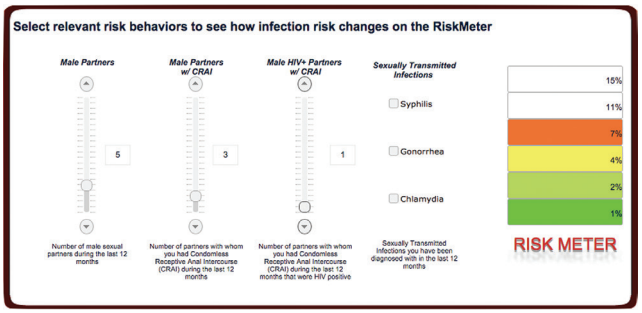

Disclosures. **All Authors:** No reported Disclosures.

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 and 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 taken once daily (full cohort). Of these, 905 were on F/TDF PrEP at enrollment; of whom, 465 were randomized to F/TAF. Renal function and safety assessments included urinalysis (UA), estimated glomerular filtration rate ($eGFR_{CG}$), urine protein:creatinine (Cr) ratio (UPCR), markers of proximal tubular function (β2-microglobulin:Cr ratio [β2M:Cr] and retinol-binding protein:Cr 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 $eGFR_{CG}$, 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 F/TDF, participants taking F/TAF had numerically fewer study drug-related renal AEs, severe study drug-related renal AEs, and discontinuations due to renal AEs (Table 2). Proximal renal tubulopathy (Fanconi syndrome) was reported in one participant in the F/TDF arm and none in the F/TAF arm. In participants on F/TDF PrEP at enrollment who were randomized to F/TAF, statistically significant increases in $eGFR_{CG}$ were apparent as early as week 4 (Table 1 and Figure 1), as were decreases in tubular proteinuria (Table 1). Renal biomarker changes in PrEP-naïve participants mirrored those in the full cohort.

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 $eGFR_{CG}$ 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.

Full Cohort	N	F/TAF	F/TDF	p value
eGFR median change (Q1,Q3)	4737	1.8 (-7.2,11.1)	-2.3 (-10.8,7.2)	<0.001
β2M:Cr median % change (Q1,Q3)	4685	-10.7 (-42,25.9)	15.3 (-23,97.2)	<0.001
RBP:Cr median % change (Q1,Q3)	4716	0.2 (-24.9,35.4)	19.9 (-13,68.2)	<0.001
Baseline F/TDF→F/TAF				
eGFR median change (Q1,Q3)	833	3.9 (-4.9, 13.0)	-0.6 (-9.4, 8.5)	<0.001
β2M:Cr median % change (Q1,Q3)	823	-27.1 (-60.8, 10.8)	-5.1 (-39.6, 81.6)	<0.001
RBP:Cr median % change (Q1,Q3)	829	-8.6 (-36.4, 17.3)	11.3 (-23.2, 54.2)	<0.001

Table 2. Renal adverse events at week 48.

Event	Number of participants (%) F/TAF	F/TDF
Study drug-related renal AE		
Any	14 (0.5%)	26 (1.0%)
Grade 3	2 (<0.1%)	3 (0.1%)
Grade 4	0	0
Renal AE leading to discontinuation	2 (<0.1%)*	6 (0.2%)†
Proximal tubulopathy	0	1 (<0.1%)‡

* Acute kidney injury (2)
† Acute kidney injury (2), renal impairment (2), Fanconi syndrome, proteinuria, renal cyst
‡ Fanconi syndrome

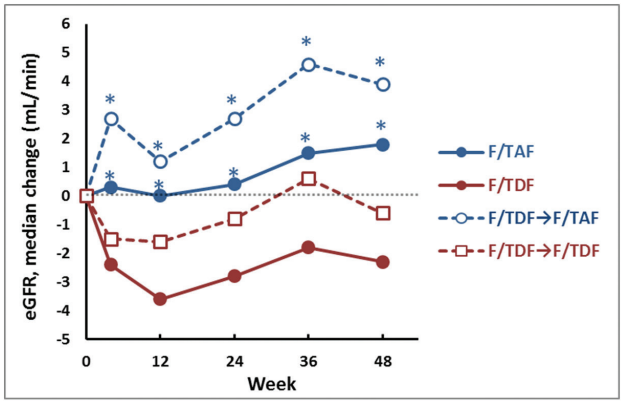

Figure 1. Longitudinal change in $eGFR_{CG}$ in the full cohort (solid markers) and in the baseline PrEP cohort (open markers) through Week 48. Asterisks indicate p<0.01 compared to the corresponding F/TDF group (T/TAF vs F/TDF, and F/TDF→F/TAF switch vs. F/TDF→F/TDF).

Disclosures. **All Authors:** No reported Disclosures.

1963. PrEP Significantly Reduces the Rate of New HIV Diagnoses in US Metropolitan Statistical Areas Independent of Treatment as Prevention (2012–2017)

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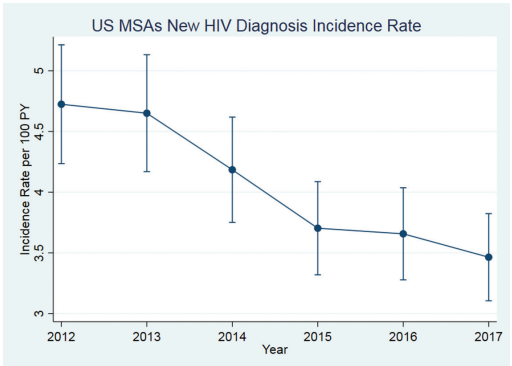
Background. Tenofovir/Emtricitabine (TVD) was approved for a Pre-exposure Prophylaxis (PrEP) indication in the United States in July 2012. Biomedical HIV prevention tools can impact the rate of new HIV diagnoses but their relative contributions have not been described.

Methods. The analysis utilized CDC published data on HIV diagnoses in 105 US metropolitan statistical areas (MSAs), a Treatment as Prevention (TasP) proxy of HIV suppressed individuals from 38 US states and DC, and a national pharmacy and medical claims databases to track TVD PrEP use from 2012 to 2017. The calculation of person time at risk excluded time of those taking PrEP as well as those who became HIV positive. TVD PrEP use was categorized in quintiles. A multilevel Poisson regression model which considers changes over time of each MSA was utilized. Rates and rate ratios plus corresponding 95% confidence intervals were obtained for quintiles of PrEP utilization after adjusting for the effect of treatment as prevention and calendar time.

Results. The US MSA rate of HIV diagnoses decreased significantly at a rate of 5.1% (95% CI −4.8 to −5.3%) per year in the period 2012–2017. PrEP use increased from an average of 1.64+1.3 per 100 subjects with a PrEP indication in 2012 to 15.4 + 3.2 in 2017. HIV viral suppression also increased by 1.3% per year (95% CI 1.1 to 1.6%) during the same period among HIV treated subjects. A multivariate model showed that PrEP use was significantly associated with the decline in the rate of new HIV cases, independent of a significant TasP effect. During the period of observation, the lowest quintile of PrEP utilization saw a decline of −0.23% (95% CI −0.2 to −0.43%), while the highest quintile of PrEP utilization showed a statistically significant decline of −4.24% (95% CI −0.39 to −8.01%) per year. Treatment as prevention had a significant and independent effect of- 1.56% (−1.1 to −2.1%) per each percent increase of the proportion of HIV subjects with suppression.

Conclusion. From 2012 to 2017, HIV diagnoses declined most steeply in MSAs where PrEP use was the highest. The effect of PrEP use was significantly associated with this decline and was independent of treatment as prevention.



Disclosures. **All Authors:** No reported Disclosures.