

TAF-FTC versus TDF-FTC PrEP for MSM and TGW
DISCOVER Trial

TAF-FTC versus TDF-FTC HIV PrEP for MSM and TGW

DISCOVER: Study Design

- **Background:** Phase 3, multinational, double-blind, active-controlled trial assess safety and efficacy of tenofovir alafenamide-emtricitabine (TAF-FTC) versus tenofovir DF-emtricitabine (TDF-FTC) for HIV PrEP
- **Inclusion Criteria**
 - Enrolled high-risk* cisgender MSM and transgender women (TGW)
 - Prior TDF-FTC HIV PrEP allowed
 - No history of HIV or HBV
 - eGFR \geq 60 mL/min
- **Treatment Arms** (5,387 enrolled)
 - Daily dosing for TAF-FTC
 - Daily dosing for TDF-FTC
 - Provided counseling and condoms at entry and every 3 months
- **Primary Endpoint**
 - 100% incident HIV infection after 48 weeks
 - 50% incident HIV infection after 96 weeks

**Tenofovir alafenamide-
Emtricitabine (TAF-FTC)**

(n = 2,694)

**Tenofovir DF-Emtricitabine
(TDF-FTC)**

(n = 2,693)

*Based on self-reported sexual activity (in the past 12 weeks) or recent history (within 24 weeks of enrollment) of bacterial STIs

Source: Mayer KH, et al. Lancet 2020;396:239-54.

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DISCOVER: Baseline Demographics & Risk Factors

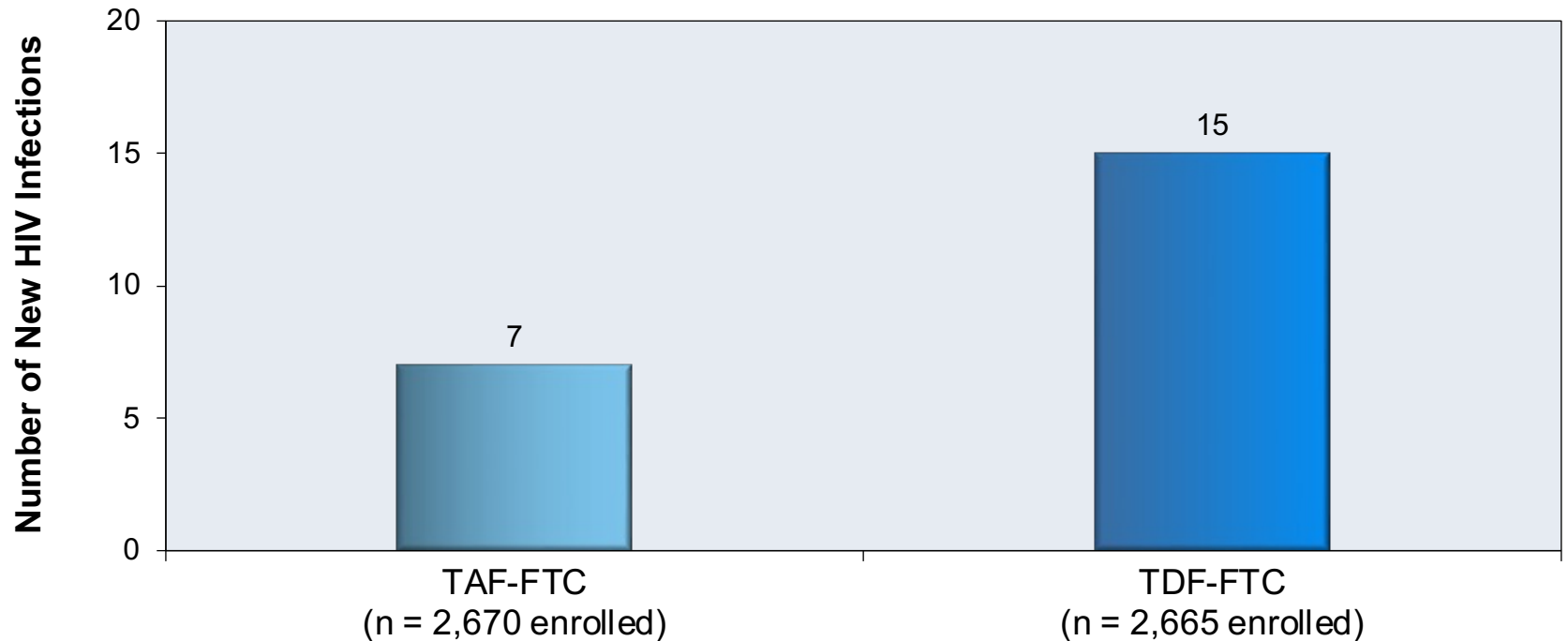
	TAF-FTC (n = 2,694)	TDF-FTC (n = 2,693)
Demographics		
Median age, years	34 (28-43)	34 (28-44)
White	2,264 (84%)	2,247 (84%)
Black	240 (9%)	234 (9%)
Transgender Woman	45 (2%)	29 (1%)
Self-reported HIV risk factors (%)		
≥2 episodes condomless RAI in past 12 weeks	1,616/2,602 (62%)	1,569/2,597 (60%)
Rectal gonorrhea in past 24 weeks	274 (10%)	262 (10%)
Rectal chlamydia in past 24 weeks	343 (13%)	333 (12%)
Syphilis in past 24 weeks	230 (9%)	263 (10%)
Recreational drug use in past 12 weeks	1,785/2,680 (67%)	1,786/2,677 (67%)
TDF-FTC for PrEP at baseline	465 (17%)	440 (16%)

