Condomless sex among HIV-diagnosed men who have sex with men in the UK: prevalence, correlates, and implications for HIV transmission


for the ASTRA study
Background

• HIV transmission is ongoing among MSM in the UK

• Estimated 18% of HIV transmissions originate from HIV-diagnosed MSM

• Extremely low risk of HIV transmission during condomless sex (CLS) with HIV-serodifferent partners (CLS-D) when HIV+ on ART with suppressed viral load: HPTN 052, interim results from PARTNER and Opposites Attract

• CLS-D and ‘high risk sex’ for HIV transmission in the era of effective ART?

• Sexually transmitted infections and seroadaptive practices

Aim

To examine the prevalence of different types of condomless sex (CLS) among HIV-diagnosed MSM in the UK

Objectives

• Describe the prevalence of and factors associated with CLS with higher risk of HIV transmission (incorporating viral load) and other types of CLS

• Assess the prevalence of CLS with risk of HIV transmission according to additional criteria
Methods (1)

- ASTRA study of 3,258 HIV-diagnosed men and women attending 8 HIV outpatient clinics in the UK (2011/12)
- Confidential, self-administered questionnaire
- Clinic-recorded viral load and CD4 count
- 2,189 MSM diagnosed for ≥3 months:
  - Mean age 46 (SD 10) years
  - Median 10 [IQR 5-16] years diagnosed
  - 95% gay, 90% white, 62% employed
  - 87% on ART, of whom 89% had viral load≤50c/mL
Methods (2)

- Condomless anal or vaginal sex (CLS) in the previous 3 months
- Mutually exclusive categories of sexual behaviour in the past 3 months:

<table>
<thead>
<tr>
<th>1. CLS-D higher HIV risk</th>
<th>CLS with HIV-serodifferent partners and not on ART or viral load&gt;50c/mL</th>
</tr>
</thead>
<tbody>
<tr>
<td>2. Other CLS-D</td>
<td>Other CLS with HIV-serodifferent partners (HIV-negative and/or HIV-unknown status)</td>
</tr>
<tr>
<td>3. CLS-C but not CLS-D</td>
<td>CLS with HIV-concordant (other HIV-positive) partners only (no CLS-D partners)</td>
</tr>
<tr>
<td>4. Condom-protected sex</td>
<td>Always used condoms</td>
</tr>
<tr>
<td>5. No anal/vaginal sex</td>
<td></td>
</tr>
</tbody>
</table>

- Other measures: self-reported STIs, recreational drugs, partner numbers, group sex, attitudes to condom use, seropositioning
Sexual behaviour in the past 3 months (N=2189 MSM)

All CLS: 38.2% (95%CI 36.2-40.2%)

All CLS-D: 16.3% (95%CI 14.8-17.9%)

CLS-D higher HIV risk◊

Other CLS-D but not CLS-D

CLS-C protected sex only

No sex

N: 93 264 479 556 797

◊ CLS-D plus: not on ART or viral load>50c/mL; 95%CI
# Socio-demographic, HIV-related factors (N=2189 MSM)

<table>
<thead>
<tr>
<th></th>
<th>Sexual behaviour in the past 3 months</th>
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</thead>
<tbody>
<tr>
<td></td>
<td>CLS-D higher HIV risk◊ (n=93)</td>
</tr>
<tr>
<td>Median years diagnosed(IQR)</td>
<td>5 (2-10)</td>
</tr>
<tr>
<td>% No education/up to secondary</td>
<td>60</td>
</tr>
<tr>
<td>% Unemployed</td>
<td>17</td>
</tr>
<tr>
<td>% Stable partner HIV-positive</td>
<td>16</td>
</tr>
<tr>
<td>% Stable partner HIV-serodifferent</td>
<td>35</td>
</tr>
<tr>
<td>% Recreational drug use (3m)</td>
<td>75</td>
</tr>
<tr>
<td>% Polydrug use (≥4 drugs past 3m)</td>
<td>36</td>
</tr>
<tr>
<td>% Harmful alcohol consumption‡</td>
<td>28</td>
</tr>
</tbody>
</table>

