Feature

Nurse-Led HIV PEP Program Used by Men at High Risk for HIV Seroconversion

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We trialed a nurse-led HIV postexposure prophylaxis (PEP) program in two sexually transmitted infection clinics in Ottawa, Canada. From September 5, 2013 to September 4, 2015, 112 persons sought PEP: 103 were male, of whom 84 were men who have sex with men (MSM). Seventy-two patients (59 MSM) initiated PEP; 11 were diagnosed with HIV: 6 diagnoses occurred during initial assessment (all MSM; 1 also shared injection equipment); 5 MSM were diagnosed with HIV within 1 year of seeking PEP. This level of positivity indicated that, when access is facilitated, individuals at high risk of HIV seek PEP. However, the 8.5% of MSM who seroconverted within a year of taking PEP demonstrated that this group remained at risk and needed additional prevention services. Delivery of PEP should include provision of medication, as well as an opportunity to address individual-level HIV risk strategies and population-level syndemic conditions that contribute to ongoing HIV transmission among MSM.

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The Public Health Agency of Canada (PHAC, 2015) has estimated that, domestically, since 2011, the incidence of HIV has remained stable at about 2,570 cases annually (range = 1,940-3,200), and the proportion of undiagnosed infections has continued to be 21%. Together, these numbers suggest that current HIV prevention efforts–including outreach initiatives, peer-based navigation and support, and intensified testing–have been sufficient to maintain, but not decrease, current rates of HIV transmission and diagnosis. Further work is required.

Accordingly, from September 2013 to September 2015, we sought to enhance local HIV prevention efforts by piloting a community-based nurse-led HIV postexposure prophylaxis (PEP) program in two sexually transmitted infection (STI) clinics. The goal was to increase access to PEP for uninfected persons who had engaged in any sexual or drug-using practice that could transmit HIV with (a) someone known to be infected with HIV or (b) someone whose HIV status was unknown, but was either a man who had sex with men (MSM) or an injection drug user (IDU). We focused on MSM and IDU because, in Ottawa, HIV prevalence in these populations is estimated to be 11% (Milson, Leonard, Remis, Strike, & Challacombe, 2005; PHAC, 2014), with 91% of new HIV diagnoses occurring locally in these groups during 2011-2014 (Friedman, O'Byrne, & Roy, 2017).

While the operational details and results of this project have been published elsewhere

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(O'Byrne, MacPherson, Roy, & Kitson, 2015; O'Byrne, MacPherson, Roy, & Orser, 2017), a noteworthy finding needing further analysis was that 9.8% (n = 11) of the 112 participants who sought PEP were diagnosed with HIV either at intake or within 12 months of using PEP. Herein, these cases are presented and discussed with a focus on what these results tell us about (a) the utility of the PEP program, and (b) ongoing HIV risk assessment and prevention for patients who use PEP. Specifically, our aim was to highlight the characteristics of patients diagnosed with HIV and determine what the data about these characteristics suggested when compared to guidelines about PEP, preexposure prophylaxis (PrEP), and HIV testing.

Background

Cardo and colleagues (1997) undertook a matched case-control study of occupational exposures to HIV and identified an 81% reduction in HIV seroconversion among those who used one antiretroviral medication as PEP. Current guidelines suggest that PEP be given using three-drug combinations (Centers for Disease Control and Prevention [CDC], 2016; Tan et al., 2017), based on the idea that varied pharmaceutical mechanisms of action could yield better prevention outcomes than observed in the Cardo et al. (1997) study. Subsequent research supported PEP efficacy; these data arose from animal model studies, neonatal research, and PrEP trials (Bourry et al., 2009; Grant et al., 2010; Otten et al., 2000; Taha et al., 2003; Wade et al., 1998).

Consequently, PEP is the standard of care in HIV prevention and is available in most emergency departments for patients who present after possible occupational, sexual, or injection drug-use HIV exposure (Bogoch, Scully, & Zachary, 2012; CDC, 2016). Data have highlighted, however, that some people who require PEP may not seek it in emergency departments due to perceptions about wait times, stigma, and/or provider knowledge (Heck, Sell, & Gorin, 2006; McFaul, Rowley, O'Reilly, & Clarke, 2015; Rutland, Sundaram, & Mani, 2010). Thus, while effective and available, PEP is not always used by those who require it.

Methods

Project Overview

We trialed a nurse-led PEP program in two STI clinics in Ottawa, Canada. Our question was not if PEP worked, but rather, if people who required PEP would seek it in a timely manner if the intervention were available in the community. We provide a brief overview here to situate the new findings (For more details, see O'Byrne et al., 2015, 2017).

Operationally, we trained registered nurses to initiate PEP, with one assigned to be on call during all clinic hours (Monday/Wednesday/Friday, 9 am to 5 pm, and Tuesday/Thursday, 9 am to 8 pm). If a patient presented for PEP or was identified as eligible for PEP by clinic staff during these hours, the PEP nurse was paged and assumed care. This nurse ensured that the potential exposure of concern occurred within the preceding 72 hours, was of significant risk (by risk of transmission and possibility of serodiscordance), and that the patient was likely uninfected with HIV. HIV-uninfected status was established as best as possible by assessing for the nonspecific symptoms of HIV seroconversion (e.g., fever, night sweats, rash, myalgia, arthralgia, diarrhea), and an HIV point-of-care (POC) test (CDC, 2014). Blood was also drawn for HIV serology by a fourth-generation antigen/antibody combo screen, which is the standard diagnostic HIV test used at our sites.

The fourth-generation HIV assay screens for HIV-1 p24 antigen, as well as antibodies to HIV-1/HIV-2 (Alexander, 2016; Public Health Ontario [PHO], 2016), and yields a sensitivity greater than 99.8% and specificity of 95% (Alexander, 2016). Following seroconversion, p24 antigen can be detected by 14 days after HIV acquisition, and HIV antibodies can be detected within 4 to 6 weeks (Alexander, 2016). HIV PCR was not used due to a longer result processing time (10-14 days versus 3-6 days for fourth-generation testing; PHO, 2016; 2017), higher rates of false-positive results with lower HIV viral loads, and the unavailability of this test at our clinical sites. In Ontario, PCR testing is licensed only for HIV treatment monitoring, not diagnosis.

Provided there were no contraindications to PEP, the nurse administered one daily fixed-dose single