Abbreviations: TDF-FTC = tenofovir DF-emtricitabine; TAF-FTC = tenofovir alafenamide-emtricitabine; RAI = receptive anal intercourse

TAF-FTC versus TDF-FTC for HIV PrEP in MSM and TGW

DISCOVER: Results

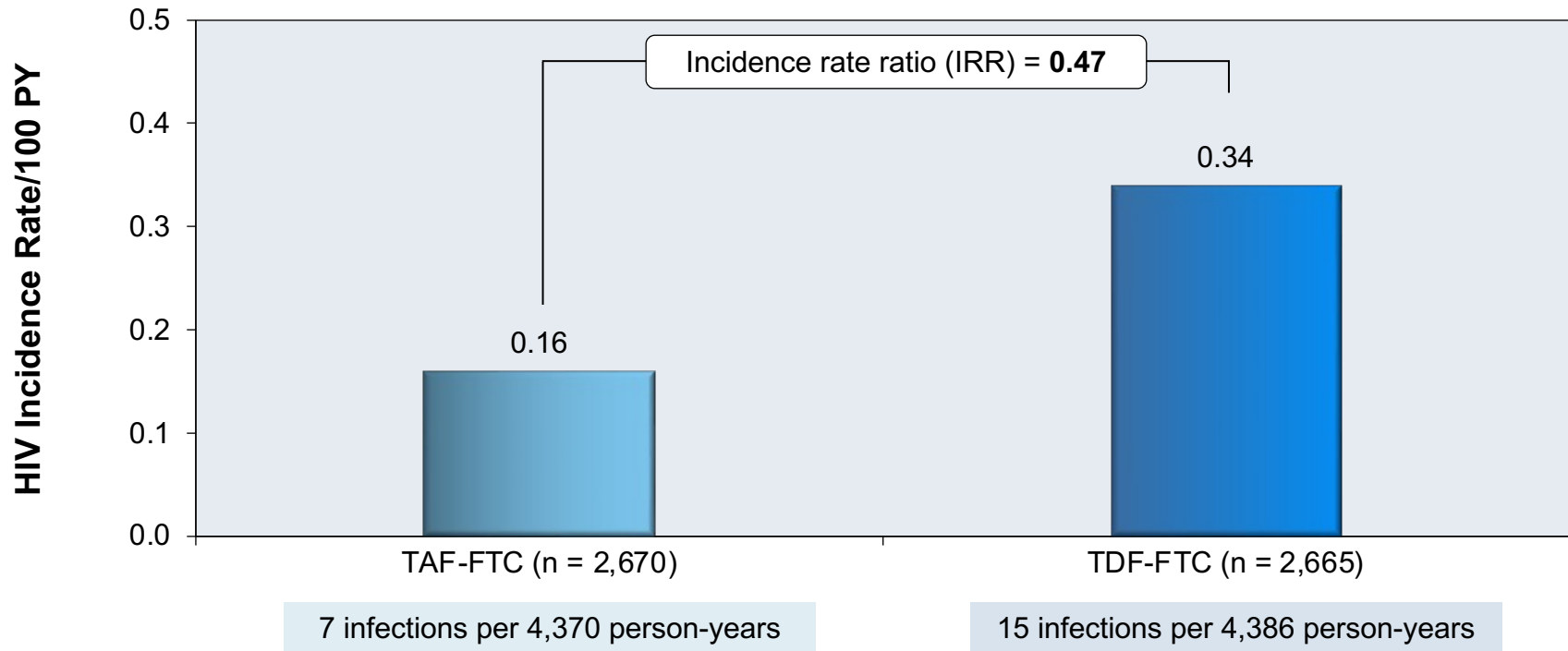
HIV Seroconversions at Primary Analysis



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DISCOVER: Results

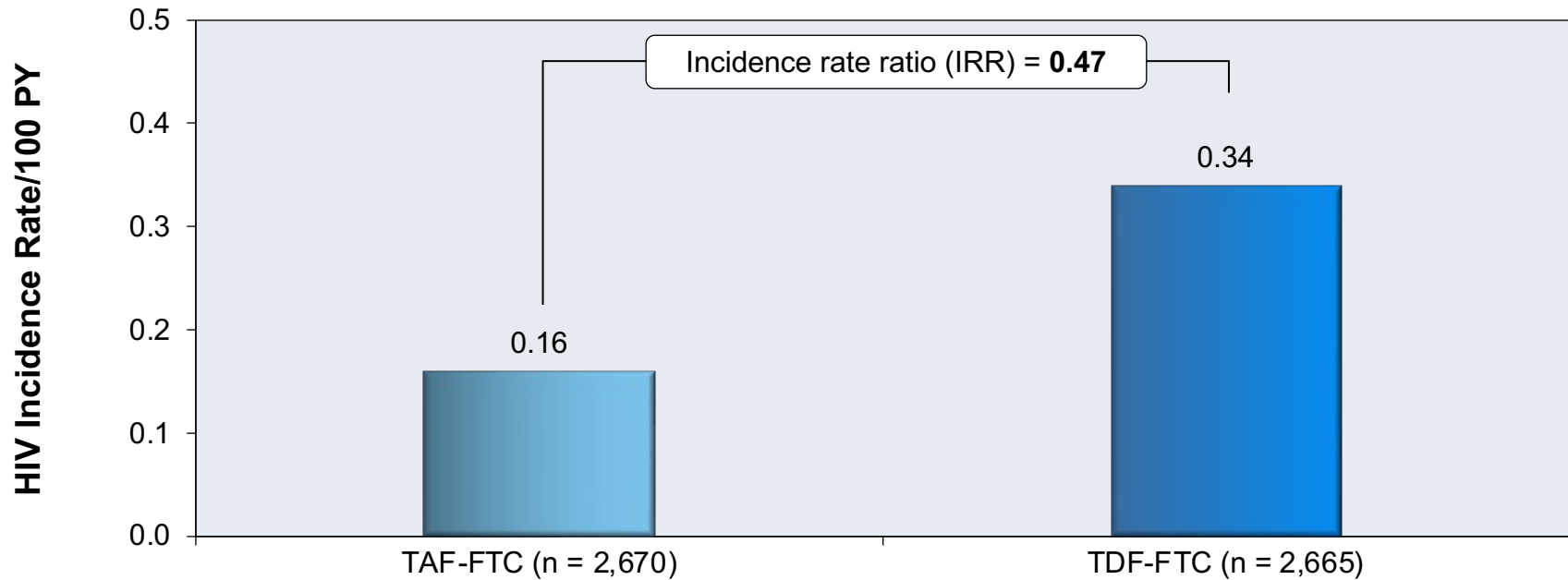
Primary Endpoint Result: HIV Incidence Rate



