1962. Renal Outcomes for Participants Taking F/TAF vs. F/TDF for HIV PreP in the DISCOVER Trial

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Background. In the DISCOVER PreP trial, emtricitabine/tenofovir alafenamide (F/TAF) was noninferior to emtricitabine/tenofovir disoproxil fumarate (F/TDF) for HIV prevention. Here, we report on the renal outcomes of F/TAF vs. F/TDF among all DISCOVER participants and in those on baseline F/TDF PreP who were randomized to F/TAF.

Methods. In total, 5387 men who have sex with men (MSM) and transgender women (TGW) at risk for HIV were randomized 1:1 to receive blinded F/TDF or F/TAF. Renal function and safety assessments included urinalysis (UA), estimated glomerular filtration rate (eGFR), β2-microglobulin:creatinine (β2M:Cr), and retinol-binding protein:creatinine ratio (RBP:Cr) and investigator-reported renal adverse events (AEs). Week 48 data are presented.

Results. In the full cohort, F/TAF was associated with more favorable changes in eGFR(creatinine), β2M:Cr, and RBP:Cr compared with F/TDF (Table 1). Treatment-emergent proteinuria by UA was more common with F/TDF than F/TAF (24.3% vs. 21.3%, P = 0.009), as were treatment-emergent elevations in UPCR >200 mg/g (35 [1.5%] vs. 16 [0.7%], P = 0.005). Compared with UA, estimated glomerular filtration rate (eGFR), β2M:Cr, and RBP:Cr ratios were apparent as early as week 4 (Table 1 and Figure 1), and tubular function biomarkers. F/TAF for PreP is effective and has a superior renal safety profile compared with F/TDF.

Conclusion. Through 48 weeks, MSM and TGW taking F/TAF for PreP had significantly better measures of renal function and fewer study-drug-related renal AEs compared with those taking F/TDF, switching from F/TDF to F/TAF was associated with improvements in eGFRcreatinine and tubular function biomarkers. F/TAF for PreP is effective and has a superior renal safety profile compared with F/TDF.

Table 1. Renal biomarker changes at week 48 compared to baseline.

| Event | F/TAF | F/TDF | p value |
|-------|-------|-------|---------|
| eGFR median change (mL/min) | 4737 | 1.8 (7.2, 11.3) | -2.3 (8.0, 7.2) | <0.001 |
| β2M:Cr median % change (mL/min) | 6688 | -10.7 (-23.2, 5.9) | 13.6 (25.9, -1.9) | <0.001 |
| RBP:Cr median % change (mL/min) | 4716 | 0.2 (24.9, 35.4) | 19.9 (31.6, 8.2) | <0.001 |

Table 2. Renal adverse events at week 48.

| Event | Number of participants [%] | F/TAF | F/TDF | p value |
|-------|-----------------------------|-------|-------|---------|
| Any renal AE | 14 (0.5%) | 26 (1.0%) | <0.001 |
| Grade 3 | 6 (0.2%) | 3 (0.1%) | <0.001 |
| Grade 4 | 0 | 2 (0.1%) | <0.001 |

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