The Relationship Between Alcohol Use and HIV in MSM

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Disclosures and Acknowledgements

- Gilead Sciences
  - Speaker bureau
  - Consulting
  - Grants
- Merck
  - Grants
- Alkermes
  - Grants
- NIDA and NIAAA
  - R01 AA018944
  - R01 DA030762
  - R01 DA032106
- Colleagues
  - Jorge Sanchez (Impacta)
  - Ann Duerr (UW)
  - Javier Lama (Impacta)
  - Pedro Gonzalez (Impacta)
  - Sandra Springer (Yale)
Alcohol Consumption Levels (15+ years)

Per capita consumption (litres)
- <2.5
- 2.5–4.9
- 5.0–7.4
- 7.5–9.9
- 10.0–12.4
- ≥12.50

Data not available
Not applicable

The boundaries and names shown and the designations used on this map do not imply the expression of any opinion whatsoever on the part of the World Health Organization concerning the legal status of any country, territory, city or area or of its authorities, or concerning the delimitation of its frontiers or boundaries. Dotted and dashed lines on maps represent approximate border lines for which there may not yet be full agreement.

Data Source: World Health Organization
Map Production: Health Statistics and Information Systems (HSI)
World Health Organization
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### DSM-V: Alcohol Use Disorders Represent a Spectrum of Conditions

<table>
<thead>
<tr>
<th>None</th>
<th>Mild</th>
<th>Moderate</th>
<th>Severe</th>
<th>Chronic</th>
</tr>
</thead>
<tbody>
<tr>
<td>Never exceeds the drinking limits</td>
<td>“Hazardous”</td>
<td>“Harmful use”</td>
<td>“Dependence”</td>
<td>Dependence</td>
</tr>
<tr>
<td>No current symptoms (problems)</td>
<td>Current symptoms</td>
<td>Drinks daily or near daily</td>
<td>Current symptoms Withdrawal</td>
<td>PLUS chronic or relapsing Medical +/- psychiatric comorbidity</td>
</tr>
</tbody>
</table>

Exceeds Daily Drinking Limits
Alcohol Use and HIV Risk
A systematic review of alcohol use and sexual risk-taking in Latin America

Panagiotis Vagenas,1 Javier R. Lama,1 Kaysia T. Ludford,1 Pedro Gonzales,2 Jorge Sanchez,2 and Frederick L. Altice1

An explanatory factor analysis of a brief self-report scale to detect neurocognitive impairment among HIV-positive men who have sex with men and transgender women in Peru

Damian Weikum, Roman Shrestha, Enrico G. Ferro, Panagiotis Vagenas, Michael Copenhaver, Serena Spudich, Michael D. Alpert, Robinson Cabello, Javier R. Lama, Jorge Sanchez & Frederick L. Altice

• Levels of neurocognitive impairment often not assessed as contributing to risk outcomes*

*Anand P, AIDS Behav, 2010
Alcohol, HIV and the Peruvian Context

Screening for Drug and Alcohol Use Disorders and Their Association with HIV-Related Sexual Risk Behaviors among Men Who Have Sex with Men in Peru

Kaysia T. Ludford¹, Panagiotis Vagenas¹, Javier R. Lama², Jesus Peinado², Pedro Gonzales², Rene Leiva³, Monica Pun³, Jorge Sanchez², Frederick L. Altice¹, ², for the Peruvian HIV Sentinel Surveillance Working Group

PLoS One, 2013

Being Unaware of Being HIV-Infected is Associated with Alcohol Use Disorders and High-Risk Sexual Behaviors Among Men Who have Sex with Men in Peru

Panagiotis Vagenas · Kaysia T. Ludford · Pedro Gonzales · Jesus Peinado · Cesar Cabezas · Fernando Gonzales · Javier R. Lama · Jorge Sanchez · Frederick L. Altice · for the Peruvian HIV Sentinel Surveillance Working Group

AIDS Behav, 2013

Alcohol use disorders negatively influence antiretroviral medication adherence among men who have sex with men in Peru

Enrico G. Ferro¹, Damian Weikum², Panagiotis Vagenas¹, Michael M. Copenhaver³, Pedro Gonzales⁴, Jesus Peinado⁴, Robinson Cabello⁵, Javier R. Lama⁴, Jorge Sanchez⁴ & Frederick L. Altice²

AIDS Care, 2014
Peruvian Biobehavioral Survey

- 5,148 biological men that reported sex with a man in the previous 12 months in five cites (half in Lima)
- TGW=700 (13.6%)
- Recent drug use (13.6%)
Increased HIV Transmission Risk With Increasing Alcohol Use Disorder Severity in Peruvian MSM
Correlates of Being Unaware of Being HIV+ Among Peruvian MSM