TAF-FTC versus TDF-FTC for HIV PrEP in MSM and TGW

DISCOVER: Results

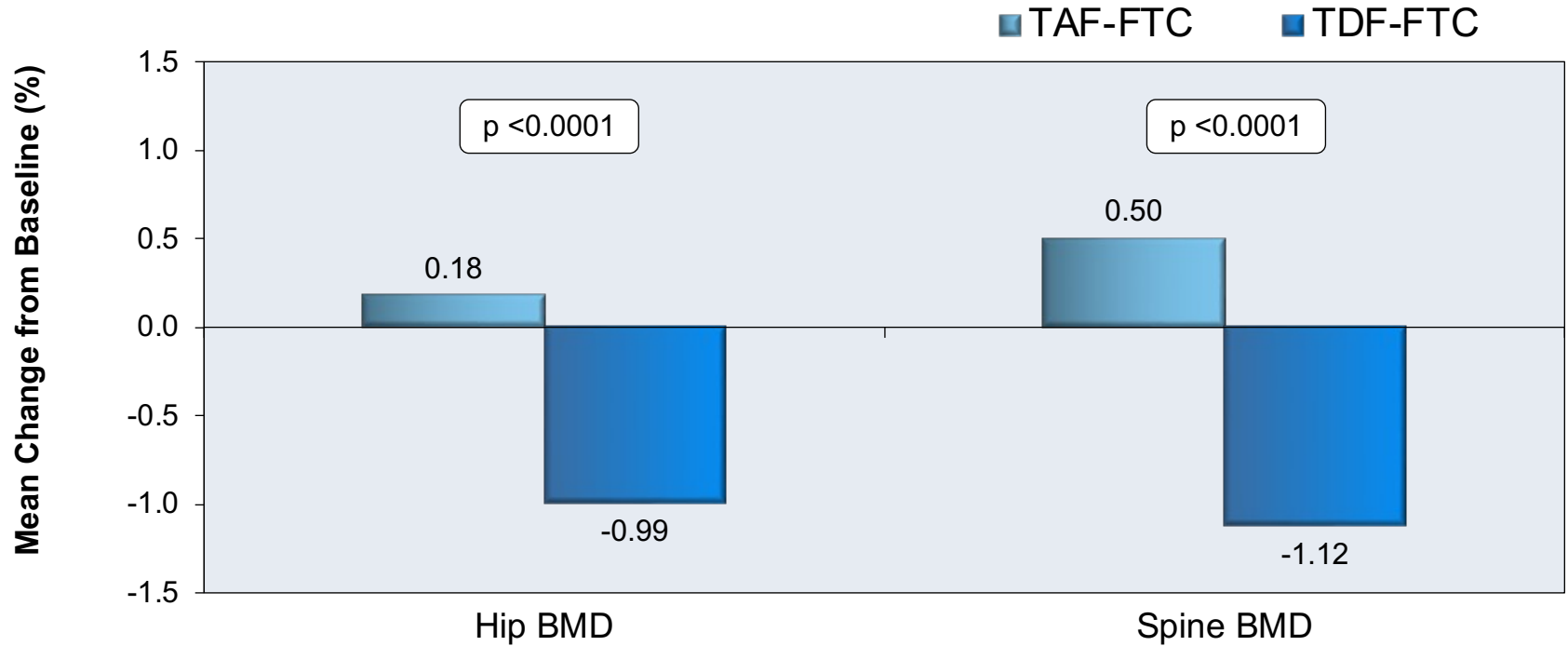
Primary Endpoint Result: HIV Incidence Rate



NOTE: Excluding baseline HIV infections (1 TAF-FTC, 4 TDF-FTC) the IRR was 0.55; there was 1 new infection in each arm that occurred in persons who had adequate drug levels

