

Acceptance of HIV Pre-Exposure Prophylaxis (PrEP) Program at STD Clinic

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Daily pre-exposure prophylaxis (PrEP) is highly effective in reducing risk of HIV infection from sex and drug injection, yet utilization remains low due to lack of knowledge among patients and providers, as well as access. HIV PrEP program was initiated at a sexually transmitted diseases (STD) clinic. 85 patients were enrolled at the STD program run by a local department of health over an 18-month period. Majority of patients were uninsured or on public assistance. Average duration of treatment was 9 months. Two individuals HIV seroconverted during the observation period. Overall, HIV PrEP was well accepted in a high-risk STD Clinic population. There continues to be need for greater public awareness to effectively implement PrEP along with other prevention strategies to reduce HIV infection in a real world setting.

Keywords: HIV PrEP, sexually transmitted infections, prophylaxis, risk-reduction strategies

Introduction

Since the first clinical identification of HIV infection in 1981, approximately 35 million people have died from AIDS-related illnesses. There are currently 34.5 million people living with HIV including 1.9 million new infections annually [1,2]. HIV prevention strategies such as behavioral modifications, risk reduction, have demonstrated only limited success [3]. Pre-exposure prophylaxis (PrEP) using a single-pill, combination antiretroviral medications have shown to reduce the risk of HIV transmission by greater than 90% [4-6].

Risk factors for HIV transmission overlap with other sexually-transmitted infections such as syphilis, gonorrhea and herpes. Studies have shown higher rates of HIV infection in individuals with prior STDs [7]. High-risk activities include anal, vaginal, or oral sex without condoms; having multiple sex partners; having anonymous sex partners; and having sex while under the influence of drugs or alcohol. Substance abuse especially using intravenous drugs is another significant risk factor for acquiring HIV infection. When used as prescribed, PrEP is >70% effective in reducing risk acquired through injection drug use [8]. Consequently, the STD Clinic is an ideal clinic setting to promote preventative options against HIV, as well as other sexually transmitted infections.

Materials and Methods

Total of 85 patients were enrolled in HIV PrEP at a Department of Health STD clinic in Paterson, New Jersey over an 18-month period. Candidates were offered prophylaxis during STD screening visits; others were referred through advertisement in physicians' offices, clinics, community organizations and substance abuse treatment

programs. During initial screening visits, patients underwent laboratory test monitoring, risk-reduction counseling and free condoms. Detailed sexual history and substance abuse history was obtained to assess risk factors for HIV infection. Medical history including mental health evaluation was also obtained to determine risk for potential side effects of treatment such as underlying renal disease, hepatitis B and osteoporosis. Medications (tenofovir disoproxil fumarate/emtricitabine or TDF-FTC) were provided by a grant through the drug manufacturer for those lacking prescription coverage. Patients had repeat laboratory testing including HIV screening every three months. During follow-up appointments, patient's adherence and ongoing risk factors were also addressed.

Results

During an 18-month period, 85 patients were enrolled: 56-males, 25-females and 4-transgender (male to female). Age range was 20-59 (median 32); 45%-Hispanic, 36%-African American, 18%-Caucasian, 1%-Asian. Reported risk factors included: sex-50%, injection drugs-15%, both-35%. Men who have sex men (MSM) accounted for 45% of total sex-related risk factors. Number of sex partners ranged from 1 to 30 (median-3) over a 12-month period prior to enrollment. Nine patients (11%) reported actively engaging in sex with HIV positive partners. Majority of patients (78%) were on public assistance or uninsured. Two individuals HIV seroconverted (3%). 70 (82%) patients remained on PrEP for >12 months. Dropout rate was 5% (n=4). The most common side reported side effect was mild gastrointestinal symptoms (<4%). No laboratory abnormalities were noted on follow-up testing. Most common reasons for dropout were medication non-compliance and lack of ongoing risk factors.

