EFFECT OF COMMON ANTIRETROVIRAL COMBINATIONS ON DEPRESSIVE SYMPTOMS IN WOMEN WITH HIV

0469

Luis Parra-Rodriguez[1], Jane O'Halloran[1], Yuezhe Wang[2], Raha M. Dastgheyb[2], Amanda B. Spence[3], Anjali Sharma[4], Deborah R. Gustafson[5], Joel Milam[6], Kathleen M. Weber[7], Adaora A. Adimora[8], Igho Ofotokun[9], Margaret A. Fischl[10], Deborah Konkle-Parker[11], Yanxun Xu[2], Leah H. Rubin[2]

[1]Washington University in St. Louis, St. Louis, MO, USA; [2]The Johns Hopkins University, Baltimore, MD; [3]Georgetown University, Washington, DC, USA; [4]Albert Einstein Colege of Medicine, Bronx, NY, USA; [5]SUNY Downstate Medical Center, Brooklyn, NY, USA; [6]University of California Irvine, Irvine, CA, USA; [7]Cook County Health & Hospital System, Chicago, IL, USA; [8]University of North Carolina at Chapel Hill, Chapel Hill, NC, USA; [9]Emory University, Atlanta, GA, USA; [10]University of Miami, Miami, FL, USA; [11]University of Mississippi, Jackson, MS, USA.

BACKGROUND

- Modern antiretroviral therapy (ART) has been associated with neuropsychiatric adverse events including depression.
- We examined the combined effect of ART regimens on somatic (e.g. sleep/appetite disturbances) and non-somatic (e.g. sadness) depressive symptoms in women with HIV (WWH).

METHODS

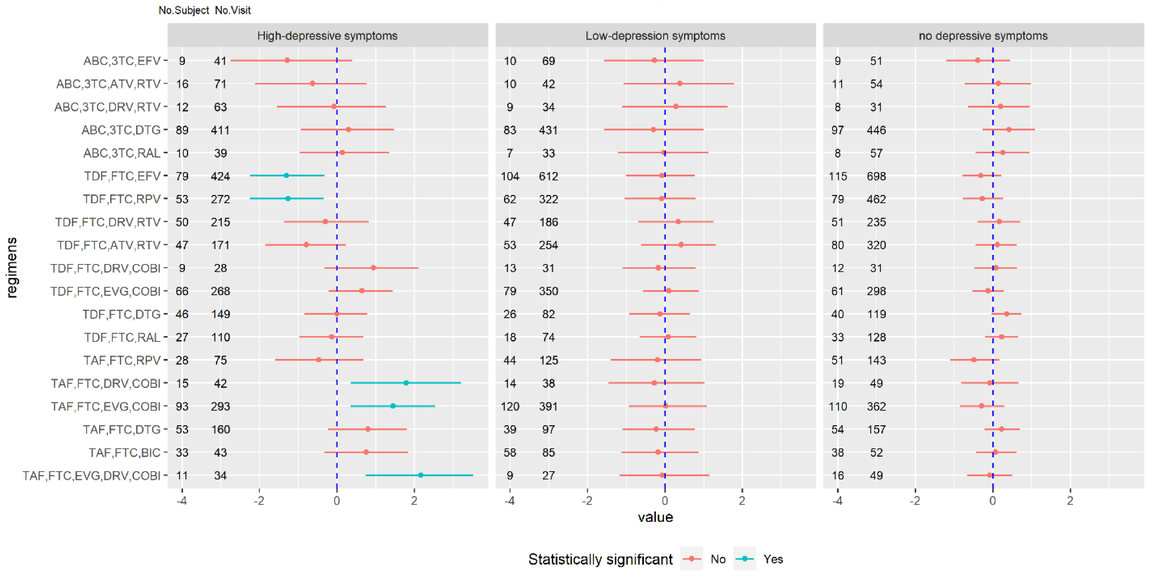
- Women's Interagency HIV Study (WIHS) participants with ≥2 study visits receiving contemporary ART regimens were divided into three groups using longitudinal Center for Epidemiologic Studies Depression (CES-D) scale scores:
  - High-depression (CES-D ≥16 on ≥50% of visits)
  - Low-depression (CES-D ≥16 on < 50% of visits)
  - Never depressed (CES-D < 16 for all visits)
- Novel Bayesian machine learning methods building upon a subset-tree kernel approach were developed to estimate the combined effects of ART regimen on somatic and non-somatic depressive symptoms in each group after controlling for relevant covariates.

