Comparison of Sexual Risk Behaviors Among HIV Positive Men Who Have Sex with Men and Transgender women before and after their diagnosis.

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BACKGROUND

- The HIV epidemic in Latin America is concentrated in sub-populations, especially men who have sex with men (MSM) and transgender women (TW)1,2.
- In Peru, as of May 2015, Ministry of Health reported 57,951 HIV cases since the start of the epidemic. In the most recent report from 2015, 335 new cases have been reported3.
- HIV incidence among MSM and TW has reached high and some of these are the key populations in Peru. Reasons attributed to the sustained HIV incidence among MSM/TW include multiple sex partners, frequent unprotected anal sex, and substance use5,4,6,7.
- An increase in reported cases of syphilis and other STIs also contribute to the incidence of HIV8,9. Unknown HIV infection status and delayed treatment initiation among people living with HIV (PHLV) contribute to ongoing HIV transmission9,10.
- About 70% of HIV positive MSM/TW in Peru are unaware of their HIV status10. A better understanding of sexual risk among people with HIV can help guide HIV prevention strategies.

METHODS

- A cohort of 401 high-risk MSM and TW were recruited at 2 STI clinics and enrolled if they were eligible based on previous HIV/STI infection and sexual risk behavior. Once enrolled they were assessed every three months for condomless sex and sexually transmitted infections:
  - Syphilis: 3rd gen rapid test (Determine™ syphilis Alere) RPR test (BD MacroVue™ RPR Card Test Kit), TPPA test (Fujirebio Diagnostics Inc).
  - HIV: 3rd gen rapid test (Determine™ HIV 1/2 Alere), 4th gen EIA (Genscreen™ ULTRA HIV Ag, Ab, Bio-Rad), WB test (NEW LAV BLOT I, Bio-Rad).
  - Anal chlamydia: Transcription Mediated Amplification (TMA) assay (Aptima Combo Assay).
  - Anal gonorrhea: Transcription Mediated Amplification (TMA) assay (Aptima Combo Assay).
- We compared risk behaviors and anal chlamydia and/or gonorrhea based on:
  - Prior knowledge of HIV serostatus at baseline.
  - Before vs. after HIV diagnosis among those who seroconverted during follow-up, using McNemar’s Chi-square test.

RESULTS

- At baseline, 124/401 (31%) were HIV positive based on laboratory diagnosis testing.
- Among these, 82 (20.5%) participants self-identified as HIV positive and an additional 42 (10.5%) were diagnosed with HIV at baseline.
- Among those with known infection, only 45% reported receiving ART.
- HIV incidence during the follow-up was 9.8 cases per 100 person years.
- Sero-conversion was associated with reporting unprotected receptive anal sex (Fig. 1)

Comparing those with known and unknown infection at baseline:

- Among the 42 unknown HIV positives, 71% reported recent condomless receptive anal sex compared to 55% of known HIV positives in the last three months (p-value=0.08).
- No difference was observed in condomless receptive anal intercourse.
- No difference was observed between the number of sexual partners in the last 3 months, has a median of 5 in each group.
- Among the unknown HIV positives:
  - 12% reported drinking to intoxication compared to 9% of known HIV positives at last sex (p-value=0.04).
  - 17% reported Syphilis infection compared to 24% of known HIV positives (p-value=0.001).

Comparing those who sero-converted during follow-up:

- Among the 32 sero-converters during follow-up, all of the reported sexual risk behaviors significantly decreased post-diagnosis.
- Anal gonorrhea and/or chlamydia were diagnosed among 47% prior and 68% after diagnosis among the observed sero-converters (p-value=0.18).

TABLE 2: Reported behavior among the participants with incident HIV infection before and after diagnosis

