Methamphetamine Use Among Persons with Opioid Use Disorder: Implications for Treatment

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NIH HEAL Initiative Virtual Meeting
April 14, 2021
Financial disclosures

• Site PI for Patient Centered Outcomes Research Institute (PCORI) funded study (HERO Study) that used HCV medications donated by Gilead.

• Small Business Innovation Research (SBIR) grants from NIH/NIDA (R44DA044053, R41DA053081; PI: Seiguer/Tsui) in partnership with a health technology company (emocha) to develop video-DOT app for buprenorphine and methadone treated patients.

• Other funding from NIDA and NIAAA (5UG1DA013714, UH2AA026193, 1R01DA047045, 1U24DA048538, 1R25DA037756, 1R25DA050985, 1R34MH124625, 1R25DA051343)
Objectives

• Review trends in methamphetamine use among person with opioid use disorder (OUD)
• Present research examining association between methamphetamine use and retention in buprenorphine treatment
• Discuss strategies for improving engagement and retention among patients with OUD who use methamphetamine
Patient stories: T.S.*

- 55 yr. old woman seen at opioid treatment program
- Back injury in her 40s, used prescription opioids then heroin
- Initiated treated for opioid use disorder (OUD) a year ago with methadone
- Introduced to methamphetamine 6 months ago by a patient ("it’s everywhere"), now uses few times a week, either smokes or injects
- She uses for “focus” and “energy”, to combat sedation from methadone
- Had recent ED visit for abscess/cellulitis
- Interested having stimulant agonist medications for ADHD prescribed to help her cut back on methamphetamine use

*Composite of multiple individual patients
Trends in methamphetamine use among treatment seeking opioid users

Ellis MS, Kasper ZA, Cicero TJ. Drug Alcohol Depend. 2018
Methamphetamine use among persons who inject opioids

- Increasing methamphetamine use among persons who inject heroin observed in Western cities (Denver\textsuperscript{1}, Seattle\textsuperscript{2}, San Diego\textsuperscript{3})
- Heroin/methamphetamine may be taken separately or in a combined injection (“goofball”)
- Emerging data on morbidity and high-risk injecting behaviors associated with goofball use\textsuperscript{2}

Research Questions

• Is methamphetamine use associated with worse buprenorphine treatment outcomes like retention?

• What happens to methamphetamine use over time among patients who are treated for OUD with buprenorphine?
Association between methamphetamine use and retention among patients with opioid use disorders treated with buprenorphine

Judith I. Tsui a, Jim Mayfield b, Elizabeth C. Speaker b, Sawir Yakup b, Richard Ries e, Harvey Funai d, Brian G. Leroux c, Joseph O. Merrill a
Study design

• Utilized data from SAMHSA-funded Washington State Medication Assisted Treatment-Prescription Drug and Opioid Addiction (WA-MAT-PDOA) program between November 1, 2015 and April 31, 2018
  — 3 clinic sites (Seattle, Hoquiam and Olympia)
• Past 30-day substance use (collected baseline and 6 months)
• Dates of reported “discharge” defined as having no contact with program and no buprenorphine script for ≥30 days
  — Discharge is an administrative term referring to patient not being active in the program
• Tested associations between baseline methamphetamine use and time to discharge; described the proportion using methamphetamine at baseline and 6 months
Baseline past 30-day substance use (n=799)

- Cannabis: 40%
- Methamphetamine: 30%
- Alcohol: 26%
- Benzodiazepine: 8%
- Cocaine: 7%
Patterns of methamphetamine use (n = 237)

Frequency:
- 15%: 21-30 days
- 19%: 11-20 days
- 66%: 1-10 days

Route:
- 21%: Intranasal, 3%
- 73%: Oral, 3% Intravenous Smoking

Tsui JI, et al. J Subst Abuse Treat. 2020
Kaplan-Meier survival curves for methamphetamine users and non-users (n=770)
Hazard ratios for non-retention associated with using methamphetamine at baseline

<table>
<thead>
<tr>
<th>Model</th>
<th>Hazard Ratio (95% CI)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Any Methamphetamine Use (past month)</td>
<td>2.39 (1.94–2.93)</td>
</tr>
<tr>
<td>Days Used Methamphetamine (past month)</td>
<td></td>
</tr>
<tr>
<td>None</td>
<td>(Ref)</td>
</tr>
<tr>
<td>1–10</td>
<td>2.05 (1.63–2.57)</td>
</tr>
<tr>
<td>11–20</td>
<td>3.04 (2.12–4.23)</td>
</tr>
<tr>
<td>21–30</td>
<td>3.61 (2.40–5.23)</td>
</tr>
</tbody>
</table>

