results suggest that other factors than intensity of drug exposure are involved in weight increase under DTG.

678 RACE IMPACT ON DOLUTEGRAVIR-ASSOCIATED WEIGHT GAIN AMONG PREVIOUSLY ART-NAIVE PLWH

Stephanie A. Ruderman[1], Robin M. Nance[1], Bridget M. Whitney[1], Kenneth H. Mayer[2], Richard D. Moore[3], Joseph J. Eron[4], W. C. Mathews[5], Michael Saag[6], Greer Burkholder[6], Mari M. Kitahata[1], Sara Lindström[1], Brian Wood[1], Ann Collier[1], Joseph Delaney[7], Heidi M. Crane[1]

[1]University of Washington, Seattle, WA, USA, [2]Harvard Medical School, Boston, MA, USA, [3]Johns Hopkins University, Baltimore, MD, USA, [4]University of North Carolina at Chapel Hill, Chapel Hill, NC, USA, [5]University of California San Diego, San Diego, CA, USA, [6]University of Alabama at Birmingham, Birmingham, AL, USA, [7]University of Manitoba, Winnipeg, MB, Canada

Background: Initiation of dolutegravir (DTG)-based antiretroviral therapy (ART) has been associated with weight gain in some people living with HIV (PLWH), and race has been proposed as a risk factor. Prior studies have mixed naïve and treated PLWH or used historic regimen comparisons complicating interpretation. Therefore, we examined the role of race in substantial weight gain among previously ART-naïve PLWH initiating DTG vs other currently used non-integrase inhibitor-based regimens in a US cohort.

Methods: We included ART-naïve PLWH who initiated ART between 2012-2018 across 8 Centers for AIDS Research Network of Integrated Clinical Systems (CNICS) sites. ART regimens included efavirenz, rilpivirine, atazanavir, darunavir, and DTG-based ≥3 drug regimens. We compared DTG to regimens without integrase inhibitors to assess the association between DTG and substantial weight gain, defined as ≥15kg, an empirically-based cut-off, 1 year following ART initiation. We restricted race to white vs black and baseline BMI to ≥18.5 kg/m_2. Data were modeled using logistic regression with the rare disease assumption and adjusted for age, sex, hepatitis B and/or C virus coinfection, smoking, diabetes, and baseline BMI, with an interaction between race and DTG use. We conducted sensitivity analyses including baseline HIV disease severity as measured by lowest CD4 count (cells/mm_3) and limiting regimens to tenofovir (TDF) with emtricitabine/lamivudine backbones.

Results: Among 822 PLWH (n=302 with DTG; n=520 without DTG), DTG users were more likely to gain ≥15kg compared to non-DTG users (RR:1.7 95%CI:0.9-3.0). Overall, 52 (6%) PLWH gained ≥15kg, with 26 (50%) taking DTG, and of those, 19 (73%) were black. Within DTG users, black PLWH gained an average of 5.1kg while their white counterparts gained an average of 3.3kg. Black DTG users had a 3.2 times greater risk of gaining ≥15kg compared to white DTG users in their first year after ART initiation (95%CI:1.3-8.0). The risk was attenuated after accounting for HIV disease severity (RR:2.4 95%CI:0.9-6.3) and limiting regimens to those with TDF (RR:2.3 95%CI:0.7-7.3), and no longer significant due to smaller size but remained suggestive. Differences in risk of weight gain between black and white participants was not observed for non-DTG based regimens.

Conclusion: Black PLWH had an increased risk of substantial weight gain compared to white PLWH in their first year after DTG initiation. Additional studies are needed to clarify reasons for racial disparities.

Table. Logistic regression for the risk of gaining at least 15kg, including an interaction term for race and DTG use (n=822)

Group	RR	95%CI		p-value
White not on DTG [a] (*ref*)	1.00	--	--	--
White on DTG	1.01	0.39	2.61	0.99
Black not on DTG [a]	1.39	0.62	3.14	0.43
Black on DTG [b]	3.20	1.50	6.83	0.00
Race x DTG interaction	2.29	0.68	7.69	0.18
Black on DTG compared to white on DTG [b,c]	3.18	1.27	7.97	0.01

RR: relative risk (from logistic regression using the rare disease assumption); CI: confidence interval; DTG: Dolutegravir. Adjusted for age, sex, hepatitis B and/or C virus coinfection, smoking, diabetes, and baseline BMI category.
[a] Regimens not including DTG or other integrase inhibitors.
[b] Estimated using linear combinations of RRs.
[c] Note different reference group.

679 DTG PRESCRIBING PATTERNS IN PLWH ≥65 YEARS: THE IMPACT OF 2DR AND WEIGHT GAIN

Giovanni Guaraldi[1], Stefano Calza[2], Andrea Calcagno[3], Jovana Milic[1], Emanuele Focà[2], Matteo Rota[2], Anna Celotti[2], Benedetto Maurizio Celesia[4], Stefania Piconi[5], Annamaria Cattelan[6], Giuseppe V. De Socio[7], Giancarlo Orofino[3], Agostino Riva[5], Silvia Nozza[8], Giovanni Di Perri[3]

[1]University of Modena and Reggio Emilia, Modena, Italy, [2]University of Brescia, Brescia, Italy, [3]University of Torino, Torino, Italy, [4]Garibaldi Hospital, Catania, Italy, [5]Luigi Sacco University Hospital, Milan, Italy, [6]University of Padova, Padova, Italy, [7]University of Perugia, Perugia, Italy, [8]Ospedale San Raffaele, Milano, Italy

Background: No randomised clinical studies assessed antiretroviral (ART) prescription in geriatric HIV patients. Data can be obtained from observational studies or geriatric HIV cohorts. The aim of this study was to characterize ART prescription patterns of INSTI naïve virally suppressed ART-experienced people living with HIV (PLWH) ≥65 years who switch to a DTG based regimen (DTG-s) vs remaining INSTI-naive (INSTI-n) on stable ART.