<table>
<thead>
<tr>
<th>Covariates</th>
<th>Multivariate associations</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>AOR (95% CI)</td>
<td>p value</td>
</tr>
<tr>
<td>Unprotected sex with last partner</td>
<td>2.84 (1.09–7.40)</td>
<td>0.032</td>
</tr>
<tr>
<td>Unprotected sex with any of last 3 partners</td>
<td>1.24 (0.56–2.71)</td>
<td>0.596</td>
</tr>
<tr>
<td>Alcohol use disorder</td>
<td>2.14 (1.01–4.54)</td>
<td>0.048</td>
</tr>
<tr>
<td>Syphilis infection</td>
<td>0.52 (0.22–1.22)</td>
<td>0.135</td>
</tr>
<tr>
<td>Age</td>
<td>0.97 (0.93–1.01)</td>
<td>0.087</td>
</tr>
<tr>
<td></td>
<td>AIC = 201.2</td>
<td></td>
</tr>
</tbody>
</table>

* 90% of MSM were UNAWARE of being HIV+
Alcohol Use and HIV Care
The Impact of Substance Use Disorders on HIV-infected Patients

• Over half of all HIV-infected patients in many settings have substance use disorders¹

• The coexistence of drug or alcohol use and HIV is associated with each step of the HIV Continuum of Care²:
  – Delayed HIV diagnosis and care
  – Overlapping signs and symptoms that may complicate HIV care
  – Increased HIV morbidity and mortality
  – Poor adherence to antiretroviral therapy (ART)
  – Increased HIV transmission risk behaviors

Alcohol and Substance Use is Associated With Delayed Presentation to HIV Care

Delay Between Positive HIV Test and Initial Presentation to Primary Medical Care (N=189)

<table>
<thead>
<tr>
<th>Patient Factors</th>
<th>Additional Delay in Months (mean)</th>
<th>P</th>
</tr>
</thead>
<tbody>
<tr>
<td>Not having a spouse or partner</td>
<td>8.6</td>
<td>.08</td>
</tr>
<tr>
<td>Not having a living mother</td>
<td>13.9</td>
<td>.01</td>
</tr>
<tr>
<td>Not aware of HIV risk at testing^a</td>
<td>18</td>
<td>.001</td>
</tr>
<tr>
<td>Injection drug use</td>
<td>19.2</td>
<td>.001</td>
</tr>
<tr>
<td>Not told of HIV-positive status in person^a</td>
<td>30.4</td>
<td>.002</td>
</tr>
<tr>
<td>Alcohol use disorders^b</td>
<td></td>
<td>.03</td>
</tr>
<tr>
<td><strong>Men</strong></td>
<td><strong>14.6</strong></td>
<td><strong>0.01</strong></td>
</tr>
<tr>
<td><strong>Women</strong></td>
<td>-10</td>
<td>.16</td>
</tr>
</tbody>
</table>

^a N=187

^b Assessment based on 4-question screening tool for alcohol and/or substance abuse (CAGE); delay significant in men, not women.

Time to Linkage to HIV Care in Newly Diagnosed MSM/TGW in Peru (N=333)

Lama JR et al, IBBS, 2010 (unpublished)
Perfect Ferro E et al, AIDS Care 2014

Level of Antiretroviral Adherence

- No AUD (N=148)
- AUD (N=116)

≥90% Optimal

- No AUD: 91.9%
- AUD: 80.2%

P=0.005

100% Perfect

- No AUD: 64.2%
- AUD: 44.0%

P<0.001

Ferro E et al, AIDS Care 2014
Binge Drinking Is Associated With Missed ART Doses (N=2702)

- Among patients who abstained from alcohol, 2.4% missed medication doses on a particular day.
- In BOTH non-binge and binge drinkers, alcohol consumption was associated with missed doses on that day, and for the 2 days immediately following.

Treatment for Alcohol Use Disorders

*Impact on HIV Treatment Outcomes*
Alcohol Affects Diverse Neurotransmitter Systems

- Release of endogenous opioids
- Oral or Injectable Naltrexone
- Acamprosate

Alcohol releases opioid peptides that facilitate dopamine release

21st Century

Glutamate

Opioids
Evidence-Based Treatment for Alcohol Use Disorders

• Both naltrexone (oral and extended release formulations) and acamprosate are superior to placebo in RCTs (HIV+ patients excluded)

• COMBINE Study (head-to-head comparison)
  – Naltrexone (NTX) with medical management (MM) was superior to either an extended cognitive behavioral intervention (12 sessions), acamprosate or any combination of the above
  – Superiority outcomes included (best with >3 months of Rx):
    • Time to relapse
    • Decreased drinking and heavy drinking days
    • Abstinence
Placebo-Controlled Trial of Oral Naltrexone in HIV+ MSM with AUD

- HIV+ MSM with AUD and initiating ART (N=159)
- Characteristics
  - Age (M=27 years)
  - Alcohol dependence (42%)
  - Mod/Severe depression (47%)
  - Past 30-day drug use (16%)
- Similar baseline drinking and abstinence levels before starting NTX
- Poor adherence to NTX (64% → 46% by 6 months) – lower in age<25 years

R01 DA032106 (PI: Duerr), Unpublished
Change in VS from Baseline to 6 months in HIV Prisoners Transitioning to the Community