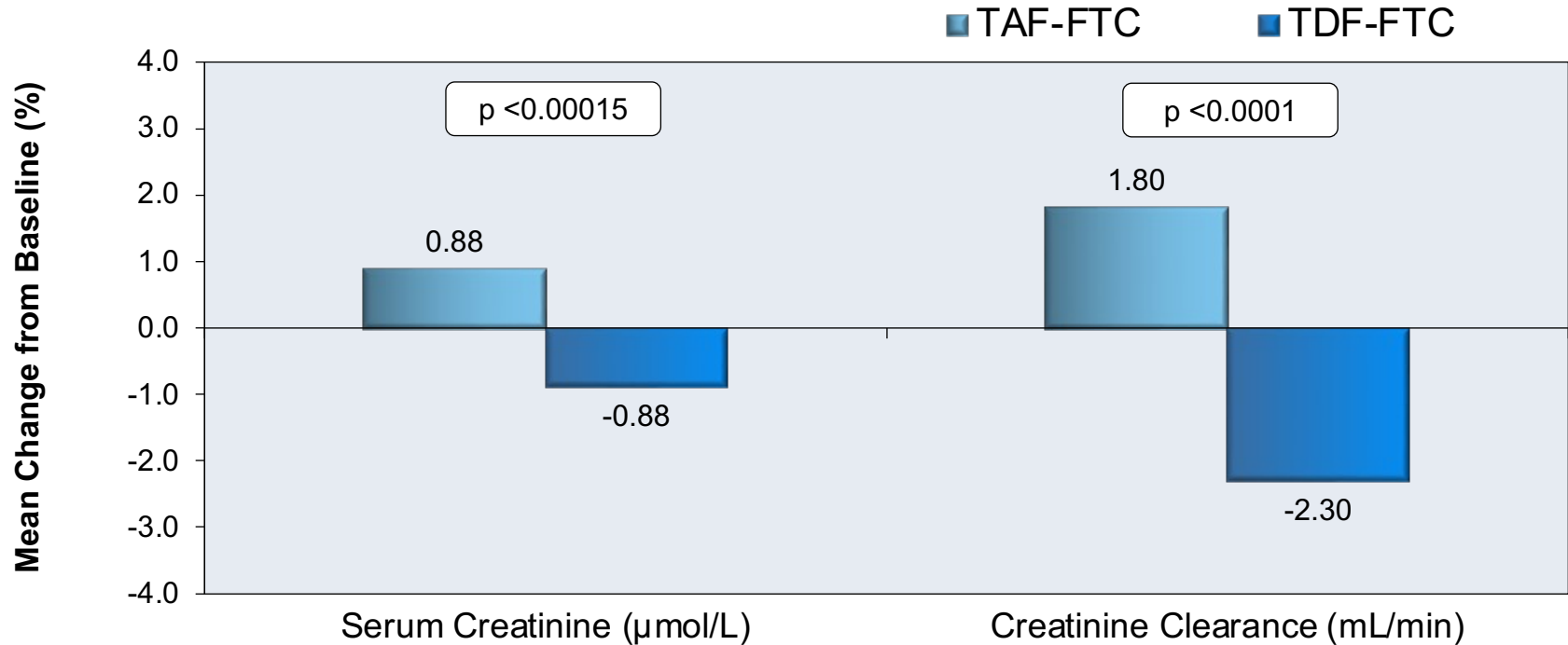
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DISCOVER: Bone Mineral Density



TAF-FTC versus TDF-FTC HIV PrEP for MSM and TGW

DISCOVER: Renal Function



TAF-FTC versus TDF-FTC HIV PrEP for MSM and TGW

DISCOVER: Adverse Effects and Sexually Transmitted Infections

	TAF-FTC (n = 2,694)	TDF-FTC (n = 2,693)
Drug-Related Adverse Effects (AEs)		
AEs leading to stoppage, n (%)	36 (1%)	49 (2%)
Mean change (%), spine BMD	0.50*	-1.12
Mean change (%), hip BMD	0.18*	-0.99
Mean change (mL/min), eGFR	1.8*	-2.3
Sexually Transmitted Infections (STIs)		
Gonorrhea (any site), n (n/100 person-years)	1053 (47.1)	1059 (45.3)
Chlamydia (any site), n (n/100 person-years)	1049 (41.9)	1071 (41.6)
Syphilis, n (n/100-person years)	365 (10.3)	370 (9.5)
Abbreviations: BMD = bone mineral density; GFR = glomerular filtration rate		

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DISCOVER: Conclusions

Interpretation: “Daily emtricitabine and tenofovir alafenamide shows non-inferior efficacy to daily emtricitabine and tenofovir disoproxil fumarate for HIV prevention, and the number of adverse events for both regimens was low. Emtricitabine and tenofovir alafenamide had more favourable effects on bone mineral density and biomarkers of renal safety than emtricitabine and tenofovir disoproxil fumarate.”

Acknowledgments

The **National HIV Curriculum** is supported by the Health Resources and Services Administration (HRSA) of the U.S. Department of Health and Human Services (HHS) as part of a financial assistance award totaling \$1,021,448 with 0% financed with non-governmental sources. The contents are those of the author(s) and do not necessarily represent the official views of, nor an endorsement, by HRSA, HHS, or the U.S. Government. For more information, please visit HRSA.gov. This project is led by the University of Washington's Infectious Diseases Education and Assessment (IDEA) Program.

