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Use of pre-exposure prophylaxis increases the odds of condomless anal sex among young men who have sex with men (MSM) of colour

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Abstract

This study tested the hypothesis that people using pre-exposure prophylaxis (PrEP) would be more likely to report condomless anal sex than those not taking PrEP. Data were from an ongoing study conducted with a cohort of Black and Latino young men who have sex with men (YMSM) recruited in Los Angeles (CA, USA). Of the 399 YMSM in the sample, 14% were currently using PrEP. Using three different measures of condom use, across two different recall periods all except one test result supported an inverse relationship between PrEP and condom use for anal sex. Tests of a risk index provided further significant findings supporting this hypothesis.

Additional keywords:

condom displacement; public health; sexually transmissible infections

Introduction

Although pre-exposure prophylaxis (PrEP) is now the mainstay of HIV prevention,^{1,2} recent and unprecedented rates of sexually transmissible infections (STIs) continue to raise the possible occurrence of condom displacement (i.e. abandoning condom use in lieu of the protection from PrEP).^{3–6} This occurrence may be especially problematic in populations of high STI prevalence, thus making even occasional lapses in condom use opportune for transmitting chlamydia, gonorrhoea and syphilis. In the US, only scant evidence exists

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Conflicts of interest

The authors have no conflicts of interest to declare.

relative to whether condom displacement may occur.^{7,8} Studies have yet to focus specifically on the population most at risk of HIV and STIs, namely young men of colour who have sex with men.² Accordingly, within that population, this study tested the hypothesis that people using PrEP would be more likely to report condomless anal sex than those not taking PrEP.

Methods

Data were from an ongoing study conducted with a cohort of Black and Latino young men who have sex with men (YMSM) recruited in Los Angeles, California (USA). Eligibility criteria were age 16–24 years, male sex at birth, self-identified as gay, bisexual or uncertain, reporting sex with males in the previous 12 months and Black/African American, Latino or multiethnic/ racial. The Children's Hospital Los Angeles' Institutional Review Board approved the study protocol. For this secondary analysis, 399 in the cohort were HIV negative and served as the subsample.

To optimally test the hypothesis, four measures were used. Three were binary and assessed any condomless anal receptive sex, anal insertive sex and both combined. The fourth measure was a hierarchy of risk practices, ranging from no condomless anal sex, to condomless anal insertive sex only, to condomless anal receptive sex only, to both forms of condomless sex. Measures were taken using 6-month and 30-day recall periods, with the 30-day period being the most recent 30 days when participants completed the questionnaire.

Results

Of the 399 study participants, most identified as non-Black Hispanic (60.4%), with 19.3% identifying as Black and the remainder identifying as mixed race/ethnicity. Fifty-six participants (14.0%) were currently taking PrEP.

Findings for the six binary measures are given in Table 1, with the number reporting the risk behaviour, the percentage of those taking and not taking PrEP who reported the risk behaviour, prevalence ratios, 95% confidence intervals and P-values given. As indicated in Table 1, with only one exception, each measure was clearly significant in support of the study hypothesis. The exception was the 30-day measure of condomless anal receptive sex, with values falling just shy of significance.

Regarding the fourth measure, results from t-tests (not shown in Table 1) further support the hypothesis. For the 6-month hierarchy of risk, the mean was 3.17 among those taking PrEP versus 2.62 among those not taking PrEP. The t-value was 3.21 ($df = 389$; $p = 0.002$). For the 30-day measure the mean was 2.78 among those taking PrEP versus 2.39 among those not taking PrEP. The t-value was 2.15 ($df = 358$; $p = 0.03$).

Discussion

Using multiple measures, across two different recall periods, the weight of evidence clearly supports the hypothesis that YMSM of colour taking PrEP are more likely to engage in condomless anal sex. This is particularly important relative to receptive anal sex, because rectal STIs may be more likely to go undiagnosed compared with urethral infections.²

Although this is only a single study from one US city, the clear and rapid spikes in national STI rates among men who have sex with men (MSM) suggest that our findings are emblematic of PrEP-related condom displacement occurring for MSM throughout the US. Prospective studies of high-risk MSM are needed to definitively establish the causal relationships suggested here. This suggests that the lack of evidence-based counselling programs regarding condom use while using PrEP² is a shortcoming of the movement to end AIDS using this biomedical intervention approach.⁵ To fully respond to the looming AIDS crisis for YMSM of colour,² the development and testing of evidence-based condom promotion counselling programs that can be implemented as part of a PrEP-based prevention system should be a national priority.

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Table 1.

Associations between pre-exposure prophylaxis (PrEP) use and condomless anal sex among young men who have sex with men

Measure of anal sex	Using PrEP (<i>n</i> = 56)	Not using PrEP (<i>n</i> = 343)	PR 95% CI	<i>P</i> -value
6-month measures of sex				
Any condomless anal receptive	69.6 (39)	55.4 (190)	1.26 (1.07–1.59)	0.02
Any condomless anal insertive	78.6 (44)	52.2 (179)	1.51 (1.27–1.78)	<0.001
Any condomless anal	80.4 (45)	59.2 (202)	1.36 (1.16–1.59)	0.002
30-day measures of sex				
Any condomless anal receptive	53.6 (30)	41.1 (141)	1.30 (0.99–1.71)	0.08
Any condomless anal insertive	71.4 (40)	41.7 (143)	1.71 (1.39–2.11)	<0.001
Any condomless anal	91.1 (51)	55.1 (189)	1.65 (1.46–1.87)	<0.001

Unless indicated otherwise, data are given as % (*n*). PR, prevalence ratio; CI, confidence interval