

1. Effects of pill burden on discontinuation of the initial HAART regimen in minority female patients prescribed 1 pill/day versus any other pill burden

Seth Hill, Jan Kavookjian, Jingjing Qian, Allison Chung & John Vandewaa, AIDS Care: Psychological and Socio-medical Aspects of AIDS/HIV Oct 13

Abstract

Highly active antiretroviral therapy (HAART) is a mainstay of treatment for patients with Human Immunodeficiency Virus (HIV). Since second line HAART therapies can be costlier and less effective, it is essential to understand the duration of initial HAART therapies. The overall aim of this study was to estimate the effects of daily pill burden on the time to discontinuation of the initial HAART regimen. Patients were initially identified through the clinic's CAREWARE database. A chart review was conducted for data collection, where only adult, female, HIV-positive patients initiating therapy at the study clinic between 1 January 2001 and 31 December 2011 were included. All study subjects were followed up from the initiation of HAART to treatment discontinuation. A Kaplan–Meier curve was generated to describe time to discontinuation by regimens, and a Cox proportional hazards model was developed to assess the impact of different regimen and patient demographic characteristics on the hazard of discontinuation of the initial regimen. A total of 498 charts were initially reviewed. After assessment of these patients for inclusion criteria, a cohort of 115 adult female patients who initiated HAART at the study clinic was included. Patients treated with 1 pill/day regimen had a significantly longer time to discontinuation than regimens of >1 pills/day (mean duration of initial therapy was 1062.56 days vs. 631.70 days, respectively, $p = 0.003$). Compared to 1 pill/day regimens, >1 pills/day regimens were associated with a higher hazard of discontinuation (hazard ratio (HR) = 3.44 with 95% confidence interval (CI) = 1.25, 9.48). A higher viral load and patients without insurance were also found to be significantly associated with increased hazards of discontinuation. Overall, female HIV patients initiating therapy with the 1 pill/day HAART regimen were less likely to discontinue their treatment compared to patients initiating with >1 pills/day HAART regimen.

2. Temporal Association Between Incident Tuberculosis and Poor Virological Outcomes in a South African Antiretroviral Treatment Service

Ankur Gupta-Wright, Robin Wood, Linda-Gail Bekker, and Stephen D. Lawn, *J Acquir Immune Defic Syndr* 2013;64:261–270

Introduction:

The temporal relationship between incident tuberculosis (TB) and virological outcomes during antiretroviral therapy (ART) is poorly defined. This was studied in a cohort in Cape Town, South Africa.

Methods:

Data regarding TB diagnoses, ART regimens, and 4-monthly updated viral load (VL) and CD4 count measurements were extracted from a prospectively maintained database. Rates of virological breakthrough (VL \geq 1000 copies/mL) and failure (VL \geq 1000 copies/mL on serial measurements) following initial VL suppression were calculated. Poisson models were used to calculate incidence rate ratios (IRRs) and identify risk factors for these virological outcomes.

Results:

Incident TB was diagnosed in 391 (28.5%) of 1370 patients during a median of 5.2 years follow-up. Five hundred seventy-eight episodes of virological breakthrough and 231 episodes of virological failure occurred, giving rates of 10.0 episodes per 100 person-years and 4.0 episodes per 100 person-years, respectively. In multivariate analyses adjusted for baseline and time-updated risk factors, TB was an independent risk factor for adverse virological outcomes. These associations were strongly time dependent; the 6-month period following diagnosis of incident TB was associated with a substantially increased risk of virological breakthrough (IRR: 2.3, 95% confidence interval: 1.7 to 3.2) and failure (IRR: 2.6, 95% confidence interval: 1.6 to 4.3) compared with time without a TB diagnosis. Person-time preceding TB diagnosis or more than 6 months after a TB diagnosis was not associated with poor virological outcomes.

Conclusions:

Incident TB during ART was strongly associated with poor virological outcomes during the 6-month period following TB diagnosis. Although underlying mechanisms remain to be defined, patients with incident TB may benefit from virological monitoring and treatment adherence support.

3. Prospective Antiretroviral Treatment of Asymptomatic, HIV-1 Infected Controllers

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Abstract

The study of HIV-infected “controllers” who are able to maintain low levels of plasma HIV RNA in the absence of antiretroviral therapy (ART) may provide insights for HIV cure and vaccine strategies. Despite maintaining very low levels of plasma viremia, controllers have elevated immune activation and accelerated atherosclerosis. However, the degree to which low-level replication contributes to these phenomena is not known. Sixteen asymptomatic controllers were prospectively treated with ART for 24 weeks. Controllers had a statistically significant decrease in ultrasensitive plasma and rectal HIV RNA levels with ART. Markers of T cell activation/dysfunction in blood and gut mucosa also decreased substantially with ART.

Similar reductions were observed in the subset of “elite” controllers with pre-ART plasma HIV RNA levels below conventional assays (<40 copies/mL). These data confirm that HIV replication persists in controllers and contributes to a chronic inflammatory state. ART should be considered for these individuals.

4. Duration of HIV-1 Viral Suppression on Cessation of Antiretroviral Therapy in Primary Infection Correlates with Time on Therapy

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Abstract

Objective: A minority of HIV-1 positive individuals treated with antiretroviral therapy (ART) in primary HIV-1 infection (PHI) maintain viral suppression on stopping. Whether this is related to ART duration has not been explored.

Design: And Methods: Using SPARTAC trial data from individuals recruited within 6 months of seroconversion, we present an observational analysis investigating whether duration of ART was associated with post-treatment viraemic control. Kaplan-Meier estimates, logistic regression and Cox models were used.

Results: 165 participants reached plasma viral loads (VL) <400 copies/ml at the time of stopping therapy (ART stop). After ART stop, 159 experienced confirmed VL =400 copies/ml during median (IQR) follow-up of 167 (108,199) weeks.

Most participants experienced VL rebound within 12 weeks from ART stop, however, there was a suggestion of a higher probability of remaining <400 copies/ml for those on ART >12 weeks compared to =12 weeks ($p=0.061$). Cumulative probabilities of remaining <400 copies/ml at 12, 52 and 104 weeks after ART stop were 21% (95%CI=13, 30), 4% (1, 9), and 4% (1, 9) for =12 weeks ART, and 32% (22, 42), 14% (7, 22), and 5% (2, 11) for >12 weeks. In multivariable regression, ART for >12 weeks was independently associated with a lower probability of being =400 copies/ml within 12 weeks of ART stop (OR=0.11 (95%CI=0.03, 0.34), $p<0.001$). In Cox models of time to VL =400 after 12 weeks, we only found an association with female sex (OR=0.2, $p=0.001$).

Conclusion: Longer ART duration in PHI was associated with a higher probability of viral control after ART stop.