Methods: People were prospectively recruited in the Geriatric Patients Living with HIV/AIDS (GEPPO) cohort, a prospective observational multicentre study in PLWH ≥65 years with a special focus on ART prescription and anthropometric changes. Body weight was assessed at 1st study visit and at last evaluation. In the DTG-s group, the 1st visit was prior to switch.

Results: Out of 591 PLWH (16.2% females),164 were in the DTG and 427 in the INSTI-n group. At study entry, median age was 70.8 (±4.6) years, CD4 cell count was 661 (±243) c/mL and HIV RNA was undetectable in 96% of PLWH. Mean weight at 1st visit was 74.4 (±13.9) kg in INSTI-n and 70.9 (±12.4) kg in DTG-s (p=0.053). A significantly higher proportion of patients in DTG-s received dual therapy (2DR) compared to INSTI-n (60.7% DTG vs. 44.6% INSTI-n, p<0.001). Table describes top five 2DR and 3DR regimens. No difference in demographic, immunovirological, multimorbidity and polypharmacy prevalence were observed between the two groups (all p>0.05). After an average follow up of 2.8 (±0.76) years we still observed no significant difference in CD4 (669 vs 663, p=0.57) or virologic suppression (96.3% vs. 96.2%, p=0.99). At follow-up, no change in body weight was present in the two groups: mean absolute weight change was -0.1 (±7.4) in INSTI-n and -0.3 (± 4.8) in DTG-s (p=0.7). Weight gain (≥5%) was not significant in study arms.

Conclusion: This report analyzed real-life data of geriatric PLWH switching to DTG as first INSTI regimen. DTG initiation was not associated with important immune-virological changes, but led to double proportion of PLWH undergoing a 2DR. This option may be considered as a deprescribing recommendation in elderly. Over a follow-up, no change in absolute body weight nor significant weight gain was observed, indicating that this phenomenon is not present in geriatric PLWH.

2DR

INSTI-n (67)	DTG-s (75)
Darunavir/c- lamivudine (N=11, 16.4%)	DTG – lamivudine (N=29, 38.7%)
Atazanavir/c – lamivudine (N=9, 13.4%)	DTG - rilpivirine (N=18, 24.0%)
Darunavir/r – lamivudine (N=8, 11.9%)	DTG - Atazanavir (N=7, 9.3%)
Darunavir - etravirine (N=7, 10.4%)	DTG – darunavir/c (N=6, 8.0%)
Darunavir- abacavir (N=5, 7.5%)	DTG -atazanavir/c (N=4, 5.3%)

3DR

INSTI-n (295)	DTG-s (85)
Rilpivirine – TAF/FTC (N=91, 30.8%)	DTG - abacavir/lamivudine (N=53, 62.4%)
Nevirapine - abacavir/lamivudine (N=29, 9.8%)	DTG - TAF/FTC (N=25, 29.4%)
Atazanavir/c -Abacavir/lamivudine (N=16, 5.4%)	DTG -darunavir - lamivudine (N=1, 1.2%)
Efavirenz/emtricitabine/TDF (N=15, 5.1%)	DTG - darunavir - etravirine (N=1, 1.2%)
Efavirenz – abacavir/lamivudine (N=13, 4.4%)	DTG- Darunavir/c – lamivudine (N=1, 1.2%)

680 DIABETES, WEIGHT GAIN, AND INTEGRASE INHIBITOR USE IN NORTH AMERICAN HIV+ PERSONS

Peter F. Rebeiro[1], Cathy Jenkins[1], Aihua Bian[1], Jordan E. Lake[2], Kassem Bourgi[3], Keri N. Althoff[4], Michelle Floris-Moore[5], Michael A. Horberg[6], Janet Tate[7], Amanda Willig[8], Richard D. Moore[4], Stephen J. Gange[4], Timothy R. Sterling[1], John R. Koethe[1], for the NA-ACCORD of IeDEA

[1]Vanderbilt University, Nashville, TN, USA, [2]University of Texas at Houston, Houston, TX, USA, [3]Indiana University, Indianapolis, IN, USA, [4]Johns Hopkins Bloomberg School of Public Health, Baltimore, MD, USA, [5]University of North Carolina at Chapel Hill, Chapel Hill, NC, USA, [6]Kaiser Permanente Mid-Atlantic States, Rockville, MD, USA, [7]VA Connecticut Healthcare System, West Haven, CT, USA, [8]University of Alabama at Birmingham, Birmingham, AL, USA

Background: Integrase strand transfer inhibitor (INSTI)-based regimens have been implicated in greater weight gain in antiretroviral therapy (ART)-naïve HIV+ persons starting ART, though metabolic consequences are unclear. We examined the impact of initial ART regimen class on incident diabetes mellitus (DM) and potential mediation of this effect by weight change in a large North American HIV cohort.

Methods: We included treatment-naïve adults (≥18 years) initiating INSTI-, protease inhibitor (PI)-, or non-nucleoside reverse transcriptase inhibitor