No Significant Interactions From Hormone Therapy on F/TAF-Based PrEP in Trans Women: iFACT3 Study

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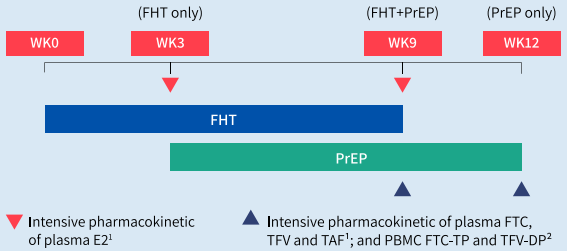
BACKGROUND

- We previously observed comparable plasma and urine levels of tenofovir (TFV) and emtricitabine (FTC), as well as intracellular tenofovir-diphosphate (TFV-DP) and emtricitabine-triphosphate (FTC-TP) concentrations in peripheral blood mononuclear cells (PBMCs), when F/TAF-based oral daily PrEP was administered with and without feminizing hormone therapy (FHT) in trans women in Thailand.
- We assessed the potential impact of FHT on antiretroviral drug concentrations in the rectal compartment of trans women receiving oral daily F/TAF-based PrEP.

METHODS

- iFACT3 was a pharmacokinetic and safety study assessing the potential drug-drug interactions between FHT and oral daily F/TAF-based PrEP among trans women Thailand.
- Twenty trans women who had not undergone orchiectomy and had not received injectable FHT within 3 months were enrolled between January and February 2022.
- Oral FHT (estradiol valerate 2 mg and cyproterone acetate 25 mg) was prescribed to participants at baseline until week 9, while oral daily PrEP (FTC 200 mg/TAF 25 mg) was initiated at week 3 until week 12.
- Intensive PK sampling was performed at week 3 (FHT without PrEP) and 9 (FHT with PrEP) for estradiol; and weeks 9 (PrEP with FHT) and 12 (PrEP without FHT) for PrEP drug parameters (**Figure 1**). Plasma, urine, and PBMCs samples were collected from all participants; and rectal tissue samples in subset.

FIGURE 1 iFACT study scheme



[1] Plasma will be collected at t=0 (pre-dose), 0.5, 1, 2, 4, 6, 8, 10, 12, and 24 hours after directly observed medication ingestion with a standardized meal (a total of 10 samples)

[2] PBMC will be collected at t=2 and 24 hours after directly observed medication ingestion with a standardized meal (a total of 2 samples)

Intracellular TFV-DP and FTC-TP concentrations in rectal tissue were comparable when F/TAF-based PrEP was administered with and without FHT

RESULTS

- Ten participants who underwent rectal tissue sampling were included in this analysis.
- Median age and body mass index were 28.5 (IQR: 24-32) years and 21.2 (IQR: 19.9-21.9) kg/m^2, respectively.
- Median TFV-DP and FTC-TP concentrations in rectal tissue between weeks 9 and 12 were not statistically significant (TFV-DP, 37.6 [IQR: 21.4-45.8] vs 27.4 [IQR: 21.4-56.3] fmol/mg, p=0.72; and FTC-TP, 14.5 [12.4-17.0] vs 11.6 [8.0-14.5] fmol/mg, p=0.20) (**Figure 2**).
- All participants had quantifiable TFV-DP and FTC-TP concentrations at both visits.

CONCLUSIONS

- Intracellular TFV-DP and FTC-TP concentrations in rectal tissue were comparable when F/TAF-based PrEP was administered with and without FHT.
- These findings align with our previously data in the plasma, urine, and PBMCs compartments, indicating no clinically significant drug-drug interactions from FHT towards F/TAF-based oral daily PrEP are anticipated.

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FIGURE 2 Median TFV-DP and FTC-TP concentrations at week 9 (PrEP with FHT) and week 12 (PrEP without FHT) in rectal tissue