P=0.015

P=0.292

P=0.001

% Virally Suppressed (VL<50 c/mL)

Baseline 6 Months

Placebo

XR-NTX

Springer, SA et al. CROI. Abstract 96. 2018
Multivariate Regression Analysis of Predictors of VS (<50 copies/ mL) at 6 months: INSPIRE

<table>
<thead>
<tr>
<th>Variables</th>
<th>Odds Ratio</th>
<th>Lower CI</th>
<th>Upper CI</th>
<th>P-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Intercept</td>
<td>0.120</td>
<td>0.02</td>
<td>0.84</td>
<td>0.032</td>
</tr>
<tr>
<td><strong>Treatment Arm</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Placebo</td>
<td>Referent</td>
<td>1.43</td>
<td>14.43</td>
<td>0.009*</td>
</tr>
<tr>
<td>XR-NTX</td>
<td>4.54</td>
<td>1.43</td>
<td>14.43</td>
<td>0.009*</td>
</tr>
<tr>
<td><strong>Number of injections</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2 or less</td>
<td>Referent</td>
<td>2.08</td>
<td>19.29</td>
<td>0.001*</td>
</tr>
<tr>
<td>3 or more</td>
<td>6.34</td>
<td>2.08</td>
<td>19.29</td>
<td>0.001*</td>
</tr>
<tr>
<td>Cocaine Use Disorder</td>
<td>0.83</td>
<td>0.66</td>
<td>1.04</td>
<td>0.112</td>
</tr>
<tr>
<td>Opioid Use Disorder</td>
<td>0.96</td>
<td>0.79</td>
<td>1.15</td>
<td>0.645</td>
</tr>
<tr>
<td>Homelessness</td>
<td>0.45</td>
<td>0.15</td>
<td>0.32</td>
<td>0.148</td>
</tr>
<tr>
<td>Major Depression</td>
<td>0.77</td>
<td>0.17</td>
<td>3.52</td>
<td>0.735</td>
</tr>
<tr>
<td><strong>Race/ Ethnicity</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Black</td>
<td>Referent</td>
<td>0.84</td>
<td>15.94</td>
<td>0.085</td>
</tr>
<tr>
<td>Hispanic</td>
<td>3.65</td>
<td>0.84</td>
<td>15.94</td>
<td>0.085</td>
</tr>
<tr>
<td>White</td>
<td>5.37</td>
<td>1.08</td>
<td>26.72</td>
<td>0.040*</td>
</tr>
<tr>
<td>Alcohol Improvement Score</td>
<td>1.43</td>
<td>1.03</td>
<td>1.98</td>
<td>0.033*</td>
</tr>
</tbody>
</table>
Extended-release naltrexone reduces alcohol consumption among released prisoners with HIV disease as they transition to the community

Sandra A. Springer\textsuperscript{a,b,*}, Angela Di Paola\textsuperscript{a}, Marwan M. Azar\textsuperscript{a}, Russell Barbour\textsuperscript{b}, Archana Krishnan\textsuperscript{c}, Frederick L. Altice\textsuperscript{a,b,d,e}

- Validated a new composite alcohol use outcome score (derived from the COMBINE study)
  - Time to first heavy drinking day
  - Mean number of drinks/day (standardized)
  - Percent heavy drinking days
  - Change in average drinks/day
  - Total number of drinking days

- XR-NTX ↓ the time to first heavy drinking day for those under 30 years (size too small to assess in women)

- Alcohol composite scores improved more in those with 4 or more injections
Men Who Have Sex With Men in Peru: Acceptability of Medication-Assisted Therapy for Treating Alcohol Use Disorders

Shan-Estelle Brown, PhD, Panagiotis Vagenas, PhD, MPH, Kelika A. Konda, PhD, Jesse L. Clark, MD, Javier R. Lama, MD, MPH, Pedro Gonzales, MD, MAS, Jorge Sanchez, MD, MPH, Ann C. Duerr, MD, PhD, MPH, and Frederick L. Altice, MD, MA

• Themes
  – Skepticism that medications can treat AUD – perception of this being a moral weakness
  – Factors associated with willingness to take a medication
    • Cost
    • Family and social support
    • Ability to drink LESS, but not abstain completely since it was strongly cultural to drink socially
Understanding the Differences

• LA injectable overcomes some of the adherence concerns in oral formulations
• Higher levels of dependent drinking in LA group (82% vs 42%)
• Younger age in the oral NTX study
• Oral NTX study involved new initiates to ART (i.e. motivational) vs long-term ART treated patients
• Cultural differences in alcohol expectancies in the two groups (e.g., criminal justice involvement and fear of reincarceration)
Summary

- Alcohol is highly prevalent in MSM with or at risk for HIV and should be diagnosed and treated
  - Involves medications and counseling strategies
- It is important to use validated definitions for alcohol consumption and disorders
- Mixed findings from treating AUDs
- Consideration for using longer-acting NTX treatments – 3-month implants combined potentially with LA PrEP and ART
Thank you!
Muchas gracias!
Muito obrigado!