Agreements and communication about viral load and condomless anal intercourse within homosexual male serodiscordant couples

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Background

Effectiveness of ‘treatment as prevention’

• Treatment as Prevention is highly effective in reducing the risk of HIV transmission in heterosexual serodiscordant couples, and is durable (HPTN 052).

• Although less conclusive, evidence is mounting that Treatment as Prevention is effective in homosexual serodiscordant couples also (PARTNER and Opposites Attract).

• It is likely the risk of transmission from condomless anal intercourse (CLAI) is very low when the HIV-positive partner’s viral load is undetectable.

Viral Load Agreements and Communication

• Although serodiscordant couples have been a primary focus of Treatment as Prevention research and policy, very little is known about how they:
  • Make agreements about viral load and how these agreements align with practice
  • Communicate with each other about viral load.

• Qualitative research suggests that most couples do make agreements with each other to prevent transmission.

Methods

Study Design

• Prospective longitudinal cohort study.
  • Unit of recruitment is a couple comprising two men in an ongoing sexual relationship where one is HIV-positive and the other HIV-negative at baseline.
  • Couples attend at least 2 clinic visits per year:
    • Viral load and CD4 in HIV-positive partners
    • HIV antibody tests in HIV-negative partners
    • Tests for sexually transmissible infections in both partners.
  • Phylogenetic analysis conducted for the interim analysis and at the end of the study.

Opposites Attract Study Methods

Study Sites

Bangkok
The Red Cross AIDS Research Centre

Cairns
Cairns Sexual Health Centre

Brisbane
Gladstone Road Medical Centre

Melbourne
Alfred Hospital Centre Clinic
Melbourne Sexual Health Centre Northside Clinic
Prahran Market Clinic

Sydney
Burns Road Clinic
East Sydney Doctors
Holbrooke House
NSP Sexual Health
St Vincent’s Hospital (BAC)
Sydney Sexual Health Centre
Taylor Square Private Clinic

Rio de Janeiro
Instituto de Pesquisa Clínica Evandro Chagas (IPEC)
Enrolments and Visits

By 30 June 2015, 269 couples were enrolled.

85.5% had attended at least one follow-up visit.

Baseline Demographics

<table>
<thead>
<tr>
<th></th>
<th>HIV-Positive Partner</th>
<th>HIV-Negative Partner</th>
</tr>
</thead>
<tbody>
<tr>
<td>Age – mean (median)</td>
<td>36.8 (35.1)</td>
<td>36.7 (35.1)</td>
</tr>
<tr>
<td>‘Gay’ sexual identity</td>
<td>93.3%</td>
<td>93.3%</td>
</tr>
<tr>
<td>University education</td>
<td>46.8%</td>
<td>53.0%</td>
</tr>
<tr>
<td>Full-time employment</td>
<td>50.6%</td>
<td>49.4%</td>
</tr>
<tr>
<td>Ethnicity</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Caucasian</td>
<td>40.1%</td>
<td>42.4%</td>
</tr>
<tr>
<td>Thai</td>
<td>20.1%</td>
<td>20.4%</td>
</tr>
<tr>
<td>Other</td>
<td>41.3%</td>
<td>38.7%</td>
</tr>
</tbody>
</table>

Relationship Characteristics at Baseline

Length of relationship:

- 69.1% of couples lived together full-time.
- 96.0% described each other as ‘partner’, ‘husband’ or ‘boyfriend’
- 39.0% of HIV-negative partners had sex outside the relationship.
- 17.5% of HIV-negative partners had CLAI with outside partners.

ART and Viral Load

- HIV-positive partners taking ART:
  - Thailand 21%
  - Brazil 53%
  - Australia 53%

- HIV-positive partners with viral load of less than 200 copies per mL:
  - Thailand 41%
  - Brazil 33%
  - Australia 26%

Condomless Anal Intercourse within Couples

At baseline, total of 53.2% of HIV-negative partners reported ‘any CLAI’ with his HIV-positive partner in the previous 3 months.

