



COMPARISON OF DIRECTLY ADMINISTERED ANTIRETROVIRAL THERAPY (DAART) IN A METHADONE CLINIC AND SELF-ADMINISTERED THERAPY IN HIV-INFECTED PATIENTS

Gregory M. Lucas^{1,*}, Paul Weidel², Shannon Hader², and Richard D. Moore¹

Johns Hopkins University School of Medicine, Baltimore, Maryland, USA¹ and
Centers for Disease Control and Prevention, Atlanta, Georgia, USA²

Gregory M. Lucas
1830 E. Monument St.
Room 421
Baltimore, MD 21287
Phone: 410-614-0560
Email: glucas@jhmi.edu

ABSTRACT

Background: Methadone clinics provide settings where DAART may be feasible in HIV-infected drug users (DUs), but there are few data on the potential effectiveness of this approach.

Methods: Since April 2001, DUs who were receiving HIV care and methadone therapy at Johns Hopkins were enrolled in a prospective DAART study. Morning doses of antiretroviral therapy (ART) were supervised in participants (up to seven days a week) and evening doses were pre-packaged and self-administered. Two groups of concurrent comparison patients, who self-administered ART, were randomly selected from the same HIV clinic population as DAART participants: 1) patients with a history of DU who were receiving methadone therapy (DU control), and 2) patients with no history of DU (non-DU control).

Results: To date, 50 patients have been enrolled in DAART: these were matched to 90 DU-control and 146 non-DU control patients. The percent of patients with prior ART exposure (60%), median baseline HIV RNA levels (4.8 log₁₀ c/ml), and median baseline CD4 cell counts (167/mm³) were similar in the groups. Using an intent-to-treat, missing=failure analysis, 58% of DAART participants achieved HIV RNA < 50 c/ml in the first 6 months after starting therapy, compared to 23% of DU-controls and 39% of non-DU controls (P<0.05 for both comparisons with DAART). At 6-12 months, 46% in DAART achieved HIV RNA < 50 c/ml compared to 24% of DU-controls (P<0.05), and 38% of non-DU controls (P=NS). Median increases in CD4 cells at 12 months were similar in the DAART group (60/mm³), DU-control (37/mm³), and non-DU control (54/mm³).

Conclusions: These results suggest that DAART is feasible in a methadone clinic setting and that this strategy leads to improved rates of viral suppression compared to self-administered therapy.

METHODS

In April 2001 we initiated a DAART program at a methadone clinic located near the Johns Hopkins HIV Clinic. HIV-infected patients were eligible to participate if they received HIV care through a Johns Hopkins-affiliated clinic, had received methadone therapy for > 30 days, and were initiating ART for the first time or changing their regimen due to treatment failure. Participants' ART was selected by treating clinicians. Medications were prepackaged and labeled in single-dose units by a participating pharmacy. Morning doses of ART were supervised in the methadone clinic and evening and weekend doses were self-administered.

To assess the effectiveness of the DAART intervention, two comparison groups of HIV-infected individuals, who were initiating or changing antiretroviral therapy, were selected from the Johns Hopkins HIV Cohort database: 1) **DU control:** patients with a history of drug use, who were receiving methadone maintenance therapy, 2) **Non-DU control:** patients with no history of drug use. Control patients were frequency matched with the DAART participants on sex and prior antiretroviral experience, and randomly selected from the cohort database in a 2:1 ratio with DAART participants. The proportions of patients achieving suppression of HIV RNA < 50 copies/ml in two time periods (0-6 months and 6-12 months) were compared in the three groups using an intent-to-treat, missing equals failure rule. Patients were included in the 0-6 month and 6-12 month analyses if > 3 months and > 9 months had elapsed since the date antiretroviral therapy was initiated, respectively. Patients were considered to have failed if an HIV RNA level below the specified cutoff was not documented during the specified time frames. An intent-to-treat, last observation carried forward approach was used to compare the changes in CD4+ cell counts in the three groups. Categorical and continuous variables were compared with the Fisher's exact test and the Wilcoxon rank sum test, respectively.

Table 1. Characteristics of DAART participants and randomly selected concurrent comparison patients

Characteristic	DAART	DU control	Non-DU control
Number	50	90	146
Female, %	64	61	38 ^a
African American, %	88	86	72 ^a
Age (years), median (IQR)	42 (37-47)	44 (38-48)	39 (33-44) ^a
Antiretroviral naïve, %	34	46	40
Date antiretroviral therapy initiated or reinitiated, median	May 2002	February 2001 ^a	March 2001 ^a
Baseline log ₁₀ HIV RNA (copies/ml), median (IQR)	4.9 (4.3-5.4)	4.8 (4.3-5.4)	4.6 (2.6-5.3)
Baseline CD4+ count (cells/mm ³), median (IQR)	140 (40-247)	155 (32-280)	192 (52-382)

^a P < 0.05 compared to DAART

Figure 1. Disposition of DAART participants

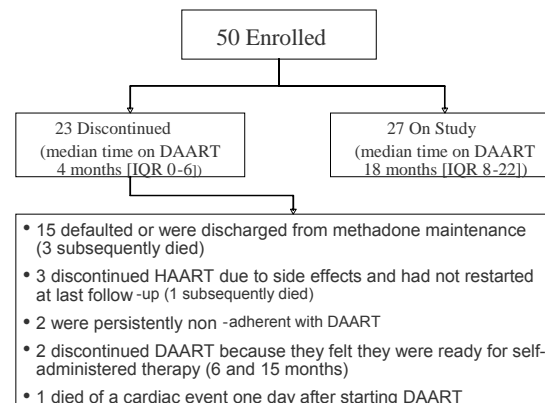


Figure 2. Viral load suppression

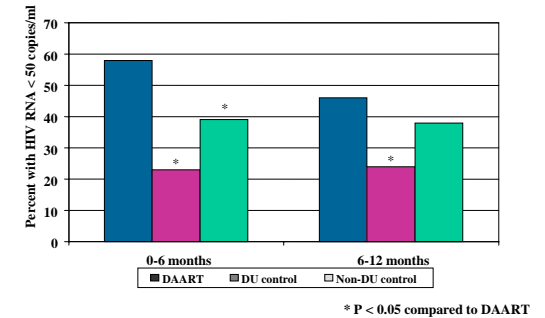
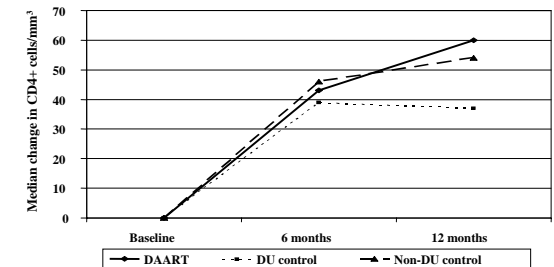


Figure 3. Changes in CD4 cells



CONCLUSIONS

- DAART was well accepted in an urban methadone clinic and was associated with significantly higher rates of viral suppression than that observed in matched control groups from the same treatment center.
- Development of additional DAART strategies and randomized controlled trials are indicated.