Background

• Unhealthy alcohol use and human immunodeficiency virus (HIV) infection are not contraindications to initiation of direct-acting antiviral (DAA) therapy for chronic hepatitis C virus (HCV) infection.
• However, the extent to which receipt of DAA therapy and subsequent achievement of cure of chronic HCV are impacted by alcohol use and HIV co-infection status is unknown.

Objective

• To evaluate receipt of DAA therapy and HCV cure rates by alcohol use category and HIV status.

Methods

• The US Veterans Health Administration Birth Cohort, a national study of >4.5m individuals born between 1945-1965 and receiving care in the US Department of Veterans Affairs (VA) health system.
• Sample: All HCV antibody-positive patients (HCV+).
• Baseline: First outpatient visit date after 1 Jan 2014.
• Study period: From baseline to 31 May 2017; laboratory values to determine HCV cure were assessed through 30 Nov 2017.
• Excluded: individuals with negative HCV viremia prior to 1 Jan 2014.

Exposure groups

• Alcohol use categories: defined by Alcohol Use Disorders Identification Test-Consumption (AUDIT-C) questionnaire scores and validated ICD codes for alcohol use disorder (AUD, two outpatient or one inpatient of ICD-9 303.X or 305-305.03, or ICD-10 F10.10/20/21/22); assessed in year prior to baseline.
  • Abstinent: AUDIT-C 0.
  • Lower-risk drinking: AUDIT-C 1-3.
  • Hazardous/binge drinking: AUDIT-C ≥4 or reported ≥6 drinks on one or more occasions in the past year.
  • AUD: Alcohol use disorder diagnosis irrespective of AUDIT-C.
• HIV status: ICD-9 diagnosis (two outpatient or one inpatient of 042, 044, or V08).

Main Study Outcomes

• DAA receipt: Defined as any released prescription.
• SVR12: Sustained virologic response (absence of HCV viremia 12 or more weeks after HCV treatment (indicated HCV cure).

Statistical analysis

• Frequencies of DAA receipt and SVR12 were calculated by alcohol use category and HIV status.
• Logistic regression models were used to estimate associations between alcohol use and SVR12, stratified by HIV status.
• Models were adjusted for baseline age, stage of liver fibrosis (FIB-4), diagnosis of hepatic decompensation, and body mass index.

Sample

• Among 134,491 HCV+ patients, median age was 61 years, 97% were male, 55% were white, 40% were black, and 3,670 (3%) were HIV+.
  • Among HIV+ patients, 1,663 (45%) reported abstinence, 666 (18%) lower risk drinking, 203 (6%) hazardous/binge drinking, and 1,138 (31%) had an AUD.
  • Among HIV-uninfected patients, 55,284 (42%) reported abstinence, 24,807 (19%) lower risk drinking, 11,044 (8%) hazardous/binge drinking, and 39,686 (30%) had an AUD.

Results

• Frequencies of DAA receipt and SVR12 were calculated by alcohol use category and HIV status.

Fig 1. Percentage who received DAA therapy

<table>
<thead>
<tr>
<th>Alcohol use category</th>
<th>HIV+</th>
<th>HIV-</th>
</tr>
</thead>
<tbody>
<tr>
<td>Abstinent</td>
<td>48.5</td>
<td>44.5</td>
</tr>
<tr>
<td>Lower-risk drinking</td>
<td>45.8</td>
<td>47.1</td>
</tr>
<tr>
<td>Hazardous/binge drinking</td>
<td>55.9</td>
<td>51.4</td>
</tr>
</tbody>
</table>

Fig 2. Percentage who achieved SVR12

<table>
<thead>
<tr>
<th>Alcohol use category</th>
<th>HIV+</th>
<th>HIV-</th>
</tr>
</thead>
<tbody>
<tr>
<td>Abstinent</td>
<td>57.2</td>
<td>52.8</td>
</tr>
<tr>
<td>Lower-risk drinking</td>
<td>92.1</td>
<td>91.6</td>
</tr>
<tr>
<td>Hazardous/binge drinking</td>
<td>88.8</td>
<td>93.2</td>
</tr>
</tbody>
</table>

Conclusions

• HIV+ patients and abstinent or lower risk drinkers were more likely to receive DAAs compared to uninfected patients and hazardous/binge drinkers or those with an AUD.
• High SVR12 rates were observed across all alcohol categories, but HIV-uninfected patients with an AUD had modestly lower SVR12 than those who reported no alcohol consumption.
• Alcohol use, even harmful use, should not preclude HCV treatment.

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