<table>
<thead>
<tr>
<th></th>
<th>Pre-HIV Diagnosis</th>
<th>Post-HIV Diagnosis</th>
<th>p-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Last sex</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Condomless receptive anal intercourse</td>
<td>59%</td>
<td>18%</td>
<td>&lt;0.01</td>
</tr>
<tr>
<td>Condomless insertive anal intercourse</td>
<td>19%</td>
<td>14%</td>
<td>0.38</td>
</tr>
<tr>
<td>Drug use</td>
<td>19%</td>
<td>0%</td>
<td>0.13</td>
</tr>
<tr>
<td>Last 3 months</td>
<td>Condomless receptive anal intercourse</td>
<td>78%</td>
<td>32%</td>
</tr>
<tr>
<td>Condomless insertive anal intercourse</td>
<td>31%</td>
<td>9%</td>
<td>0.04</td>
</tr>
<tr>
<td>Marijuana use</td>
<td>38%</td>
<td>22%</td>
<td>0.07</td>
</tr>
<tr>
<td>Cocaine use</td>
<td>25%</td>
<td>3%</td>
<td>0.04</td>
</tr>
<tr>
<td>No. Sex partners, median (IQR)</td>
<td>0.5 (0-5)</td>
<td>0 (0-0)</td>
<td>-</td>
</tr>
<tr>
<td>1+ male sex partner, 3 months</td>
<td>50%</td>
<td>14%</td>
<td>0.01</td>
</tr>
</tbody>
</table>

STIs

- Anal GC/CT | 47% | 68% | 0.18 |

DISCUSSION

- Despite the reported decreases in sexual risk behavior, more participants with incident HIV were diagnosed with anal STIs after sero-conversion.
- This is cause for concern.
  - In Peru, entrance into care takes time and few of those diagnosed would already be receiving ART.
  - Measurement is an issue, given laws against ‘knowingly’ infecting others and potential for biased reporting of risk behavior.
  - In the baseline comparison, while condomless insertive anal sex was similar between participants with known vs. unknown HIV infection, 45% is high given the chance to transmit HIV.
  - Our results lead to several gaps in existing prevention and care programs for MSM/TW in Peru.
    - There is evidence of continuing HIV transmission within this population (high incidence and biological evidence of sexual risk behavior post diagnosis).
    - Less than half of the known HIV positives at baseline were receiving ART. Additionally, reported times to enroll in the existing care program have been long.
    - Improved prevention is needed for PLHIV and MSM/TW in Peru.

TABLE 1: Reported behavior among participants by HIV infection knowledge and status

<table>
<thead>
<tr>
<th>HIV Status</th>
<th>HIV Negative (n=274)</th>
<th>Unknown HIV Positive (n=42)</th>
<th>Known HIV Positive (n=82)</th>
<th>p-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Last sex</td>
<td>Condomless receptive anal intercourse</td>
<td>30%</td>
<td>48%</td>
<td>38%</td>
</tr>
<tr>
<td>Condomless insertive anal intercourse</td>
<td>28%</td>
<td>26%</td>
<td>26%</td>
<td>0.94</td>
</tr>
<tr>
<td>Drug use</td>
<td>21%</td>
<td>12%</td>
<td>9%</td>
<td>0.04</td>
</tr>
<tr>
<td>Last 3 months</td>
<td>Condomless receptive anal intercourse</td>
<td>50%</td>
<td>71%</td>
<td>55%</td>
</tr>
<tr>
<td>Condomless insertive anal intercourse</td>
<td>50%</td>
<td>44%</td>
<td>45%</td>
<td>0.67</td>
</tr>
<tr>
<td>Alcohol use disorder (Audit &gt;8)</td>
<td>49%</td>
<td>48%</td>
<td>33%</td>
<td>0.04</td>
</tr>
<tr>
<td>Marijuana use</td>
<td>12%</td>
<td>7%</td>
<td>6%</td>
<td>0.24</td>
</tr>
<tr>
<td>Cocaine use</td>
<td>15%</td>
<td>10%</td>
<td>10%</td>
<td>0.37</td>
</tr>
<tr>
<td>No. Sex partners, median (IQR)</td>
<td>5 (2-10)</td>
<td>5 (1-12)</td>
<td>4 (2-12)</td>
<td>0.46</td>
</tr>
<tr>
<td>STIs</td>
<td>Anal GC/CT</td>
<td>20%</td>
<td>31%</td>
<td>21%</td>
</tr>
<tr>
<td>Syphilis infection</td>
<td>11%</td>
<td>17%</td>
<td>24%</td>
<td>0.01</td>
</tr>
</tbody>
</table>

p-values were calculated for the overall 3 group comparison.

BIBLIOGRAPHY

1. UNODC / UMS. Situación e la epidemia de SIDA, Diciembre de 2014. www.unodc.org.pe

CONTACT & ACKNOWLEDGEMENTS

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