High interest in doxycycline for sexually transmitted infection (STI) post-exposure prophylaxis in a multi-city survey of men having sex with men (MSM) using a social networking app

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Introduction

• STI incidence is increasing in HIV-negative men who sex with men (MSM) and people living with HIV (PLWH)

• Doxycycline post-exposure prophylaxis was effective for chlamydia and syphilis, but not gonorrhea, in a pilot study in France

• Acceptability in broader, diverse populations of MSM is unknown

Objectives

1) Measure acceptability of doxycycline-PEP in a diverse population of MSM using a social networking app

2) Characterize factors associated with doxycycline-PEP interest

3) Characterize factors associated with reported STI

Methods

• Anonymous, online survey of users of a gay-social networking app in two 24 hour periods of April 2018 in 6 U.S. cities: Atlanta, Birmingham, Chicago, New York, San Francisco, and Seattle

• Participants were recruited by broadcast message, which appeared when opening the app

• The intervention was described as: a pill that was effective in preventing chlamydia, and syphilis, but not gonorrhea, and would need to be taken every time after sex

• On second survey distribution, respondents were asked if they would be interested in participating in a trial for doxycycline-PEP if there were a 50% chance of placebo exposure

• We used multivariable logistic regression to examine factors associated with doxycycline-PEP interest and also with reported STI in the last year

Results

• Of 5,827 individuals who clicked on the ad, 23% completed the survey

Key Findings:

1. 84% were interested in trying doxycycline for STI PEP

2. In the second day of the survey, 86% reported interest in participating in a trial even with a 50% chance of placebo

Table: Factors associated with interest in doxycycline for STI post-exposure prophylaxis (doxycycline-PEP) and reported sexually-transmitted infection (STI) in the last year (N=1,301)1

<table>
<thead>
<tr>
<th>Age, median [inter-quartile range (IQR)]</th>
<th>Overall (N=1,301)</th>
<th>AOR for doxycycline-PEP interest (95% Confidence Interval)</th>
<th>AOR for STI (95% Confidence Interval)</th>
</tr>
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<td>AOR for STI (95% Confidence Interval)</td>
</tr>
<tr>
<td>34 (28-44)</td>
<td>1.11 (0.97-1.29)2</td>
<td>0.81 (0.72-0.91)2</td>
<td></td>
</tr>
</tbody>
</table>

Race/ethnicity: White

<table>
<thead>
<tr>
<th>Race/ethnicity</th>
<th>Percentage</th>
<th>AOR (95% CI)</th>
<th>AOR (95% CI)</th>
</tr>
</thead>
<tbody>
<tr>
<td>African-American</td>
<td>16%</td>
<td>1.83 (1.08-3.11)</td>
<td>1.34 (0.91-1.96)</td>
</tr>
<tr>
<td>Asian</td>
<td>6%</td>
<td>1.09 (0.57-2.09)</td>
<td>1.22 (0.88-1.68)</td>
</tr>
<tr>
<td>Latino</td>
<td>25%</td>
<td>1.74 (1.14-2.63)</td>
<td>1.72 (0.96-3.06)</td>
</tr>
<tr>
<td>Multiple/Other</td>
<td>7%</td>
<td>0.90 (0.59-1.42)</td>
<td>0.77 (0.45-1.32)</td>
</tr>
</tbody>
</table>

Group: People Living with HIV (PLWH)

<table>
<thead>
<tr>
<th>Group</th>
<th>Percentage</th>
<th>AOR (95% CI)</th>
<th>AOR (95% CI)</th>
</tr>
</thead>
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<tr>
<td>HIV-uninfected on PrEP</td>
<td>37%</td>
<td>0.86 (0.51-1.46)</td>
<td>0.82 (0.57-1.18)</td>
</tr>
<tr>
<td>HIV-uninfected not on PrEP</td>
<td>47%</td>
<td>0.69 (0.52-1.00)</td>
<td>0.22 (0.15-0.32)</td>
</tr>
</tbody>
</table>

Conclusions

• Our findings have limited generalizability to those not using app and not taking survey

• Stated interest may not correlate with actual recruitment into a trial or intervention

• Higher interest in African-American and Latinx respondents may be related to disproportionate impact of STI epidemic; could support uptake in populations who will benefit most

• Our study suggests that a larger placebo-controlled trial would be welcomed by populations at high risk of STIs

• Effectiveness in diverse populations and impact on drug resistance should be studied

Limitations

• African-American and Latinx respondents expressed higher interest in doxycycline-PEP (vs. Whites)

• Reporting condomless sex and having had a prior bacterial STI was associated with doxycycline-PEP interest

• Interest did not differ when comparing PLWH, PrEP users, and PrEP non-users (heterogeneity p=0.9)

• Higher reported bacterial STI: associated with number of partners, any condomless sex in the last 6 months

• Lower reported bacterial STI: greater age per ten years, non-PrEP users vs. PLWH and PrEP users

• No difference in reported STI when comparing PrEP users and PLWH

1Models also adjusted for respondent's city 2Scaled per 10 years 3Scaled per 5 partners