*Adjusted for site, time period, age, gender, race, ethnicity, and education; sample includes 768 with complete data.
Reasons for non-retention

- Loss to follow-up: 65%
- Transfers: 27%
- Clinic discharges: 4%
- Other: 4%

Tsui JI, et al. J Subst Abuse Treat. 2020
Methamphetamine use decreased over time among buprenorphine treated patients

- 516 completed both baseline and 6-month follow-up surveys
- 135 (26%) were using methamphetamine at baseline; of those, 98 (73%) were no longer using at 6 months
- Average number of days of methamphetamine use reported in the past month decreased by 6.10 days (±SD 9.11) at 6 months
Study limitations

• Data from 3 programs in WA State, may not generalize

• Patterns of methamphetamine use over time based on sub-sample of patients having 6-month follow-up (517/799; 65%)
  – Issues of recall bias and bias from missing data (more likely to use)

• Definition of “retention” is simple, based on single tx episode
  – No data on cumulative days of treatment that can account for intermittent treatment/re-engagement
Study conclusions

• Patients who used methamphetamine at baseline appeared less likely to be retained in buprenorphine treatment
  – However, reductions in methamphetamine use were observed over time

• As such, methamphetamine use should not be a barrier to initiating or maintaining OUD treatment
  – Need for “Low barrier” programs/policies that can successfully engage patients with OUD who use stimulants/methamphetamine
Bupe Pathways: “Low Barrier” clinic

- Buprenorphine program in Seattle, WA that is co-located with King County Public Health Syringe Services Program (SSP)\(^1\)
  - Similar programs in many other parts of the country\(^2\)-\(^3\)
- Provides flexible scheduling with rapid access to medication; care delivered through “harm reduction lens”
- Serves patients who are primarily homeless and using stimulants

“Low Barrier” care: Bupe Pathways program

Panel A: Patients with Single Care Episode (n=95)

Panel B: Patients with Intermittent Care Episodes (n=51)

Hood JA, et al. Substance Abuse. 2020
Increased utilization of buprenorphine and methadone in 2018 compared to 2015 among Seattle-area persons who inject drugs

Elisabeth Poorman a, Sara N. Glick b, c, d, e, Jonathan K.D. Hiser a, Elenore Bhatraju a, Judith I. Tsui a
Past-year Use of Medications for OUD Among PWID: Data from 2018 Seattle Area National HIV Behavioral Surveillance (NHBS) System (N=498)

Characteristics of PWID with and without past-year medications for OUD: Data from 2018 Seattle area NHBS (N=498)

<table>
<thead>
<tr>
<th>Characteristic</th>
<th>No Medication</th>
<th>Methadone</th>
<th>Buprenorphine</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>N=237</td>
<td>N=195b</td>
<td>p-value²</td>
</tr>
<tr>
<td>Age (years), mean [SD]</td>
<td>41.9 [11.6]</td>
<td>43.1 [12.5]</td>
<td>0.311</td>
</tr>
<tr>
<td>Male (n, %)</td>
<td>156 (65.8)</td>
<td>108 (55.4)</td>
<td>0.027</td>
</tr>
<tr>
<td>Race/Ethnicity (n, %)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>White, non-Hispanic</td>
<td>116 (49.0)</td>
<td>96 (49.2)</td>
<td>0.161</td>
</tr>
<tr>
<td>Black, non-Hispanic</td>
<td>40 (16.9)</td>
<td>20 (10.3)</td>
<td></td>
</tr>
<tr>
<td>Hispanic</td>
<td>26 (11.0)</td>
<td>30 (15.4)</td>
<td></td>
</tr>
<tr>
<td>Othera</td>
<td>55 (23.2)</td>
<td>49 (25.1)</td>
<td></td>
</tr>
<tr>
<td>Current homeless</td>
<td>152 (64.1)</td>
<td>91 (46.7)</td>
<td>&lt;0.001</td>
</tr>
<tr>
<td>Has health insurance</td>
<td>212 (89.5)</td>
<td>191 (98.0)</td>
<td>&lt;0.001</td>
</tr>
<tr>
<td>Years since first injection (n, %)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>0–5 years</td>
<td>50 (21.1)</td>
<td>25 (12.8)</td>
<td>0.041</td>
</tr>
<tr>
<td>6–15 years</td>
<td>64 (27.0)</td>
<td>68 (34.9)</td>
<td></td>
</tr>
<tr>
<td>&gt;15 years</td>
<td>123 (51.9)</td>
<td>102 (52.3)</td>
<td></td>
</tr>
<tr>
<td>Overdosed, past year</td>
<td>62 (26.2)</td>
<td>45 (23.1)</td>
<td>0.460</td>
</tr>
<tr>
<td>Methamphetamine use, past year (n, %)</td>
<td>182 (76.8)</td>
<td>142 (72.8)</td>
<td>0.343</td>
</tr>
</tbody>
</table>
Reported site of receipt for buprenorphine treatment among PWID: Data from 2018 Seattle area NHBS (N=108)