Significant differences between countries:

<table>
<thead>
<tr>
<th>Country</th>
<th>Percent</th>
<th>Odds Ratio</th>
<th>95% CI</th>
<th>p-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Australia</td>
<td>67.8</td>
<td>Ref.</td>
<td>--</td>
<td>&lt;0.001</td>
</tr>
<tr>
<td>Brazil</td>
<td>42.3</td>
<td>0.34</td>
<td>0.19-0.62</td>
<td></td>
</tr>
<tr>
<td>Thailand</td>
<td>29.1</td>
<td>0.19</td>
<td>0.09-0.38</td>
<td></td>
</tr>
</tbody>
</table>

Agreements about CLAI within Couples

Proportions were similar during follow-up.
Results

Viral Load Communication
• 14.1% of HIV-negative partners did not know their HIV-positive partner’s last viral load test result.

Results

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Perceived Viral Load

<table>
<thead>
<tr>
<th></th>
<th>Total</th>
<th>Australia</th>
<th>Brazil</th>
<th>Thailand</th>
</tr>
</thead>
<tbody>
<tr>
<td>Undetectable</td>
<td>61.5%</td>
<td>77.6%</td>
<td>63.4%</td>
<td>14.6%</td>
</tr>
<tr>
<td>Detectable</td>
<td>24.9%</td>
<td>17.5%</td>
<td>22.5%</td>
<td>47.3%</td>
</tr>
<tr>
<td>Don’t Know</td>
<td>14.1%</td>
<td>4.9%</td>
<td>14.1%</td>
<td>38.2%</td>
</tr>
</tbody>
</table>

• HIV-negative partners outside Australia, especially in Thailand, were less likely to know their partner’s last viral load test result.

Results

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Accordance with Actual Viral Load

<200 copies | >200 copies | No result yet
Undetectable: 147 | 6 | 11
Detectable: 34 | 26 | 7
Don’t Know: 16 | 21 | 1

• Over two-thirds (69.2%) were in accordance.
• The majority (n=37) of “incorrect” perceptions were due to not knowing the result.

Results

18

Accordance with Actual Viral Load

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Detectable: 34 | 26 | 7
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• The majority (n=37) of “incorrect” perceptions were due to not knowing the result.
• 34 (13.6%) perceived it to be detectable when it was under 200 copies.
Accordance with Actual Viral Load

- Over two-thirds (69.2%) were in accordance.
- The majority (n=37) of "incorrect" perceptions were due to not knowing the result.
- 34 (13.6%) perceived it to be detectable when it was under 200 copies.
- Few (n=6, 2.4%) believed it to be undetectable when it was actually over 200 copies.

<table>
<thead>
<tr>
<th></th>
<th>&lt;200 copies</th>
<th>&gt;200 copies</th>
<th>No result yet</th>
</tr>
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<tbody>
<tr>
<td>Undetectable</td>
<td>147</td>
<td>6</td>
<td>11</td>
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Agreements about Viral Load (VL)

- 73% of couples had an agreement where the HIV-positive partner would tell the HIV-negative partner the results of each VL test.

- 44% had an agreement where they could have CLAI if the HIV-positive partner’s VL was undetectable.

- Amongst those with undetectable perceived VL, CLAI was more likely if they had this agreement. (p<0.001)

Accordance with Practice
Results

Accordance with Practice

• 20% had an agreement where they could have CLAI if the HIV-positive partner’s VL was detectable.

Results

Communication about Viral Load

• 87.7% of HIV-negative partners found it easy to discuss viral load with their HIV-positive partners.

Results

Communication about Viral Load

• 87.7% of HIV-negative partners found it easy to discuss viral load with their HIV-positive partners.

• Those who had partners with undetectable viral load found this easier than those whose partners had detectable viral load.

Conclusion

• Reducing risk in serodiscordant couples relies on decisions about CLAI in relation to VL, while accurate knowledge of partners’ recent VL relies on clear communication within couples.

• Relationship agreements largely reflected practice.
  • A substantial minority had CLAI with each other despite having an agreement not to.

• HIV-negative partners typically discovered viral load results in explicit ways.
  • Being in the study may have influenced this.

• Better understanding of couples who agreed to allow CLAI even when VL was detectable is needed.

Acknowledgements