Switching From a Tenofovir Disoproxil Fumarate (TDF)-Based Regimen to a Tenofovir Alafenamide (TAF)-Based Regimen: Data in Virologically Suppressed Adults Through 48 Weeks of Treatment

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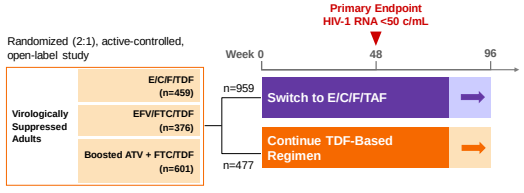
- Dr. Smith has received funding from, acted as an advisor for and/or participated in clinical research for: Gilead Sciences, Merck Sharpe & Dohme and ViiV Healthcare.

Switch to E/C/F/TAF in Virologically Suppressed Adults



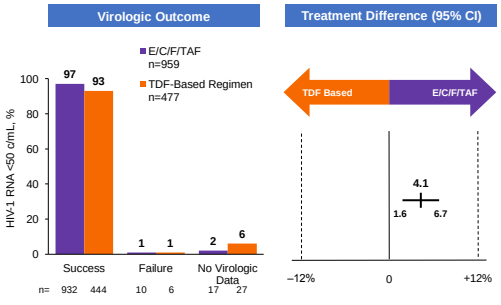
- All patients
  - HIV-1 RNA <50 copies/mL for ≥96 weeks on stable TDF-based regimen
  - Estimated GFR >50 mL/min
- E/C/F/TAF = EVG 150 mg, COBI 150 mg, FTC 200 mg, TAF 10 mg
- E/C/F/TDF = EVG 150 mg, COBI 150 mg, FTC 200 mg, TDF 300 mg

Baseline Characteristics

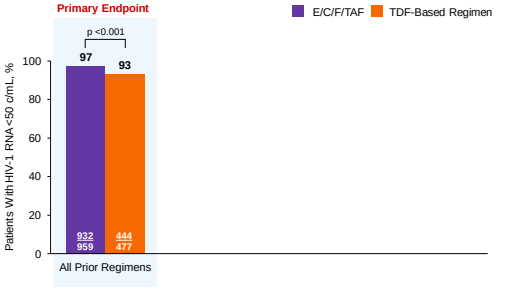
	E/C/F/TAF n=959	TDF-Based Regimen n=477
Median age, years	41	40
Female, %	11	11
Race, %		
White	68	66
Black or African descent	18	21
Hispanic/Latino ethnicity	26	17
Median CD4 count, cells/mm^3	675	662
Patients with <200 cells/mm^3, %	0.5	0.8
Median estimated GFR, mL/min*	106	108
Dipstick proteinuria, %		
Grade 1	8.5	9.2
Grade 2	0.4	0.6

*Cockcroft-Gault.

HIV-1 RNA <50 Copies/mL at Week 48



Virologic Outcome, Prior Treatment Regimens



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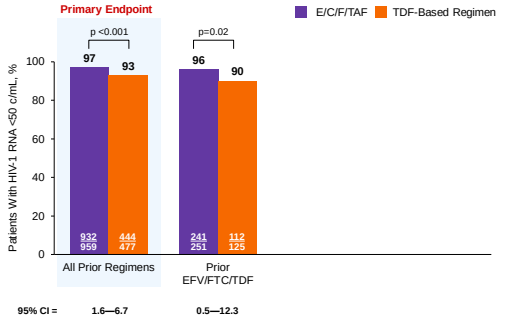

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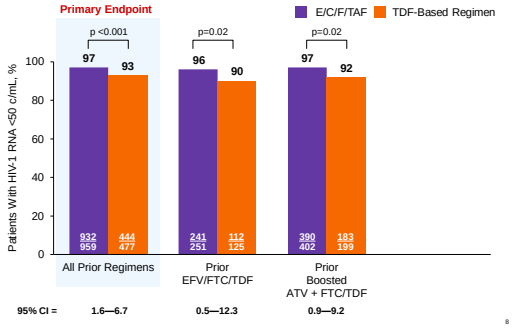

