

TDF-FTC vs. ABC-3TC, each with Atazanavir + RTV or Efavirenz
ACTG 5224s (Substudy of ACTG 5202)

TDF-FTC vs. ABC-3TC, each with Atazanavir + RTV or Efavirenz

ACTG 5224s (Bone Effects): Study Design

Study Design: ACTG 5224s

- **Background:** Substudy of ACTG 5202, in which participants were randomized and blinded to receive TDF-FTC or ABC-3TC with open-label RTV-boosted ATV or EFV; in the substudy, effects on bones, fat distribution, renal function, inflammation, and other parameters monitored over time
- **Inclusion Criteria**
 - Age >16
 - Antiretroviral-naïve
 - No major resistance mutations
- **Treatment Arms** (all medications once daily)
 - EFV 600 mg + ABC-3TC 600-300 mg
 - ATV 300 mg + RTV 100 mg + ABC-3TC 600-300 mg
 - EFV 600 mg + TDF-FTC 300-200 mg
 - ATV 300 mg + RTV 100 mg + TDF-FTC 300-200 mg

EFV + ABC-3TC

(n = 70)

ATV + RTV + ABC-3TC

(n = 65)

EFV + TDF-FTC

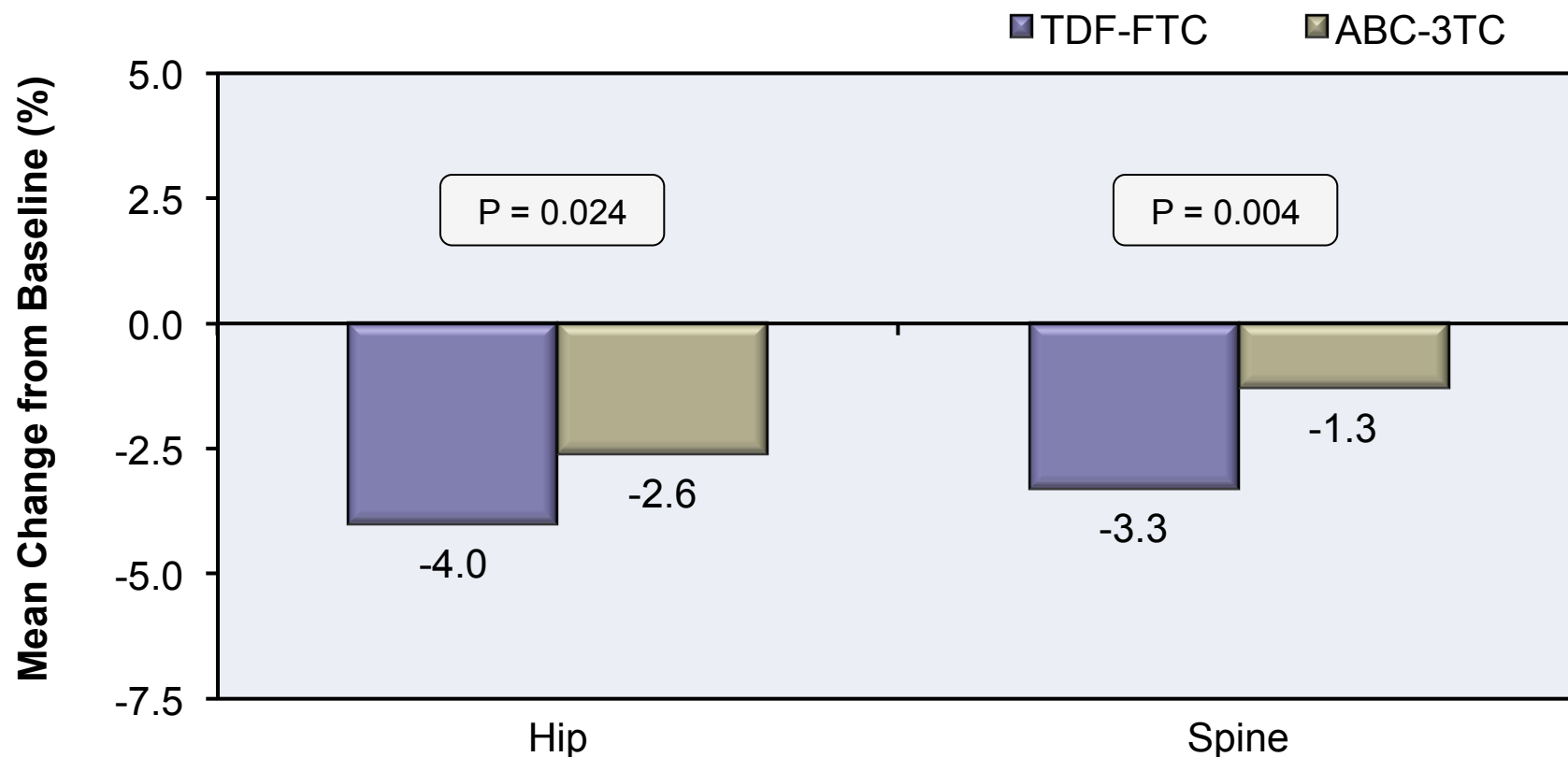
(n= 69)

