Addressing Substance and Alcohol Use Prior to HCV Treatment

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Disclosure Information

- Dr Treisman has no relevant financial affiliations to disclose.
Outline

- Alcohol use and liver disease
- Recommendations for alcohol sobriety prior to treatment
- Drug use and liver disease
- Recommendations for drug abstinence prior to treatment
Effect of Opiate Substitution Treatment on HCV Incidence

<table>
<thead>
<tr>
<th>Study</th>
<th>ES (95% CI)</th>
<th>Weight</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bristol</td>
<td>1.06 (0.35, 3.25)</td>
<td>28.26</td>
</tr>
<tr>
<td>Leeds</td>
<td>1.31 (0.08, 21.51)</td>
<td>4.52</td>
</tr>
<tr>
<td>Birmingham</td>
<td>1.55 (0.14, 17.39)</td>
<td>6.04</td>
</tr>
<tr>
<td>Glasgow</td>
<td>0.06 (0.01, 0.54)</td>
<td>7.52</td>
</tr>
<tr>
<td>Wales</td>
<td>0.16 (0.05, 0.58)</td>
<td>21.85</td>
</tr>
<tr>
<td>London</td>
<td>0.47 (0.16, 1.33)</td>
<td>31.81</td>
</tr>
<tr>
<td>Overall</td>
<td>0.45 (0.25, 0.82)</td>
<td>100.00</td>
</tr>
</tbody>
</table>

## Odds of New HCV Infection for Patients on Harm Reduction Programs

<table>
<thead>
<tr>
<th>Condition</th>
<th>Odds Ratio (OR)</th>
<th>Adjusted OR</th>
<th>P Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Opiate substitution</td>
<td>.36</td>
<td>.41</td>
<td>.01</td>
</tr>
<tr>
<td>Needle/syringe</td>
<td>.52</td>
<td>.48</td>
<td>.03</td>
</tr>
<tr>
<td>Opiate + needle/syringe</td>
<td>.19</td>
<td>.21</td>
<td>.001</td>
</tr>
</tbody>
</table>

Fig. 2 Percentage reporting alcohol abstinence by timepoint. Patients ($n$) at initial interview = 53, at 3 months = 35, at 6 months = 45. Between 0 and 3 months, $P < .05$. Between 0 and 6 month, $P < .01$.

Patients were initially deferred owing to psychiatric issues (35%), alcohol abuse (31%), drug abuse (9%), more than 1 (26%).
Alcohol Use in HCV-Infected Patients

- Increases:
  - Intrinsic liver disease
  - Cirrhosis
  - Mortality

- Decreases:
  - Likelihood of treatment
Alcohol Use and HCV Treatment Outcome

- Historical alcohol abuse does not change outcome
- Recent alcohol use:
  - Reduces likelihood of getting treatment
  - Reduces likelihood of completing treatment
  - Does not appear to change sustained virologic response (SVR) when controlled for discontinuation
What is Addiction?

- Continued increasing repetitive stereotyped behavior despite mounting consequences that disrupts function in all realms of life
What Makes a Drug Addictive?

- Tolerance
  - Increasing dose to achieve desired effect
- Dependence
  - Physical withdrawal when stopped
- Reinforcement
  - Provides behavioral reinforcement (behaviors that occur during drug exposure increase)
Amphetamine
Cocaine
Opiates
Cannabinoids
Phencyclidine
Ketamine
Opiates
Ethanol
Barbiturates
Benzodiazepines
Nicotine
Cannabinoids

Opiates

ICSS

Hypothal

Lat-TEG

Raphé

Retic

Dorsal horn

To
Reinforcing and Addictive Drugs

- Psychomotor stimulants (dopamine)
- Opiates
- Sedative: hypnotics and alcohol (gamma-aminobutyric acid [GABA])
- Cannabinoids
- Phencyclidine (N-methyl-D-aspartate [NMDA] receptor)
- Hallucinogens?
- Nicotine and caffeine
The Disease Model of Addiction

- Assumes a broken part in the brain

Assets
- Removes blame and stigma
- Emphasizes medical treatment

Vulnerabilities
- Behavioral models are better than lesion models
- Removes responsibility from patients
- There is a volitional component to addiction
A Behavioral Model of Reinforcement

Law of Effect

- probability of a behavior can be increased or decreased depending on its immediate consequence.

Thorndyke 1913

environmental exposure → Behavior → environmental response

increase positive

decrease negative
A Behavioral Model of Addiction

environmental exposure → Behavior → environmental response

Internal “drive” (craving) → Reward-Reinforcement → Satiation
A Behavioral Model of Addiction

environmental exposure → Behavior → environmental response

Internal “drive” (craving) → temperament

life experience → disease → Reward-Reinforcement

→ Satiation
A Behavioral Model of Addiction

1. Environmental exposure → Behavior → Environmental response
2. Internal “drive” (craving) → Genes, Social connections, Religion, Occupation, Class, Geography, Social conventions → Reward-Reinforcement
3. Reward-Reinforcement → Satiation → Environmental exposure

Behavioral Model of Addiction
Core Elements of Addiction Treatment

- Conversion
- Detoxification
- Rehabilitation
  - Group
- Treatment of comorbid psychiatric conditions
- Relapse prevention
<table>
<thead>
<tr>
<th>Conversion</th>
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<tbody>
<tr>
<td>- Confrontation with a smile (motivational interviewing)</td>
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<tr>
<td>- Physician goals vs patient goals</td>
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<tr>
<td>- Quality of life</td>
</tr>
<tr>
<td>- Longevity vs comfort</td>
</tr>
<tr>
<td>- Function</td>
</tr>
<tr>
<td>- Treatment contract</td>
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</tbody>
</table>
Detoxification

- Stop the behavior
- Prevent withdrawal (pharmacological tapers)
- Diminish craving
- Treat potential accompanying disorders
  - Wernicke-Korsakoff syndrome
  - Endocarditis
  - HIV
## Rehabilitation

- **Damage control**
  - Social, occupational, and family intervention
- **Environmental change**
  - People, places, and things that are triggers
  - Structure
- **Extinguish the habit**
- **Prescribe a new program**

<table>
<thead>
<tr>
<th>Occupational</th>
<th>Social</th>
<th>Physical</th>
<th>Psychological</th>
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<tbody>
<tr>
<td>Vocational</td>
<td></td>
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<tr>
<td>Educational</td>
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Treat Comorbid Conditions

- Treat mood disorders
  - Medication and therapy
- Attend to life story
  - Psychotherapy and remoralization
  - Mobilize social supports
- Manage temperament
  - Practical suggestions and directive advice
Substituted Addiction

- Methadone, buprenorphine
  - Addiction with less disorder
  - Decreased reinforcement of behavior
  - Other addictions as models
    - Nicotine
    - Caffeine
- Nicotine patch, gum, and inhalers
Take-Home Messages

- Success for HCV treatment is dependent on treatment of depression and addiction
- Alcohol use leads to failed treatment and increased morbidity and mortality
- Integrated treatment is effective and improves outcome
- Addiction expertise is a necessary ingredient for success
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