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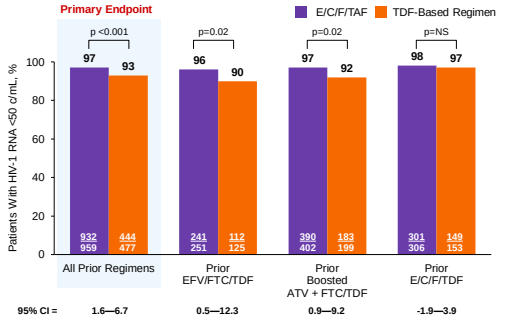

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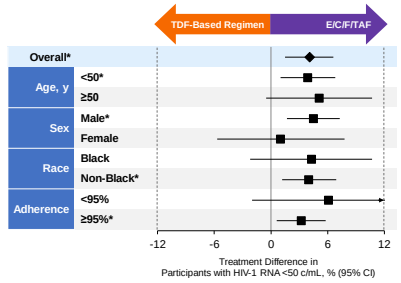
Virologic Outcome, Differences by Subgroup



*Statistically significant difference favoring E/C/F/TAF treatment

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Grade 2–4 Lab Abnormalities

Patients, %	E/C/F/TAF n=959	TDF-Based Regimen n=477
Any abnormality	25	31
Creatine kinase	10	10
AST	5	7
ALT	5	5
Neutropenia	4	3
Phosphate (↓)	2	3
Uric acid (↑)	2	1
Alkaline phosphatase	<1	<1
Leukopenia	<1	<1
Platelets	<1	<1
Total bilirubin	<1	24
Hemoglobin	0	<1
Creatinine	0	<1

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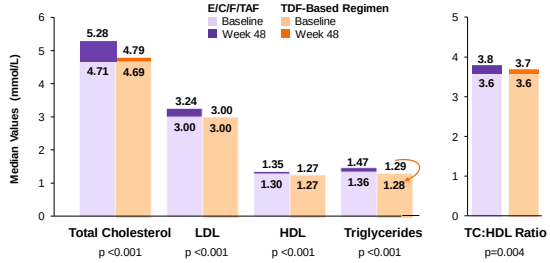
Fasting Lipid Results

- Participants initiating lipid-modifying medications: E/C/F/TAF: 7.9%; TDF-based regimen: 5.9%.



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Adverse Events >5% (All Grades)

Participants, %	E/C/F/TAF n=959	TDF-Based Regimen n=477
Upper respiratory tract infection	16	11
Diarrhea	10	9
Nasopharyngitis	9	8
Headache	7	4
Cough	7	5
Arthralgia	6	5
Bronchitis	6	5
Osteopenia	6	5
Syphilis	5	6
Insomnia	5	6
Sinusitis	5	5
Back pain	5	5
Nausea	5	3
Depression	4	6

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AEs Leading to Discontinuation

	E/C/F/TAF n=959	TDF-Based Regimen n=477
Participants, %	0.9	2.5
Renal Events	• Acute renal failure† • Interstitial nephritis‡	• Chronic kidney disease • Elevated serum creatinine • Fanconi syndrome, mild jaundice • Increased creatinine • Nephretic colic (nephrolithiasis)
All Other Events	• Depression • Leg swelling, impaired concentration • Memory loss, speech disturbance, lack of motivation • Nausea, vomiting, headache • Panic attack • Reiter syndrome • Suicide attempt	• Abnormal dreams • Depression, insomnia, irritability • Depression, insomnia, nightmares • Elevated bilirubin • Icterus (n=2) • Increased forgetfulness

†After cancer chemotherapy, participant hospitalized with neutropenia, sepsis, and multi-system organ failure
‡Recurrent hematuria on treatment, subsequent off-treatment diagnosis of Hodgkin's Lymphoma

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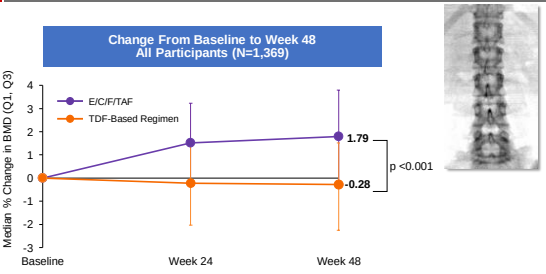
DXA Scan Results: Spine BMD