ATV + RTV + TDF-FTC

(n= 65)

TDF-FTC vs. ABC-3TC, each with Atazanavir + RTV or Efavirenz ACTG 5224s (Bone Effects): Results

Week 96 Change in Bone Mineral Density (NRTI Component, ITT Analysis)



TDF-FTC vs. ABC-3TC, each with Atazanavir + RTV or Efavirenz ACTG 5224s (Bone Effects): Conclusion

Conclusions: “Compared with ABC-3TC, TDF-FTC–treated participants had significantly greater decreases in spine and hip BMD, whereas ATV/r led to more significant losses in spine, but not hip, BMD than EFV.”

TDF-FTC vs. ABC-3TC, each with Atazanavir + RTV or Efavirenz

ACTG 5224s (Renal Effects): Study Design

Study Design: ACTG 5224s

- **Background:** Substudy of ACTG 5202, in which participants were randomized and blinded to receive TDF-FTC or ABC-3TC with open-label RTV-boosted ATV or EFV; in the substudy, effects on bones, fat distribution, renal function, inflammation, and other parameters monitored over time
- **Inclusion Criteria**
 - Age >16
 - Antiretroviral-naïve
 - No major resistance mutations
- **Treatment Arms** (all medications once daily)
 - EFV 600 mg + ABC-3TC 600-300 mg
 - ATV 300 mg + RTV 100 mg + ABC-3TC 600-300 mg
 - EFV 600 mg + TDF-FTC 300-200 mg
 - ATV 300 mg + RTV 100 mg + TDF-FTC 300-200 mg

EFV + ABC-3TC
(n = 64)

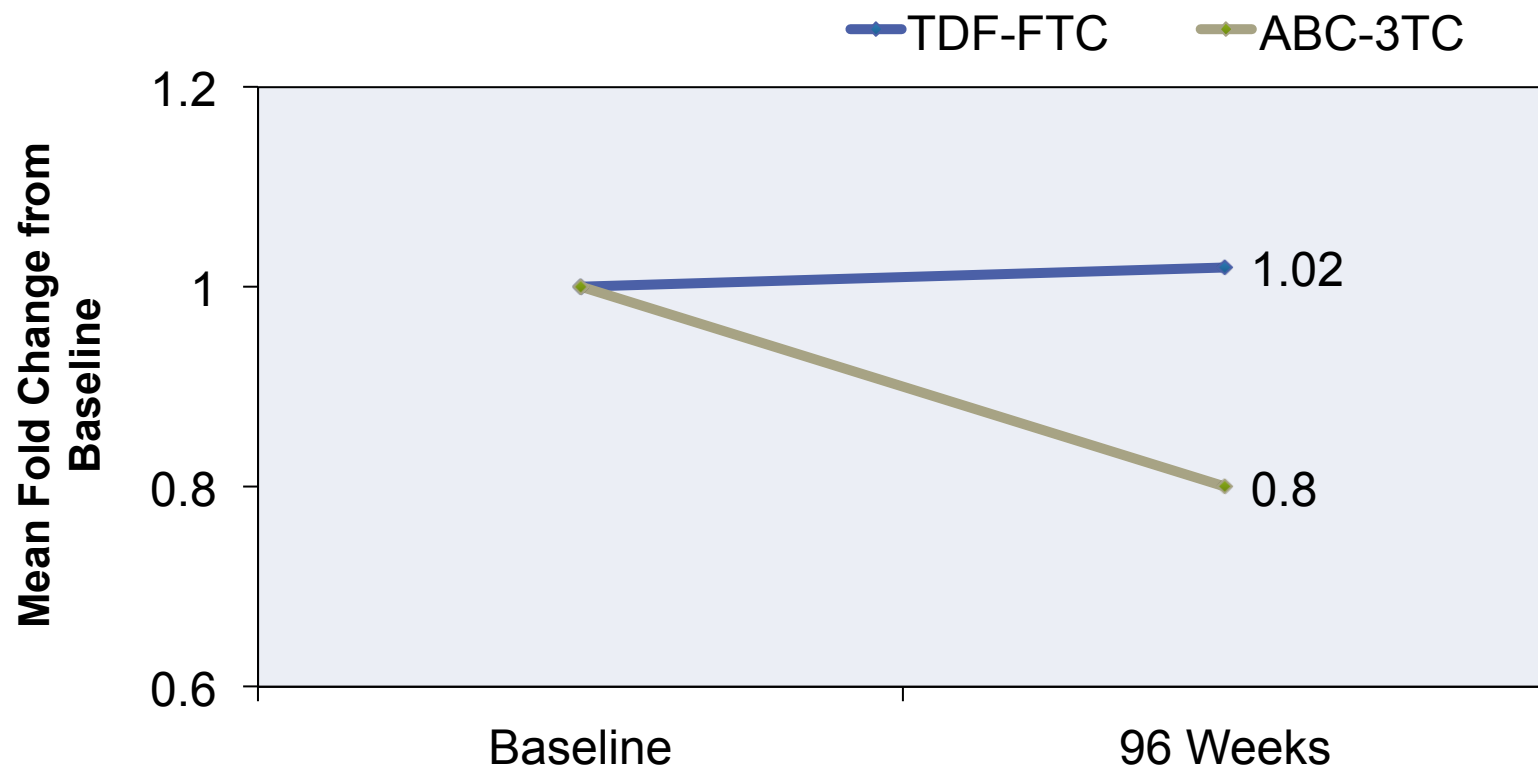
ATV + RTV + ABC-3TC
(n = 60)

