Drug-drug interactions between the use of feminizing hormone therapy and pre-exposure prophylaxis among transgender women: the iFACT study

Background

• Concerns about potential drug-drug interactions (DDI) between feminizing hormone therapy (FHT) and pre-exposure prophylaxis (PrEP) have hampered uptake and adherence of PrEP among transgender women.1-3

• To determine DDI between FHT and PrEP, we measured pharmacokinetic parameters of blood plasma tenofovir (TFV), estradiol (E2), and testosterone.

Methods

Background

• The median (IQR) age, BMI, and CrCl were 27.5 (21-36) years, 20.6 (19.0-22.2) kg/m², and 116 (101-126.5) mL/min, respectively.

• The geometric mean (%CV) of area under curve from time zero to 24 hr (AUC0-24), maximum concentration (Cmax), and concentration at 24 hr (C24) of E2 at weeks 3 and 5 were 775.13 (26.2) pg*h/mL, 51.47 (26.9) pg/mL, and 15.15 (42.0) pg/mL, respectively (Figure 2 and Table 1).

• The geometric mean (%CV) of TFV AUC0-24, Cmax, and C24 at weeks 5 and 8 were 2.28 (26.2) mg*h/L, 0.36 (34.8) mg/L, and 0.04 (28.8) mg/L, respectively, and 2.63 (29.6), 0.32 (23.3), and 0.05 (28.0), respectively (Figure 3 and Table 2).

• There were no significant changes in E2 pharmacokinetic parameters and median (IQR) trough of bioavailable testosterone between week 3 and 5.

Results

• Twenty TGW who never underwent orchiectomy and had not received injectable therapy (FHT) and pre-exposure prophylaxis (PrEP) have hampered uptake and adherence of PrEP among transgender women.1-3

• Our study demonstrated lower plasma TFV exposure in the presence of FHT, suggesting that FHT may potentially affect TFV effects apply to the active metabolite tenofovir diphosphate (TFV-DP), and emtricitabine tri phosphate (FTC-TP), in the target tissue.

• Further studies are warranted to determine whether these reductions in TFV are clinically significant and whether these effects apply to the active metabolite tenofovir diphosphate (TFV-DP) and emtricitabine tri phosphate (FTC-TP), in the target tissue.

Conclusions

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