◊ CLS-D plus not on ART or viral load>50c/mL
CLS-C: CLS with other HIV-positive partners only
‡Modified WHO-AUDIT score ≥6
Other factors associated with sexual behaviour (N=1392)

- Condom-protected sex only (n=556)
- CLS-C but not CLS-D (n=479)
- Other CLS-D (n=264)
- CLS-D higher HIV risk◊ (n=93)

- Chemsex† drug use
- Other STIs
- ≥5 sexual partners
- Had group sex
- Lifetime hepatitis C diagnosis
- "Less likely to use condom with casual partners"*
- "Worried I could have transmitted HIV"*

Three month recall unless otherwise specified; ◊ CLS-D plus not on ART or viral load>50c/mL; †Used crystal methamphetamine, GHB, or mephedrone; * Strongly/tend to agree

p<0.001 for all (χ² test comparing across all groups)
Number of new sexual partners in past year according to sexual behaviour in past 3 months (N=2189)

Sexual behaviour (past 3 months)
- No sex
- Condom-protected
- CLS-C only
- Other CLS-D
- CLS-D higher HIV risk◊

◊ CLS-D plus: not on ART or VL>50c/mL

Number of new sexual partners (past 12 months)
N: 880 82 318 245 220 211 102
Number of new sexual partners in past year according to sexual behaviour in past 3 months (N=2189)

Positioning and withdrawal before ejaculation inside partner (n=305 had CLS-D or CLS-D higher HIV risk combined)

- Always receptive: 43%
- Always or sometimes insertive without ejaculation: 30%
- Always or sometimes insertive with ejaculation: 27%

Number of new sexual partners (past 12 months)

<table>
<thead>
<tr>
<th>Number of new sexual partners</th>
<th>N</th>
</tr>
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<tbody>
<tr>
<td>0</td>
<td>880</td>
</tr>
<tr>
<td>1</td>
<td>82</td>
</tr>
<tr>
<td>2-4</td>
<td>318</td>
</tr>
<tr>
<td>5-9</td>
<td>245</td>
</tr>
<tr>
<td>10-19</td>
<td>220</td>
</tr>
<tr>
<td>20-49</td>
<td>211</td>
</tr>
<tr>
<td>≥50</td>
<td>102</td>
</tr>
</tbody>
</table>

◊ CLS-D plus not on ART or viral load>50c/mL
Prevalence of CLS-D with higher HIV risk: different definitions (past 3 months, n=2189)

CLS-D overall 16.3%

Missed ≥2 consecutive days of ART on ≥2 occasions in past 3 months

<table>
<thead>
<tr>
<th>CLS-D plus:</th>
<th>No ART or detectable VL</th>
<th>No ART or detectable VL or on ART≤9months</th>
<th>No ART or detectable VL or on ART≤9months or non-adherent</th>
<th>No ART or detectable VL or on ART≤9months or non-adherent or STI</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>4.2</td>
<td>4.6</td>
<td>5.3</td>
<td>7.5</td>
</tr>
</tbody>
</table>

95%CI

Self-reported syphilis, gonorrhoea, chlamydia, LGV, new hepatitis B or C, genital herpes or warts, trichomonas, NSU/NGU
Conclusions

- Differing implications for prevalence of condomless sex (CLS) overall and of CLS with HIV-serodifferent partners (CLS-D) with higher risk of HIV transmission (38% vs 4%)
- CLS-D may no longer be the best measure of ‘risky sex’ for HIV transmission: importance of incorporating viral load
- CLS with other HIV-positive partners exclusively also prevalent (22%) and an important issue in transmission of other STIs
- Sexual behaviour trends continue to evolve with the impact of early ART guidelines and PrEP awareness and use
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All ASTRA study participants

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