Methods Treatment naïve HIV-1+ adults were randomised 1:1 to a single tablet regimen of E/C/F/TAF or E/C/F/TDF once daily in two double blind studies. Assessments for all subjects included measures of glomerular and proximal renal tubular function, and bone mineral density (BMD). Four pre-specified secondary safety endpoints were tested: serum creatinine, treatment-emergent proteinuria, spine and hip BMD. Week 48 off-target side effects data are described.

Results 1,733 subjects were randomised and treated. Plasma TFV was >90% lower (mean AUC$_{tau}$ 297 vs. 3,410 ng·hr/mL) in the E/C/F/TAF arm, compared to the E/C/F/TDF arm. Serum creatinine (mean change: +0.08 vs +0.11 mg/dL, p < 0.001), quantified proteinuria (UPCR, median % change; -3 vs +20, p < 0.001), and fractional excretion of phosphate (median % change; +0.9 vs +1.7), all favoured E/C/F/TAF. There were no cases of proximal tubulopathy in either arm. Mean% decrease in BMD was significantly less in the E/C/F/TAF arm for both lumbar spine (~1.30 vs ~2.86, p < 0.001) and total hip (~0.66 vs ~2.95, p < 0.001).

Conclusions Through 48 weeks, subjects receiving E/C/F/TAF had significantly better outcomes related to renal and bone health than those treated with E/C/F/TDF. These data demonstrate important safety benefits of TAF relative to TDF, especially given the ageing of the HIV population and the need for long-term treatment.

P100 TENOFOVIR ALAFENAMIDE (TAF) IN A SINGLE TABLET REGIMEN IN INITIAL HIV-1 THERAPY

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Background Tenofovir alafenamide (TAF) is a novel tenofovir produg that, when administered in the single tablet regimen E/C/F/TAF, has >90% lower plasma TFV levels compared to tenofovir disoproxil fumarate (TDF).

Methods Treatment naïve HIV-1+ adults were randomised 1:1 to receive a regimen of E/C/F/TAF or E/C/F/TDF in two Phase 3 double blind studies. Primary endpoint was Week 48 virologic response by FDA Snapshot algorithm in a pre-specified combined analysis.

Results 1,733 subjects were randomised and treated: 15% women, 43% non-White, 23% viral load ≥100,000 copies/mL. The primary objective was met, E/C/F/TAF was non-inferior to E/C/F/TDF with 92% and 90%, respectively having HIV RNA <50 copies/mL at week 48 (difference +2%, 95% CI -0.7% to +4.7%, p = 0.13). Virologic failure with resistance occurred in 0.8% in the E/C/F/TAF arm and 0.6% on E/C/F/TDF. Treatment related SAFs were rare: E/C/F/TAF 0.3% (n = 3), E/C/F/TDF 0.2% (n = 2). There were no reports of proximal renal tubulopathy in either arm. No single AE led to discontinuation of more than 1 subject on E/C/F/TAF. Grade 2, to 4 AEs occurring in ≥2% were: diarrhea (3.3% vs. 2.5%), nausea (2.2% vs. 2.0%), headache (2.9% vs. 2.1%), and URI (3.6% vs. 3.1%) in the E/C/F/TAF vs. E/C/F/TDF arms.

Conclusions Through 48 weeks of treatment, high virologic response rates were seen in patients receiving E/C/F/TAF or E/C/F/TDF. Both regimens were well tolerated, and no unique AEs associated with TAF occurred. These data support the use of E/C/F/TAF, as a potential regimen for initial treatment of patients with HIV-1 infection.