- Regardless of prior treatment regimen, differences between arms were statistically significant
- More than 2% difference between the arms at Week 48

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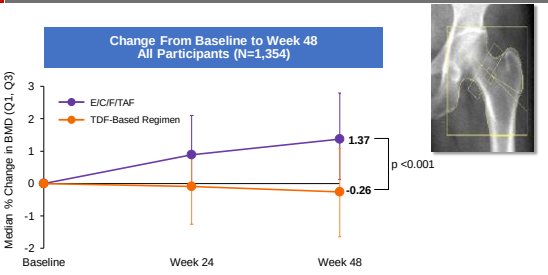
DXA Scan Results: Hip BMD



- Regardless of prior treatment regimen, differences between arms were statistically significant
- More than 1.6% difference between arms at Week 48

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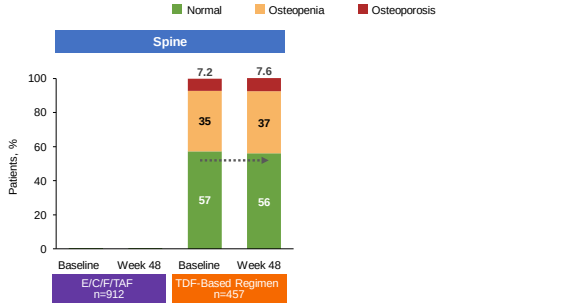
Change in Osteopenia/Osteoporosis Diagnosis (Defined by T-Score)



Differences between E/C/F/TAF and TDF-based regimens were statistically significant (p <0.001)

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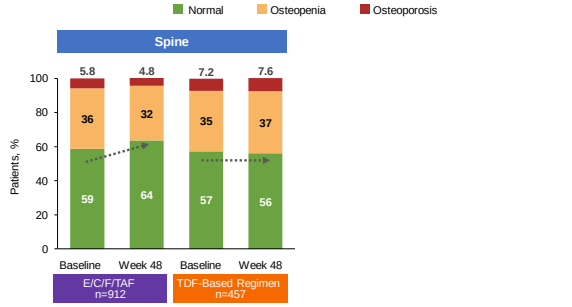

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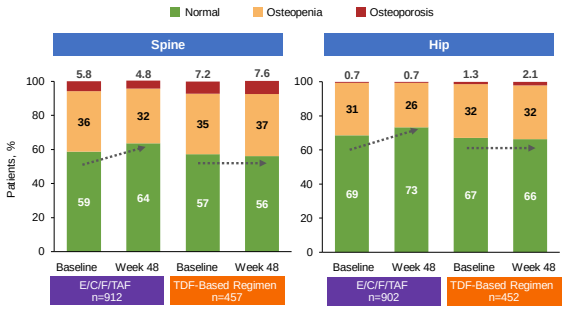

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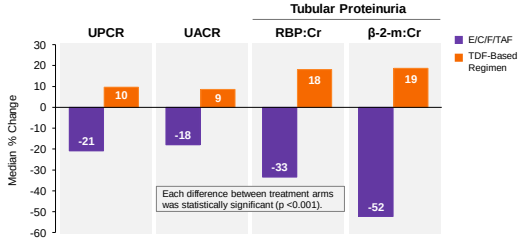
Renal Safety Results



- Statistically significant improvements for participants who switched from either E/C/F/TDF or from boosted ATV + FTC/TDF
  - Serum creatinine (p <0.001); eGFR (p <0.001)
  - Fractional excretion of phosphate, FEPO4 (p=0.05); fractional excretion of uric acid, FEUA (p <0.001)
- Changes began by Week 2 and persisted to Week 48

UPCR: urine protein: creatinine ratio; UACR: urine albumin: creatinine ratio; RBP, retinol-binding protein; β-2-m:Cr , beta-2 microglobulin.

Week 48 Conclusions

- Study GS-292-0109 is the largest randomized switch study conducted in HIV-positive virologically suppressed adults
- Participants who switched to E/C/F/TAF were significantly more likely to maintain virologic success
  - Had significant improvements in spine and hip BMD
  - Had significant reductions in osteopenia/osteoporosis
  - Had significant improvements in proteinuria and in other markers of renal function

Acknowledgments

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