The association between substance use and cirrhosis measured by transient elastography (TE) in an HCV monoinfected and HIV/HCV co-infected population

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Objective

We sought to determine whether a history of substance use among HCV+ and HCV/HIV+ patients confers a greater risk of liver cirrhosis measured by TE.

Background

About 20 to 30% of patients living with HIV in Canada are co-infected with hepatitis C virus (HCV) [1]. Co-infected individuals experience more rapid progression of liver disease and development of cirrhosis than monoinfected individuals [2]. In the management of HCV infected and co-infected patients, evaluation of fibrosis stage is critical. Transient elastography (TE) offers a non-invasive method to measure liver stiffness (scores measured in kilopascals [kPa]) which serves as a marker for fibrosis [3,4].

People with substance use, especially injection drug use, are especially at risk for HCV infection and co-infection. In Vancouver, British Columbia among people who inject drugs, HIV and HCV seropositivity are approximately 27% and 84%, respectively [5].

Methods

Study Participants

HCV and HIV/HIV co-infected adults (≥ 19 years old) referred for TE at a HIV/HCV outpatient clinic were recruited from October 2013 to August 2015.

Data Collection

Clinical and demographic data were collected by patient interview and HIV/ART-related factors from the BC Centre for Excellence in HIV/AIDS Drug Treatment Program. TE was performed on an Echosens™ FibroScan® 502 device according to the manufacturer’s guidelines by a certified operator [6]. Liver cirrhosis (F4) was defined as TE score ≥12.5 kPa [7].

Statistical methods

Categorical variables and continuous variables were compared using Chi-squared test or Fisher’s exact test and Wilcoxon rank sum test, respectively. Multivariable logistic regression modelling was used to identify factors associated with cirrhosis. Level of significance set at p<0.05.

Results

Table 1: Characteristics of study cohort

<table>
<thead>
<tr>
<th>Total N</th>
<th>298</th>
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<tbody>
<tr>
<td>Male - N (%)</td>
<td>235 (78.86)</td>
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<tr>
<td>Age, years - Median (Q1-Q3)</td>
<td>51 (46-58)</td>
</tr>
<tr>
<td>HIV/HCV co-infection - N (%)</td>
<td>197 (66.11)</td>
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<tr>
<td>HIV/HBV co-infection - N (%)</td>
<td>26 (18.12)</td>
</tr>
<tr>
<td>Time since HIV diagnosis, years - Median (Q1-Q3)</td>
<td>15 (10-20)</td>
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<tr>
<td>Time since HCV diagnosis, years - Median (Q1-Q3)</td>
<td>12 (4-19)</td>
</tr>
<tr>
<td>Pre-DAA treatment for HCV - N (%)</td>
<td>54 (68.12)</td>
</tr>
</tbody>
</table>

In bivariate analysis, alcohol, marijuana, cocaine, crack and crystal meth were not associated with a greater risk of cirrhosis; nor was HIV coinfection (p>0.10 for all)

Conclusion

Substance use among HCV+ and HCV/HIV+ patients in this cohort was not associated with greater risk of cirrhosis with the exception of current heroin use. Cirrhosis was independently associated with older age, receipt of pre-DAA HCV treatment, and hepatitis B co-infection.

References

6. www.fibroscan.com