Weight Gain After Switch From Efavirenz-Based to Integrase Inhibitor-Based Regimens

Poster #1398

Presented by:
Jamison E. Norwood
Department of Medicine
Vanderbilt University Medical Center
jamison.norwood@vanderbilt.edu

Jamison Norwood[1], Megan Turner[2], Carmen Bofill[2], Cathy Jenkins[2], Sally Bebawy[2], Peter F. Reberio[2,3], Todd Hulgan[2], Stephen Raffanti[2], David W. Haas[2,4], Timothy R. Sterling[2], and John R. Koethe[2]

[1]Department of Medicine, [2]Division of Infectious Diseases, and [3]Division of Epidemiology, Vanderbilt University Medical Center, Nashville, TN; and [4]Meharry Medical College, Nashville, TN

INTRODUCTION

- Integrase strand transfer inhibitor (INSTI)-based antiretroviral therapy (ART) is a potent newer class of ART
- We received anecdotal accounts of weight gain in patients switching from daily, fixed-dose efavirenz/tenofovir disoproxil fumarate/emtricitabine (EFV/TDF/FTC) to fixed-dose dolutegravir/abacavir/lamivudine (DTG/ABC/3TC)
- We evaluated cohort trends in body weight, comparing patients with sustained virologic suppresion who switched from EFV/TDF/FTC to an INSTI-containing regimen, including DTG/ABC/3TC, with those remaining on EFV/TDF/FTC
- We also evaluated trends in hemoglobin A1c (HbA1c) and lipid profiles

METHODS

- Inclusion criteria: patients on EFV/TDF/FTC for ≥ 2 years with consistent plasma HIV-1 RNA <1000 copies/mL prior to regimen switch and for ≥ 18 months post-switch
- We evaluated weight change in kg over 18 months in patients who were switched to an INSTI-containing regimen or a protease inhibitor (PI)-containing regimen versus those remaining on EFV/TDF/FTC
- A sub-group analysis compared patients switched to DTG/ABC/3TC versus raltegravir- or elvitegravir-containing regimens
- Linear mixed effects models assessed mean differences in weight over time, adjusting for baseline age, sex, race, CD4+ count and weight

RESULTS

Table 1. Baseline clinical & demographic characteristics, stratified by ART

Variable	Switch to INSTI regimen (n=136)	Switch to PI regimen (n=34)	Continued EFV/TDF/FTC (n=325)
Age, years median (IQR)	39.7 (29.7, 47.6)	38.6 (30.8, 47.6)	38.5 (32.1, 44.5)
Non-white, %	38%	41%	46%
Female, %	14%	29%	14%
CD4 count, cells/μL	662 (488, 850)*	516 (407, 678)	576 (410, 775)
BMI, kg/m²	26 (23, 29.4)	25.8 (22.4, 29.8)	25.6 (22.5, 29.5)
Weight, kg median (IQR)	82.5 (72.7, 93.0)	75.2 (67.0, 91.8)	80.3 (69.6, 92.8)

* p<0.05 compared to EFV/TDF/FTC continuation group

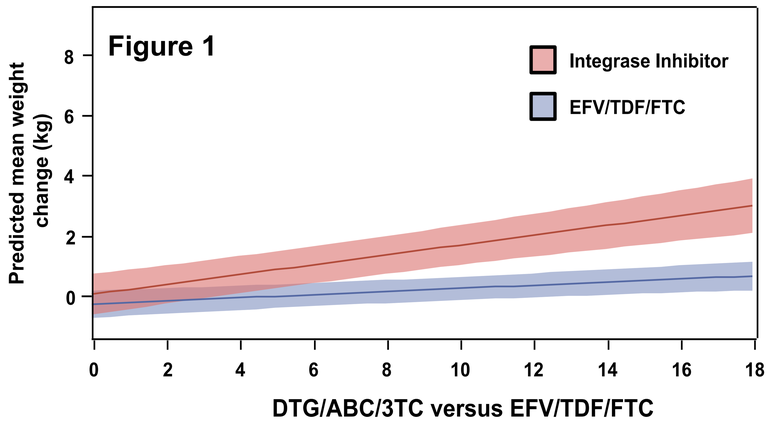
- Those switched to an INSTI-containing regimen gained more weight (mean **+2.9** kg) than those remaining on EFV/TDF/FTC at 18 months (mean **+0.9** kg, p=0.003) (**Figure 1** & **Table 2**)
- Weight change did not differ for those changed to a PI-containing regimen (**+0.7** kg, p=0.81)
- Patients switched to DTG/ABC/3TC gained **5.3** kg (p=0.001 vs. EFV/TDF/FTC **Figure 2**). This was greater than the **2.8** kg weight gain among those switched to a raltegravir- or elvitegravir-containing regimen, but not statistically significantly (p=0.19)

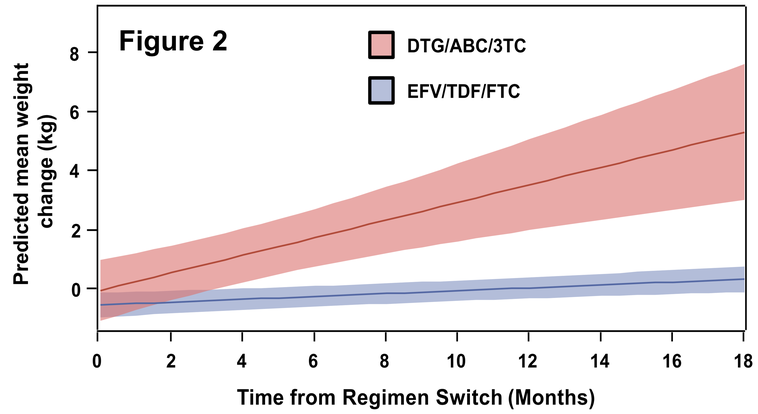
Table 2. Weight gain at 18 months by ART regimen switch

ART regimen switch	Mean weight change over 18 months, kg	P-value
Continued EFV/TDF/FTC	+0.9	0.003
To INSTI regimen	+2.9	< 0.01
To PI regimen	+0.7	0.81
To DTG/ABC/3TC	+5.3	0.001

RESULTS (cont'd)

Integrase inhibitor regimens versus EFV/TDF/FTC





- HbA1c increased from 6.4% to 6.9% in those switched to an INSTI-containing regimen, but this change was not significant (p=0.30)
- Changes in lipid profiles were not significant

CONCLUSIONS

- Switching from EFV/TDF/FTC to an INSTI regimen was associated with weight gain
- Limitations were small sample size, single site, mostly male cohort, and inclusion of only patients on EFV/TDF/FTC
- Studies in larger cohorts are needed to evaluate changes in cardiometabolic risk factors following a switch to an INSTI-containing regimen

This work was supported by National Institute of Allergy and Infectious Diseases (NIAID) grants K23 100700 and P30 AI110527, the Tennessee Center for AIDS Research.