ABSTRACT

Background: Excessive weight gain following antiretroviral therapy (ART) is common and may predispose individuals to HIV-associated metabolic syndrome, sometimes leading to ART discontinuation. The aim of this study is to understand predictors of severe weight/body mass index (BMI) gain in individuals initiating ART.

Methods: This was a retrospective analysis of the ACTG A5257 study, where ART-naive HIV-infected individuals were randomized to one of 3 regimens: atazanavir/ritonavir (ATV/r), darunavir/emtricitabine (RAL), or raltegravir (RAL) each in combination with tenofovir disoproxil fumarate/emtricitabine. Severe weight gain definitions were defined as follows: (1) percent weight increase ≥10%; (2) an upward change in BMI category. Several demographic, clinical, and treatment-related variables were defined as baseline factors. The associations of baseline disease severity and black non-Hispanic race/ethnicity with severe weight/BMI gain over 96 weeks (Table 4). In addition, baseline BMI was also found to be associated with severe weight/BMI gain. The odds of a severe weight gain with ART/r treatment was 0.73 times lower compared to RAL (OR: 0.73; 95% CI: 0.53 to 0.98; p=0.047). The results for DRV/r versus RAL were similar but not statistically significant (OR: 0.70; 95% CI: 0.56 to 0.89; p=0.03).

RESULTS (Continued)

DISCUSSION

The ROC curves revealed that multivariable models for both severe weight/BMI outcomes showed similar AUC values and reasonable predictive accuracy. Our study demonstrates that higher HIV-RNA levels and lower CD4+ counts appear to be strongly associated with severe weight/BMI gain in individuals initiating ART.

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