Integrase Strand Transfer Inhibitors are Associated With Weight Gain in Women

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Background

- Integrase strand transfer inhibitor (INSTI)-based antiretroviral therapy (ART) is recommended first line for HIV treatment¹.
- Studies have suggested individuals who switch to INSTI-ART experience increases in body weight².
  - Limitations: Small sample size, Predominantly male cohorts, Measurement of only body weight and body mass index.
- Evaluated the effect of INSTI use in women living with HIV (WLHIV).

Methods


Study Design:

Assessment of viral load (VL <1000 copies/ml) and ART experienced

SWITCH/ADD (SWAD) or STAY

Pre (Baseline - BL):

-12 -6 0 +6 +12 +18

Post:

-12 -6 0 +6 +12 +18

Months from time of INSTI SWITCH/ADD

Statistical Analysis:

- BL demographic and clinical characteristics were compared.
- Outcome Variables:
  - Body Weight (BW)
  - Body Mass Index (BMI)
  - Percentage Body Fat (PBF)
  - Body Circumference Measurements (BCM)
  - Systolic and Diastolic Blood Pressure (SBP, DBP)
- Linear regression models compared change over time in each outcome by STAY/SWAD, adjusted for age, race, WIHS site, education, income, smoking status, and baseline ART regimen.
- Changes in outcomes were also stratified by INSTI type (dolutegravir or raltegravir/elvitegravir) and baseline BMI.

Results

- 1118 WIHS participants: -884 STAY -234 SWAD
  - Mean follow-up: 2.0 (SD 0.1) yrs
- No differences in baseline demographics or characteristics
  - Mean age: 48.8 (SD 8.8) yrs
  - 61% African American
  - Mean CD4: 669 (SD 294) cells/mm³
- At baseline, SWAD group was more likely to be on protease inhibitor-ART (69% vs. 46%, p<0.0001)

Summary and Conclusions

- In a longitudinal study of WLHIV women on ART, a switch to INSTI was associated with significant increases in body weight, body mass index, percentage body fat, body circumference measurements, and blood pressure compared to those remaining on non-INSTI ART.
- Given the long term impact of obesity and weight gain such as cardiovascular disease, diabetes, peripheral disease, stroke, and death⁵, further research is imperative to:
  - Illuminate mechanism of sex-specific differences and drug pharmacology
  - Investigate changes in additional metabolic outcomes such as lipid and glycemic profile
  - Determine prevention strategies
  - Create management plans for metabolic effects associated with INSTI use

Litterature Cited:


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