

EV0008

ePoster Viewing

HIV/AIDS (incl anti-retroviral drugs, treatment & susceptibility/resistance, diagnostics & epidemiology)

Minimum adherence threshold necessary to achieve virologic suppression

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Background: Poor adherence (ADH) to antiretroviral therapy (ART) hinders the ability to achieve virologic suppression (VS). Study objectives were 1) quantify the minimum ADH threshold associated with achievement of VS and 2) determine if ADH is independently associated with VS.

Material/methods: A retrospective cohort study, with repeated subject sampling, was performed among HIV+ adults receiving care in Upstate New York Veterans' Healthcare Administration from 2000-2013. Inclusion criteria were: 1) receipt of ≥ 3 ART for ≥ 3 months, 2) availability of pharmacy refill records, 3) detectable pre-treatment (tx) HIVRNA and 4) ≥ 1 on-tx HIVRNA value. Data elements collected from medical records for each regimen included demographics, comorbidities, medications, dispensing history and lab values. Using pharmacy refill records, medication ADH was defined as possession of ≥ 3 ART agents at any time. Achievement of VS was defined as ≥ 1 undetectable on-tx HIVRNA. Classification and regression tree (CART) analyses were performed to identify breakpoints in ADH associated with VS.

Results: Of the 486 subjects, majority were tx-experienced (57.6%). Median (interquartile range, IQR) baseline HIVRNA was 15886 (1585 – 60052) copies/mL. The most common regimen types were NNRTI (38.5%), PI (37.7%), non-traditional/mixed class (21.6%) and INSTI (2.3%). VS occurred in 52.9% of subjects. Median (IQR) ADH was significantly higher for subjects achieving VS (71 [52 – 83%]) compared to those who did not (61 [42 – 76%]), $p < 0.001$. CART-derived ADH threshold associated with VS was 76.4%. When restricting to contemporary, traditionally-composed regimens, ADH threshold was 76.1%. Subjects with ADH $\geq 75\%$ were significantly more likely (64.0%) to achieve VS compared to those $< 75\%$ (46.4%), $p < 0.001$. Cumulative probability of achieving VS, stratified by ADH of 75%, is displayed in Figure 1. CART-derived ADH breakpoints for each regimen type were 76.1% (NNRTI-based), 75.9% (PI-based) and 78.8% (mixed regimen). Variables independently associated with VS were: ADH $\geq 75\%$ (hazard ratio, HR: 1.70, 95% confidence interval, CI: 1.32 – 2.19, $p < 0.001$), use of a single tablet regimen (HR: 1.47, 95% CI: 1.04 – 2.08, $p = 0.03$), age ≥ 50 years (HR: 1.28, 95% CI: 1.00 – 1.65, $p = 0.05$), and use of once-daily non-HIV medications vs non-once daily non-HIV medications (HR: 1.35, 95% CI: 1.01 – 1.81, $p = 0.04$).

Conclusions: ADH $\geq 75\%$, age ≥ 50 years, single tablet regimen and use of once-daily non-HIV medications were independently associated with VS.

Figure 1: Cumulative probability of achieving virologic suppression, stratified by ART adherence $\geq 75\%$