EFV + TDF-FTC
(n = 65)

ATV + RTV + TDF-FTC
(n = 56)

TDF-FTC vs. ABC-3TC, each with Atazanavir + RTV or Efavirenz ACTG 5224s (Renal Effects): Results

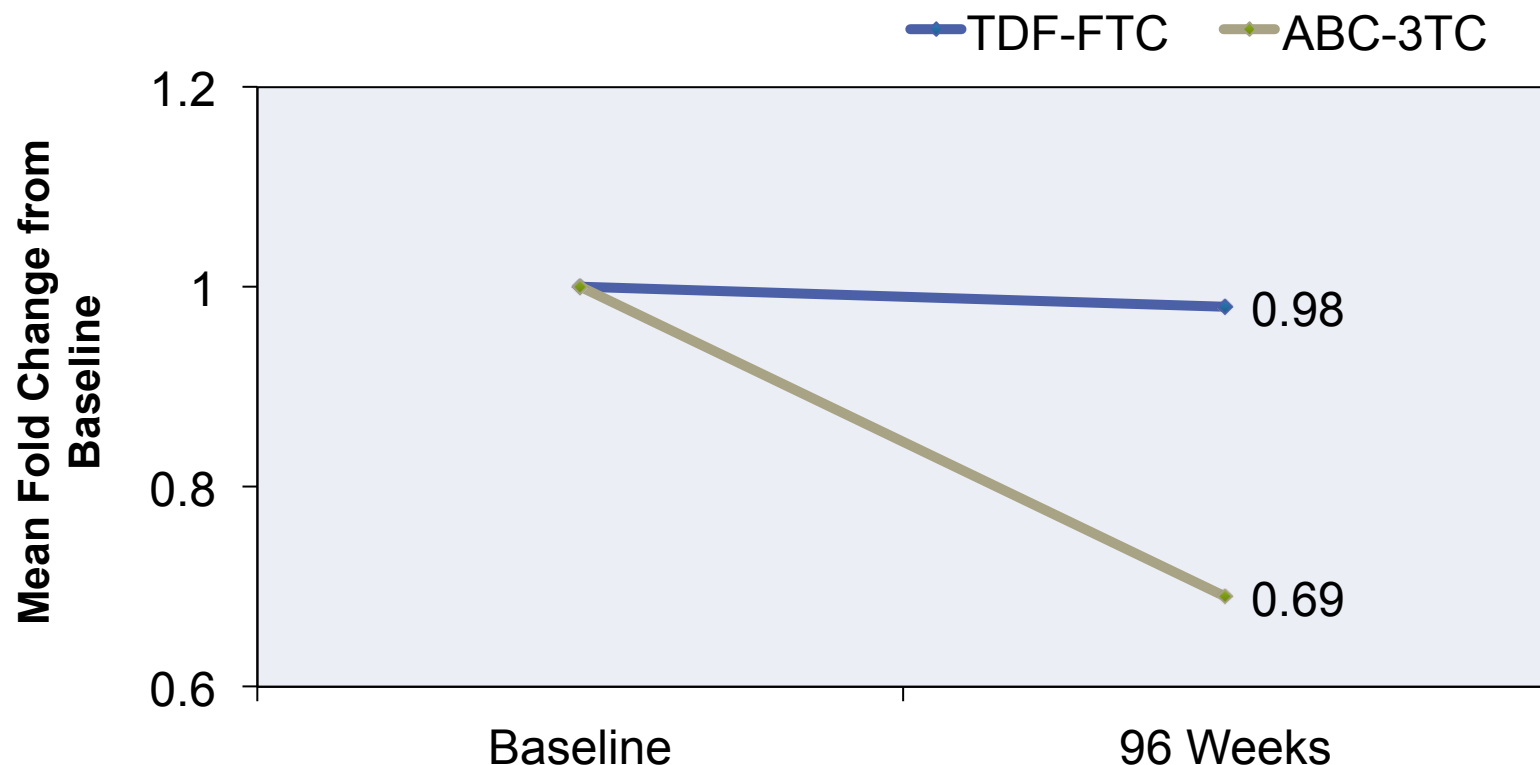
Week 96 Change in Urine Protein:Cr Ratio (NRTI Component, ITT Analysis)



