2023;23(1):578.
5. Tan DHS, Persaud R, Qamar A, et al. BIC/FTC/TAF as HIV PEP Was Well-Tolerated With High Adherence and No Seroconversions. [Poster 1134]. Paper presented at: Conference on Retroviruses and Opportunistic Infections (CROI); March 3-6, 2024; Denver, Colorado.

Abbreviations

3TC=lamivudine
ADR=adverse drug reaction
AE=adverse event
BIC=bictegravir
CHAPS=Combined HIV Adolescent Prevention Study
COBI=cobicistat
DOR=doravirine
DTG=dolutegravir
EVG=elvitegravir
FTC=emtricitabine
GMR=geometric mean ratio
PEP=post-exposure prophylaxis
PP=per-protocol
PrEP=pre-exposure prophylaxis
TAF=tenofovir alafenamide fumarate
$TCID_{50}$=median tissue culture infective dose
TDF=tenofovir disoproxil fumarate
TFV=tenofovir
VMMC=voluntary medical male circumcision

Product Label

For the full indication, important safety information, and boxed warning(s), please refer to the Descovy US Prescribing Information available at: www.gilead.com/-/media/files/pdfs/medicines/hiv/descovy/descovy_pi.

Follow-Up

For any additional questions, please contact Gilead Medical Information at:

☎1-866-MEDI-GSI (1-866-633-4474) or 🖱 www.askgileadmedical.com

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FDA MedWatch Program by ☎ 1-800-FDA-1088 or ✉MedWatch, FDA, 5600 Fishers Ln, Rockville, MD 20852 or 🖱 www.accessdata.fda.gov/scripts/medwatch

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