Directly Observed versus Self-administered Antiretroviral Therapies: Preference of HIV-Positive Jailed Inmates in San Francisco

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ABSTRACT *Directly observed therapy (DOT) of antiretroviral (ARV) medications has beneficial effects on HIV treatment for incarcerated inmates but has been associated with limited continuation after release and inadvertent disclosure of HIV status. Guided self-administered therapy (g-SAT) may be a preferred method of ARV delivery and may encourage medication-taking behavior. We surveyed the preference of 102 HIV-positive jailed inmates at the San Francisco City and County Jails regarding receiving ARVs via DOT versus g-SAT while incarcerated. Participants overwhelmingly preferred g-SAT over DOT.*

KEYWORDS HIV, AIDS, Directly observed therapy, Self-administered therapy, Jail, Correctional facility

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The incidence and prevalence of HIV/AIDS in correctional facilities is several folds higher than the general population.¹⁻⁶ In jails, HIV-infected individuals pose a significant dilemma to the health care system and are often persons from the local community whose access to medical care has been inconsistent or absent. They may be incarcerated for weeks to months and have high rates of illicit substance or alcohol addiction.^{1,2,7} Due to chronic infections and the effect of incarceration on health status,^{2,5,8-12} they are a target population for whom availability of antiretroviral (ARV) therapy and general medical care is essential. Introduction and continuation of ARV therapy can be offered while a person is incarcerated, but there are many concerns regarding optimal methods to deliver care in order to maximize personal and public health benefits.

Timely delivery of ARVs through directly observed therapy (DOT), where the inmates present themselves to the medical staff at medication dosing times (also known as “pill line” or “pill call”), are handed each dose, and medication-taking may be observed, has been shown to decrease HIV viral replication successfully in incarcerated inmates in some settings.¹³⁻¹⁵ However, there are concerns regarding lack of confidentiality and stigma,¹⁶⁻¹⁹ as well as sustained benefits of DOT after release from correctional facilities, when patients must transition to self-administra-

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tion of medications. Data show that the proportion of those who continue ARVs immediately after release is low,^{16,20–24} which is particularly important, as the post-release period is a time of high-risk behaviors.^{25–30}

The need for long-term and near-perfect ARV adherence is important when exploring optimal routes of medication delivery in jail and prison settings. One approach may be to instruct and educate inmates in self-administration of medications. Guided self-administered therapy (g-SAT), including medication dispensation and frequent one-on-one information sessions, has the potential to reinforce HIV knowledge, establish independence in medication-taking, improve adherence while in jail and after release, and increase trust in the health care system. This method may entail the dispensation of a 1-week ARV supply from the pharmacy to the inmate, ARV placement in pillboxes by the inmate under the supervision of a health professional (e.g., nurse or pharmacist), and simultaneous guidance and education of the inmate by the health professional in an individually tailored manner. These educational sessions may include reviews of ARV names, doses, and frequencies; assessment for ARV adverse effects; estimation of ARV adherence in the past week and review of the contents of the past week's pillbox; importance of adherence and problem-solving around missed or late doses; discussion of plans for picking up discharge prescriptions at the time of release; and need for medical care follow-up and medication refills after release from jail.

The opinion of the inmate regarding the methods of ARV delivery and its impact on current and future ARV adherence is rarely considered. The purpose of this project was to examine the preference and attitude of HIV-infected inmates in the San Francisco Jail regarding the method of ARV delivery while incarcerated.

METHODS

We conducted a cross-sectional study of the baseline data of HIV-positive jailed inmates who were enrolled in a parent randomized controlled trial.³¹ Inmates who were in the San Francisco Jail, were HIV-positive, had a lifetime history of drug/alcohol addiction, were English- or Spanish-speaking adults, and were recommended for and agreed to start ARVs were included in this trial. The study population consisted of a consecutive sample of HIV-positive inmates seen by the San Francisco Department of Public Health's Forensic AIDS Project for HIV/AIDS care between July 2002 and December 2005. Inmates identified as aggressive, requiring special monitoring, and those with unstable mental health status were excluded. The g-SAT method of ARV delivery was initially developed for and used in the parent trial and was modeled after the education implemented in the San Francisco Action Point Program.³² The parent study received approval from the University of California, San Francisco Institutional Review Board in May 2002.

Subjects' preference for the medication delivery method was determined based on a questionnaire that was specifically developed for this patient population. This questionnaire was implemented as part of the baseline data collection survey of the parent randomized controlled trial and included sections to determine preference for DOT versus g-SAT and the impact of the preferred medication delivery method while in and out of jail. Descriptive statistics were used to portray collected data.

RESULTS

One hundred and two participants were asked about their preference for ARV delivery strategies in jail. Their demographics are summarized in Table 1. Responses to three key questions regarding preference for ARV delivery strategies are shown in Table 2. When the participants were asked what they thought would occur if they kept their own ARVs while in jail, 91.2% stated that they would take every dose, 7.8% acknowledged that they would take more than half of the doses, and 1.0% did not respond.