Discussion

Efficacy of HIV PrEP in reducing HIV transmission has been well established in high-risk populations such as men who have

sex with men (MSM), heterosexual men and women engaging unprotected sex with partners who are HIV infected or at high risk for HIV, and injection drug abusers [4-8]. The optimal setting for implementation of these strategies and the obstacles they incur are less well understood in a real world setting.

STD clinic setting is a practical setting for a successful HIV PrEP program due to pre-existing resources for diagnostic and therapeutic intervention of sexually transmitted infection, availability of counselors and clinical expertise. Patients were counseled regarding the importance of proper adherence to achieve adequate drug concentrations. We emphasized the importance of risk reduction strategies such as proper condom use in addition to using PrEP to lower risk of acquiring other sexually transmitted infections. Injection drug users were also educated about safe injection practices and referral made to substance abuse treatment programs. Enrollment for HIV PrEP was initially offered to high-risk candidates attending the STD clinic. But soon afterwards, many referrals were received through primary care providers, emergency departments, substance abuse treatment programs, and community organizations, reflecting a significant unmet need for HIV PrEP services.

Although the STD clinic could be an effective option for many patients seeking PrEP, some individuals may be reluctant to attend a STD clinic due to stigma or confidentiality concerns. Discrimination and stigma associated with HIV/AIDS has always posed a barrier to proper treatment and care in both the past and present. Majority of patients who were referred from outside facilities reported that their medical care providers either lacked the knowledge or the desire to prescribe HIV PrEP. Others were similarly reluctant to ask about PrEP with their primary care providers due to embarrassment or shame. But the feedback we received was uniformly positive. They expressed high satisfaction about receiving PrEP in an accessible and non-judgmental setting. The convenience of receiving prophylaxis, HIV education/counseling, and general STD management under one location was the greatest draw for the majority of enrollees.

One concern against the use of PrEP is that it may increase high-risk behaviors. Studies have demonstrated that many patients receiving PrEP continue to engage in unprotected sex and consequently contract bacterial STDs [9,10]. In our cohort, none of the patients tested positive for other viral or bacterial STDs. Moreover, on follow-up interviews, many patients reported decreased number of sexual partners since starting PrEP. Despite these promising findings, the authors recognize that PrEP uptake remains low in the U.S and other parts of the world. According to one study, only 3.4% of young men who have sex with men surveyed in the U.S. had ever used PrEP [11].

HIV PrEP will only be effective when used appropriately with good adherence. The two PrEP patients who seroconverted both admitted to suboptimal adherence to PrEP (<10% compliance). Both patients were linked to care for HIV management and started on HAART. Neither patient developed any baseline antiretroviral drug resistance. Studies have shown that in PrEP patient who developed drug resistance, the M184V was the most common mutation to emerge due to the emtricitabine component. The K65R mutation associated with tenofovir was less likely to occur [12]. The best method to prevent resistance is to take PrEP consistently as prescribed. Newer strategies including utilization of HIV PrEP on an "as needed" basis is currently under study.

The two most common potential side effects of TDF/FTC are acute/chronic renal disease and bone mineral density problems. Studies in non-HIV population, the risk of kidney injury in patients taking TDF/FTC was generally low [13]. Risk for reduction in bone density or osteoporosis appear to most prominent during the first six months [14]. Although our sample size was small (n=85), we did not encounter any complications.

Since the era of highly active antiretroviral therapy (HAART), there's been decreasing rates of opportunistic infections and overall reductions in morbidity and mortality. However, the fact remains that patients are still dying from HIV/AIDS or suffering side effects of antiretroviral medications. The best intervention is undoubtedly, prevention. HIV PrEP can be a powerful tool when combined with other prevention methods including condom use and patient education to reduce rates of new HIV infection. The STD clinic is an ideal setting to increase awareness about these important preventative strategies to reduce not only HIV, but other important public health associated infections such as syphilis, gonorrhea, and chlamydia.

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