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Prophylactic Treatment For HIV Does Not Lead To Risky Sexual Behavior

Receipt of HIV preexposure prophylaxis (PrEP) is not associated with an increase in sexual risk behaviors, suggests an international randomized trial among men who have sex with men or who identify as transgender or female.[1] Participants had reductions from baseline in levels of both acute HIV infection and syphilis infection. Those who believed that they were receiving PrEP instead of pla-

cebo had neither an increase in receptive anal intercourse without a condom while on study medication nor a decrease in this behavior after stopping it. Moreover, placebo recipients who believed that they were receiving PrEP did not have any rise in HIV infection relative to peers who believed that they were receiving placebo; the finding was the same if they also believed that PrEP was highly effective.

Researchers analyzed data from the Preexposure Prophylaxis Initiative (iPrEx) trial, which enrolled men who have sex with men or who identify as transgender or female at 11 sites in Peru, Ecuador, South Africa, Brazil, Thailand and the United States in 2007–2009. Participants were assigned to once-daily oral PrEP (emtricitabine plus tenofovir) or placebo on a double-blind basis. At various intervals, they were counseled about risk reduction, were screened for HIV and syphilis, completed questionnaires pertaining to sexual risk behaviors in the past three months, and indicated which treatment group they believed they had been assigned to and how effective they thought PrEP was at preventing HIV. Treatment lasted nearly three years; the final study visit took place eight weeks after participants had stopped taking their medication. The investigators used Poisson regression, t tests and chi-square tests to assess and compare temporal trends in sexual behaviors and infection rates, and developed mixed log-binomial regression models to identify correlates of changes in behavior from baseline.

Analyses were based on 2,408 participants who completed at least one quarterly study visit during which they reported on sexual behavior. All were male at birth, but 13% identified as women or transgender. They were 25 years old, on average, and three-fourths had been tested for HIV prior to the study.

At baseline, 0.4% of participants had acute HIV infection and 6% had syphilis. At the end of the treatment period, the incidence of acute HIV infection had fallen to 0.06% in the PrEP group and to 0.1% in the placebo group; the incidence of syphilis had dropped to zero in each group.

At the first quarterly study visit, 25% of participants believed they were in the PrEP group, 10% believed they were in the placebo group and the rest said that they did not know their group assignment. Overall, 24% believed that PrEP was highly effective. Eight weeks after participants discontinued their medication, no association was apparent between perceived treatment assignment and changes in the number of partners with whom participants had recently had receptive anal intercourse: The number fell both among those who believed that they had been receiving PrEP (from 13 to four) and among those who believed that they had been receiving placebo (from eight to two).

At baseline, 39% of participants reported that they had not recently had receptive anal intercourse without a condom. Within this subset, the likelihood of reporting this risk behavior at any time during follow-up was elevated for participants who were younger than 25 (risk ratio, 1.3), identified as transgender or female (1.7), or had symptoms of depression (1.6). In contrast, these participants had a reduced risk of reporting unprotected receptive anal intercourse during follow-up if they had never been tested for HIV before starting the study (0.7). Notably, the risk of unprotected receptive anal intercourse was not associated with the belief that one was receiving PrEP or that PrEP was highly effective.

Among the 58% of participants who reported recent unprotected receptive anal intercourse at baseline, the likelihood of not reporting this behavior during follow-up was reduced for those who were younger than 25 (risk ratio, 0.8), identified as transgender or female (0.8), or had symptoms of depression (0.7); it was increased for those who had never been tested for HIV (1.4). Again, the behavior was not related to perceived treatment group or perceived effectiveness of PrEP.

Among participants who provided behavioral data both when they stopped using the study drug and eight weeks later, the proportion who reported receptive anal intercourse without a condom declined from 26% to 23% during that interval. Participants who believed they were receiving PrEP were no more likely than others to show a change in this behavior; moreover, findings were similar for the subset who believed PrEP is highly effective.

In the placebo arm, the incidence of HIV infection during follow-up was not elevated for participants who believed they were receiving PrEP, who believed that it was highly effective or who held both beliefs. In the entire trial population, the incidence of syphilis during follow-up did not differ by perceived treatment group.

Study limitations include potential lack of generalizability to clinical settings and reliance on self-reported sexual practices, according to the investigators; also, the results may have been influenced by treatment adherence, and the trend toward safer behaviors may have reflected regression toward the mean or greater loss to follow-up of participants having risk behaviors. Nevertheless, the researchers note, the study's results show "no evidence of risk compensation that would offset the benefits of PrEP"; if anything, they suggest, the findings indicate trends toward safer sexual behavior and a reduction in HIV and syphilis infections. "Frequent clinic visits, HIV testing and counseling, and daily PrEP use itself may motivate and popularize safer sexual practices. Social interactions may be more important determinants of sexual decisions than individual weighing of risks and benefits," they conclude. *—S. London*

REFERENCE

1. Marcus JL et al., No evidence of sexual risk compensation in the iPrEx trial of daily oral HIV preexposure prophylaxis, *PLoS ONE*, 2013, 8(12): e81997, accessed Jan. 2, 2014.