Medication theft and lack of privacy were common reasons for 11 individuals (10.8%) who had a negative response to the usefulness of g-SAT while in jail (Table 2, question 2). From the 86.3% who agreed that g-SAT would be helpful, 40.9% responded that g-SAT would minimize their problems with “pill call” or standing in “pill line” (e.g., sleep interference, privacy issues, inconvenience, food/water requirement concerns, and inability of being self-sufficient). Additionally, 13.0, 19.3, and 34.1% stated that g-SAT would help in improving privacy, supporting pill-taking behavior, and enhancing the convenience of dosing and control over medications, respectively. Of the 67.6% who felt that g-SAT would impact their lives after release (Table 2, question 3), 63.8% felt that g-SAT would assist them in developing a medication-taking routine and result in improved adherence and 30.4% stated that this method would help increase their sense of responsibility.

DISCUSSION

We studied the attitudes of HIV-positive jailed inmates regarding the route of ARV delivery while incarcerated. Given the choice, most inmates prefer g-SAT and indicate adherence self-efficacy when able to self-administer ARVs. The main reasons for endorsing g-SAT were decreasing problems associated with “pill call”, the need to be in control of own medications, and improving privacy. Learning medication-taking behaviors, following specific medication instructions, and the

TABLE 1 Baseline demographics of study patients

Characteristics	N= 102
Mean age, years (SD)	41.4 (8.1)
Male, <i>n</i> (%)	96 (94.1)
Race, <i>n</i> (%)	
White	36 (35.3)
Black	44 (43.1)
Other	22 (21.6)
Years of school completed, <i>n</i> (%)	
Less than high school	27 (26.5)
High school or greater	75 (73.6)
No health insurance, <i>n</i> (%)	32 (31.4)
Ever homeless since 18 years of age, <i>n</i> (%)	79 (77.5)
Housing, <i>n</i> (%)	
Own home or someone else's home	52 (51.0)
Hotel	28 (27.5)
Shelter or on the street	16 (15.7)
Other	6 (5.9)

TABLE 2 Summary of baseline medication delivery preference questionnaire (N=102)

Questions	Yes (%)	No (%)	No response (%)
1. Do you like the idea of being able to keep medicines with you instead of going to pill call every day in the San Francisco City and County Jail?	92.2	6.9	1.0
2. Do you think it would help you in any way, here in jail, to keep the antiretrovirals with you?	86.3	10.8	2.9
3. Do you think it may have any impact in your life, once you are released from jail, if you are able to keep the antiretrovirals with you while in jail?	67.6	29.4	2.9

establishment of a medication-taking routine were important rationale in favor of g-SAT's potential for improving ARV adherence while incarcerated and after release from jail.

HIV treatment with ARV therapy can substantially decrease morbidity and mortality and reduce the rate of HIV transmission.^{33–40} Approximately 16.9% of all HIV-positive individuals are in the U.S. criminal justice system⁴¹; therefore, interventions that improve ARV uptake, as well as ARV adherence and persistence after release from jails and prisons have the potential to curtail the HIV epidemic by decreasing HIV transmission to others. This is particularly relevant given the deleterious effect of short-term incarceration and release on virologic outcomes^{42–44} and the high frequency of self-reported HIV-related risky behaviors of newly released HIV-positive inmates.^{25–30}

The dilemma facing providers in correctional facilities is how to best deliver therapies. An objection to starting chronic treatments in these facilities is that rates of treatment continuation after release are low.^{16,20–24} According to the US Department of Health and Human Services guidelines: “interventions that have been successful include those focused on the patient”⁴⁵ and based on the World Health Organization “adherence interventions should be tailored to the needs of the patient in order to achieve maximum impact”.⁴⁶ Therefore, because one of the goals of HIV treatment is to prevent HIV transmission, “providers and patients must work together to define individualized strategies to achieve treatment goals.”⁴⁵ Given the public health impact of HIV treatment, the tailoring of ARV regimens and ARV method of delivery is especially critical among the incarcerated population.

The presence of chronic disease, increasing length of stay, and concerns about the effects of incarceration on health underscore the need for good primary care in correctional settings.^{2,8,9,47} Due to the increased duration of incarceration, it is necessary to offer adequate therapies for acute and chronic diseases. While increased efforts are being made to facilitate discharge planning, continuation of medical care after release continues to be challenging.^{9,20,48} Problems such as gaps in case management and quality medical care after release,^{8,20,49} lack of insufficient mental illness treatment,⁵⁰ and poor access to drug/alcohol treatment programs^{51,52} make it difficult for these individuals to remain on HIV treatment.

Life-long ARV adherence and persistence is difficult for all HIV-positive individuals, especially for those with a history of drug and alcohol use,^{53–56} homelessness,⁵⁷ mental illness,⁵⁶ and other comorbidities. Small reductions in ARV adherence may result in loss of virologic control and subsequent treatment failure, drug resistance, and HIV transmission.^{58–61} Therefore, it is important to identify

individually tailored medication delivery strategies that allow those incarcerated to choose what method works best for them and help them learn behaviors that can be started while in the structured environment of a jail. We believe future research should further examine the efficacy of g-SAT or other ARV delivery methods that can increase HIV treatment knowledge, motivation, and behavioral skills of inmates and have the potential to result in higher probability of treatment adherence, persistence, and engagement in care after release.

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