Difference in mean fold-change with ABC/3TC compared to TDF/FTC: 21.7% (p=0.011)

TDF-FTC vs. ABC-3TC, each with Atazanavir + RTV or Efavirenz ACTG 5224s (Renal Effects): Results

Week 96 Change in Urine Albumin:Cr Ratio (NRTI Component, ITT Analysis)



Difference in mean fold-change with ABC/3TC compared to TDF/FTC: 28.8% (p=0.018)

TDF-FTC vs. ABC-3TC, each with Atazanavir + RTV or Efavirenz ACTG 5224s (Renal Effects): Conclusions

Conclusions: “In this pre-specified secondary analysis, ART initiation was associated with improvements in proteinuria and albuminuria, with significantly greater improvements in participants randomized to ABC/3TC versus TDF/FTC. These are the first data from a randomized trial to suggest that initiation of TDF/FTC may not be associated with the same degree of improvement in proteinuria and albuminuria that have been reported with other regimens. Future studies should consider the long-term clinical significance of these findings.”

TDF-FTC vs. ABC-3TC, each with Atazanavir + RTV or Efavirenz

ACTG 5224s (Fat Changes): Study Design

Study Design: ACTG 5224s

- **Background:** Substudy of ACTG 5202, in which participants were randomized and blinded to receive TDF-FTC or ABC-3TC with open-label ritonavir-boosted ATV or EFV; in the substudy, effects on bones, fat distribution, renal function, inflammation, and other parameters monitored over time
- **Inclusion Criteria**
 - Age >16
 - Antiretroviral-naïve
 - No major resistance mutations
- **Treatment Arms** (all medications once daily)
 - EFV 600 mg + ABC-3TC 600-300 mg
 - ATV 300 mg + RTV 100 mg + ABC-3TC 600-300 mg
 - EFV 600 mg + TDF-FTC 300-200 mg
 - ATV 300 mg + RTV 100 mg + TDF-FTC 300-200 mg

EFV + ABC-3TC

(n = 70)

ATV + RTV + ABC-3TC

(n = 65)

EFV + TDF-FTC

(n= 69)

ATV + RTV + TDF-FTC

(n= 65)

TDF-FTC vs. ABC-3TC, each with Atazanavir + RTV or Efavirenz ACTG 5224s (Fat Changes): Results

Week 96 Limb and Trunk Fat Changes (NRTI Component, ITT Analysis)

Limb and Trunk Fat Changes at 96 Weeks by NRTI Component (Comparing ABC-3TC to TDF-FTC)		
	Difference Between ABC-3TC and TDF-FTC Arms	P Value
Absolute change limb fat (by DXA)	0.55 kg	0.12
Percent change limb fat (by DXA)	4%	0.46
Absolute change trunk fat (by DXA)	0.37 kg	0.45
Percent change trunk fat (by DXA)	2.2%	0.76
Absolute change visceral fat (by CT)	-2.8 cm ²	0.58
Percent change visceral fat (by CT)	-5.1%	0.55

TDF-FTC vs. ABC-3TC, each with Atazanavir + RTV or Efavirenz ACTG 5224s (Fat Changes): Conclusions

Conclusion: “ABC-3TC- and TDF-FTC-based regimens increased limb and visceral fat at week 96, with a similar prevalence of lipoatrophy. Compared to the EFV group, subjects assigned to ATV-r had a trend towards higher mean percentage increase in visceral adipose tissue.”

Acknowledgment

The **National HIV Curriculum** is an AIDS Education and Training Center (AETC) Program resource funded by the United States Health Resources and Services Administration. The project is led by the University of Washington and the AETC National Coordinating Resource Center.

The content in this slide set does not represent the official views of the U.S. Department of Health and Human Services, Health Resources & Services Administration.