<table>
<thead>
<tr>
<th>Location</th>
<th>Percentage (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Syringe Services Program</td>
<td>28.7</td>
</tr>
<tr>
<td>Hospital Based Program</td>
<td>21.3</td>
</tr>
<tr>
<td>Community Health Center Program</td>
<td>15.7</td>
</tr>
<tr>
<td>Tribal Program</td>
<td>13.9</td>
</tr>
<tr>
<td>Non-profit Program</td>
<td>9.3</td>
</tr>
<tr>
<td>Jail/Diversion Program</td>
<td>3.7</td>
</tr>
<tr>
<td>Other</td>
<td>14.8</td>
</tr>
</tbody>
</table>
Why is it important to keep persons with OUD and methamphetamine use retained in care?

• Many will discontinue methamphetamine use over time without any specific interventions
• Even if patients don’t want to change their use it is important to offer counseling and provide care that will reduce harms
• By keeping a patient engaged you create window of opportunities to offer interventions
Harm reduction/safer drug use counseling

• Carry naloxone
• Avoid using alone, use with people you trust
• Avoid mixing drugs
• Be wary of fentanyl contamination
  – Use a test dose or fentanyl test strips
• Choose safest mode possible
  – Oral > snort > smoke > inject IV
• Practice good vein care
• Don’t share any injecting equipment

• Avoid using in settings that can lead to risky sex, prepare for safer sex
  – Consider PrEP
• Stay hydrated, avoid getting overheated
• Pay attention to oral/dental hygiene
• Get tested for HIV and HCV regularly
Desired “help” for reducing methamphetamine use among syringe service program participants in WA State (n = 79)

- 1:1 counseling: 49%
- Medication that may help reduce use: 48%
- Outpatient programs: 38%
- Mental health medication: 38%
- Someone to help navigate services: 37%
- Inpatient/residential programs: 33%
- Detox: 32%
- Other: 14%
- No help: 8%

Adapted from McMahan V, et al. Drug and Alcohol Dependence. 2020
Pharmacotherapy for methamphetamine use disorder (MUD)

• There are currently no FDA approved medications for treatment of MUD
  ─ ~20% of all medications are prescribed “off-label”\(^1\)

• Many medications/combinations have been studied, but not specifically among patients with concurrent OUD
  ─ Study of naltrexone implants for heroin and amphetamine use disorder\(^2\)

• Recent systematic review/meta-analysis concluded that medications evaluated for MUD have not clearly shown a significant benefit\(^3\)
  ─ However, stated there was “low-strength” evidence that methylphenidate may reduce use

Bupropion and Naltrexone in Methamphetamine Use Disorder

Madhukar H. Trivedi, M.D., Robrina Walker, Ph.D., Walter Ling, M.D., Adriane dela Cruz, M.D., Ph.D., Gaurav Sharma, Ph.D., Thomas Carmody, Ph.D., Udi E. Chitza, Ph.D., Aimee Wahle, M.S., Mora Kim, M.P.H., Kathy Shores-Wilson, Ph.D., Steven Sparenborg, Ph.D., Phillip Coffin, M.D., M.I.A., et al.
Summary

• Methamphetamine use is increasingly common among persons with OUD and has been shown to be associated with worse retention in buprenorphine treatment.
• “Low-barrier” buprenorphine programs have demonstrated success engaging patients with OUD who use stimulants.
• Patient-centered interventions that can be implemented in real-world settings are needed to reduce methamphetamine use and improve retention among patients with treated OUD.
Acknowledgement to Research Partners and Patients
Thank you!

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