Chronic Pain and Alcohol Use Disorder

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Research Support and Disclosures

- This research is currently supported by the National Institute on Alcohol Abuse and Alcoholism (R01 AA022328; Witkiewitz, PI) and the National Institute on Drug Abuse (UG3 DA051241; Witkiewitz & Vowles, PI)

- No other conflicts related to this work

- Acknowledge my collaborators on this work, particularly Kevin Vowles, Tessa Frohe, Victoria Votaw, Karly Edwards, Megan Kirouac, Stephen Maisto, and Elizabeth McCallion

Kevin Vowles, PhD
Queen’s University, Belfast
Alcohol is a leading cause of morbidity and preventable mortality

United States (source cdc.gov)

- OPIOD DEATHS
  - 2018: 47,000
  - 2010: 88,000

- ALCOHOL DEATHS
  - 2018: 88,000
  - 2010: 47,000

Witkiewitz & Vowles (2018). Alcoholism: Clinical & Experimental Research
Alcohol has long been used as an analgesic.
Alcohol use, negative affect, and pain are inherently linked via overlapping neural substrates.

C’mon, let’s drink till we can’t feel feelings anymore.
Alcohol use, negative affect, and pain are inherently linked via overlapping neural substrates.
Acute pain increase urges to drink and alcohol self-administration in rodent and human models, which may increase hypersensitivity to pain.
Pain increases risk of heavy drinking relapse following alcohol treatment

(Witkiewitz et al (2015). *Addiction.* 1.44, 95% CI=1.07, 1.92, p=0.01)
Pain associated with heavier and more frequent drinking following alcohol treatment

Alcohol use associated with 2.5x increase in rates of misusing opioid medications to relieve pain

Witkiewitz & Vowles (2018). Alcoholism: Clinical & Experimental Research
Opioid use increases risk of heavy drinking relapse following alcohol treatment

(Witkiewitz et al, 2018. *Alcoholism: Clinical & Experimental Research* OR=1.38, p<0.001)

(OR=1.38, p<0.001)
Chronic pain patients who are prescribed opioids report misuse of opioids and alcohol.

Most individuals who misuse prescription opioids report doing so for pain relief, regardless of AUD diagnosis.

Table 1. Prevalence of Motives for participants’ last episode of prescription opioid misuse by alcohol use disorder (AUD) status.

<table>
<thead>
<tr>
<th>Motive</th>
<th>All participants (N = 2,627)</th>
<th>No AUD Symptoms (n = 1,440)</th>
<th>AUD Symptoms without Disorder (n = 467)</th>
<th>AUD Diagnosis (n = 720)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Count (n)a</td>
<td>%</td>
<td>Count (n)a</td>
<td>%</td>
<td>Count (n)a</td>
</tr>
<tr>
<td>Pain Relief</td>
<td>1,772</td>
<td>1,056</td>
<td>319</td>
<td>397</td>
</tr>
<tr>
<td></td>
<td>72.2</td>
<td>77.5</td>
<td>75.4</td>
<td>57.3</td>
</tr>
<tr>
<td>To Relax</td>
<td>730</td>
<td>328</td>
<td>131</td>
<td>271</td>
</tr>
<tr>
<td></td>
<td>25.8</td>
<td>21.1</td>
<td>24.6</td>
<td>37.8</td>
</tr>
<tr>
<td>To Get High</td>
<td>642</td>
<td>262</td>
<td>107</td>
<td>273</td>
</tr>
<tr>
<td></td>
<td>20.5</td>
<td>14.8</td>
<td>20.2</td>
<td>34.3</td>
</tr>
<tr>
<td>For Sleep</td>
<td>421</td>
<td>192</td>
<td>86</td>
<td>143</td>
</tr>
<tr>
<td></td>
<td>15.6</td>
<td>13.5</td>
<td>15.7</td>
<td>20.7</td>
</tr>
<tr>
<td>For Emotions</td>
<td>309</td>
<td>133</td>
<td>50</td>
<td>126</td>
</tr>
<tr>
<td></td>
<td>9.6</td>
<td>7.4</td>
<td>11.4</td>
<td>13.6</td>
</tr>
</tbody>
</table>

What can be done?
Promising approaches...

Vowles et al (in press). *Journal of Pain*
What can be done?
Potential pharmacotherapies

Glucocorticoid receptor antagonism decreases alcohol seeking in alcohol-dependent individuals


European Journal of Pharmacology
Volume 524, Issues 1-3, 7 November 2005, Pages 80-83

Short communication
Effects of glucocorticoid receptor antagonists on allostynia and hyperalgesia in mouse model of neuropathic pain

Ichiro Takasaki, Takashi Kurihara, Hironao Saegusa, Shuqin Zong, Tsutomu Tanabe

Original Investigation
March 9, 2020

Efficacy of Gabapentin for the Treatment of Alcohol Use Disorder in Patients With Alcohol Withdrawal Symptoms
A Randomized Clinical Trial
Raymond F. Anton, MD; Patricia Latham, PhD; Konstantin Voronin, MD, PhD; et al


Vivitrol®
(naltrexone for extended-release injectable suspension)
What needs to be done?

• Basic Science
  • Clinical relevance of many traditional animal models of pain and excessive alcohol consumption
  • Take precautions to NOT exclude heavy drinkers/those with AUD or OUD from human lab studies of pain

• Clinical Science
  • Gold standard measurement of substance use and pain interference
  • Carefully consider implications of exclusions that will reduce generalizability to MOST individuals
Thank you!

Please email katiew@unm.edu for copies of this presentation.

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