Total Sample (n=1,538)	High-depression (n=459) Mean (SD)	Low-depression (n=500) Mean (SD)	Never depressed (n=579) Mean (SD)	p-value
Year of Age, n (%)				0.307
25-35	44 (10)	62 (12)	52 (9)	
36-45	122 (27)	141 (28)	171 (30)	
45-55	214 (47)	204 (41)	242 (42)	
>55	79 (17)	93 (19)	114 (20)	
Race/ethnicity, n (%)				0.031
White (Non-Hispanic)	65 (14)	49 (10)	45 (8)	
African-American (Non-Hispanic)	319 (69)	356 (71)	438 (76)	
Hispanic	60 (13)	78 (16)	82 (14)	
Highest level of education: complete high school, n (%)	280 (61)	330 (66)	432 (75)	**<0.001**
Average household income/year: <= $12000, n (%)	274 (60)	266 (53)	252 (44)	**<0.001**
Lowest CD4 (cells per mm^3), median (IQR)	272 (321)	273.5 (296.5)	278 (286.5)	0.980
Current CD4 (cells per mm^3), median (IQR)	559 (478.5)	574 (397)	613 (411)	0.102
Depressive symptoms (CES-D)	23.9 (11.3)	11.3 (8.9)	4.4 (4.2)	**<0.001**
Recent heavy alcohol use, n (%)	89 (19)	90 (18)	74 (13)	0.009
Current smoking status, n (%)	226 (49)	173 (35)	180 (31)	**<0.001**
Recent marijuana use, n (%)	124 (27)	85 (17)	87 (15)	**<0.001**
Recent Crack, cocaine, and/or heroin use, n (%)	69 (15)	28 (6)	26 (4)	**<0.001**

Table 1. Baseline characteristics

The combination of Tenofovir Alafenamide with a Cobicistat-boosted Integrase Inhibitor or Protease Inhibitor, is associated with more somatic symptoms of depression in women with HIV

Figure 1. Combined effects of different ART regimens according to frequency on somatic depressive symptoms by group



ABC: Abacavir, 3TC: Emtricitabine, TDF: Tenofovir disoproxil fumarate, TAF: Tenofovir alafenamide, EFV: Efavirenz, RPV: Rilpivirine, ATV: Atazanavir, DRV: Darunavir, RTV: Ritonavir, COBI: Cobicistat, RAL: Raltegravir, EVG: Elvitegravir, DTG: Dolutegravir, BIC: Bictegravir.

All models controlled for: study enrollment site; age; race/ethnicity; years of education; exposure time of ART drugs used prior to 2014 (drugs used less than 100 times in the database are not included); average household income; CD4 count; body mass index; substance use (crack, cocaine and/or heroin use; marijuana; smoking; alcohol); menopausal status; diabetes; and undetectable viral load.

RESULTS

- In the high-depression group, the combination of TAF with either a cobicistat-boosted INSTI or PI was associated with greater somatic symptoms, while no difference was observed with TDF in these combinations.
- In the same group, TDF combined with an NNRTI was associated with fewer somatic symptoms of depression.
- ART regimens were not associated with somatic symptoms in the low- or no-depression groups.
- No relationship was found between ART and non-somatic symptoms in any group.

CONCLUSIONS

- Somatic depressive symptoms were observed more frequently among WWH who received TAF with a cobicistat-boosted INSTI or PI, but no relationship was found between depressive symptoms and TDF or un-boosted INSTIs or PIs.
- Our findings suggest complex associations between ART and depression, such that ART combinations rather than individual agents are associated with depressive symptoms.
- Future studies should consider complete drug regimens when assessing the risk of long-term neuropsychiatric complications of ART.

CONTACT INFORMATION

Lparra-rodriguez@wustl.edu

WIHS Women's Interagency HIV Study