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The effect of stimulant use on antiviral treatment in an integrated hepatitis clinic

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ABSTRACT

Objective: The objective was to determine the impact of stimulant use on antiviral treatment for chronic hepatitis C patients in an integrated hepatitis clinic.
Methods: A retrospective chart review of 449 consecutive patients seen in an integrated hepatitis clinic that included co-located mental health clinicians was performed. Psychiatric measures included drug use questionnaire, Beck Depression Inventory (BDI), Alcohol Use Disorders Identification Test-Consumption questions (AUDIT-C), urine drug screen and antiviral treatment outcomes. Patients with stimulant use were compared to patients with no drug use, other drug users and an unknown drug use group using χ^2 and analysis of variance tests.
Results: Over 15% of hepatitis C patients presenting to the clinic were using stimulants. Stimulant users had higher BDI and AUDIT-C scores. They were more likely to be followed by a co-located mental health clinician than other groups and were just as likely to initiate and finish antiviral therapy.
Conclusions: Recent stimulant use is common in hepatitis C patients presenting to a hepatitis clinic. Stimulant users were more depressed and used alcohol to a greater degree than nonusers but were as likely to start antiviral therapy. An integrated mental health/medical care approach appears to be effective in addressing this difficult-to-treat population.

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1. Introduction

Chronic hepatitis C affects approximately 4.1 million Americans and is a major cause of end-stage liver disease, hepatocellular carcinoma and increased need for liver transplantation [1,2]. Intravenous drug use (IVDU) is the most common route of transmission and currently accounts for most new infections [1]. Hepatitis C virus (HCV) infection is found in 50%–80% of IVDUs. Other populations with higher prevalence rates include those with alcoholic liver disease, alcoholics without liver disease, Veterans served by the Department of Veteran Affairs (VA) and the homeless [3–5]. Although the incidence of HCV peaked approximately 30 years ago, deaths from the complications of HCV continue to rise as the population ages. In fact, recent data indicate that, as of 2007, deaths from HCV exceeded those from human immunodeficiency virus infection (HIV) [6].

Successful antiviral treatment can reduce the risk of developing complications from chronic HCV and ultimately reduces morbidity and mortality [7]. Treatment with pegylated interferon and ribavirin is successful, leading to a sustained virologic response (SVR) in approximately 55%–85% of patients, depending upon genotype. With the recent introduction of direct-acting antivirals (boceprevir and telaprevir), rates of SVR have substantially improved for patients with genotype 1 [8,9]. It is expected that as additional protease and polymerase inhibitors become available, treatment will be even more effective [10]. Despite excitement over new antiviral treatments, barriers to evaluation and treatment of HCV continue to be a significant hindrance to reducing the overall burden from this disease. Substance use disorders in particular remain a significant barrier to receiving specialty care evaluation and antiviral treatment.

Substance use and psychiatric problems are common among patients with chronic hepatitis C. In a large study of 33,824 Veterans, El-Serag and colleagues found that 85.4% of HCV patients had a documented psychiatric or substance use disorder and 31% had a past-year inpatient psychiatric or substance use disorder hospitalization [11]. Several smaller, single-site studies show similarly high rates of psychiatric and substance use disorders [12–15].

Clinicians frequently defer or exclude from antiviral therapy patients who have psychiatric and substance use disorders due to worries that antiviral treatment may worsen psychiatric illness, lead to relapse of substance use [16] or lead to reduced medication adherence and thus worse antiviral treatment outcome. A large multisite study of Veterans evaluated for antiviral therapy found high rates of psychiatric and substance use disorders, with few receiving

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antiviral treatment [17]. Smaller, single-site studies from both VA and community clinics find that between 20% and 70% of patients are excluded from antiviral treatment due to psychiatric and substance use disorders [18].

Although substance use disorders remain a significant barrier to antiviral treatment, several studies have shown that patients with drug and alcohol use problems can complete antiviral treatment. Backmund and colleagues described a cohort of 50 IVDUs with HCV treated with either interferon-α2b monotherapy or interferon-α2b and ribavirin after opiate detoxification and found a response rate of 36% with good adherence to therapy [19]. Several other studies show similar results, with good adherence to medications and SVR rates on par with patients without substance use problems [20–23]. However, all of these studies were conducted in specialty mental health care settings or in settings where methadone was used, and few have included patients with stimulant (cocaine or methamphetamine) use.

Cocaine and methamphetamine use is a significant problem in the United States. According to the 2010 National Survey on Drug Use and Health, 1.5 million (0.6%) Americans age 12 and over used cocaine in the past month, and 1.1 million (0.4%) used methamphetamine or other stimulants. Cocaine and methamphetamine are stimulants that when acutely administered produce a similar clinical syndrome. Sweating, increased heart and respiratory rate, euphoria, hypervigilance, anxiety, tension and anger are common. Stimulants are highly reinforcing, sometimes leading to prolonged use as well as significant impairment in social and occupational functioning. Unfortunately, there are no specific medical treatments that have proven efficacy in reducing the misuse of stimulants, although standard psychosocial substance use treatments can be effective [24]. HCV patients with a history of IVDU have reduced clinical follow-up, but efficacy has not been shown to be reduced in those who start antiviral therapy. A recent study showed that many acutely infected HCV patients with IVDU were able to complete antiviral treatment and that outcome was not significantly impaired. This study included 20 patients who had injected methamphetamine, but no cocaine users were included in this study [21]. This study included mostly young subjects with new infections who are known to have antiviral response rates that are better than those chronically infected with HCV [25]. Similar to other studies, the patients were treated in the context of a formal substance use treatment setting. No data are available indicating how frequently patients presenting to a hepatitis clinic use stimulants, and data are limited regarding how frequently they initiate antiviral therapy and whether they are able to successfully complete treatment.

As the clinical syndromes of cocaine and methamphetamine use are similar, as is the potential impact on adherence to clinical care and treatment, we chose to combine these substances for the purpose of this study and thus use the term stimulants. The purpose of this study was to determine the extent of current stimulant use and the impact of stimulant use on engagement in care and receipt of antiviral therapy in an integrated hepatitis C clinic.

2. Methods

All data were collected retrospectively by chart review of 449 consecutive patients seen at the Minneapolis Veterans Affairs Medical Center (VAMC) with an initial appointment in the hepatitis clinic between January 3, 2005, and December 22, 2008. Antiviral treatment initiation and viral response were obtained through April 1, 2010. The study was approved by the institutional review board at the Minneapolis VAMC.

2.1. Integrated care clinic model

In order to address the complex needs of patients with chronic hepatitis C and comorbid psychiatric and substance use disorders, an integrated medical/psychiatric care clinic was developed and implemented at the Minneapolis VAMC. Core elements of the clinic include routine screening for psychiatric and substance use disorders, co-location of a mental health provider in the hepatitis clinic, staff training on addressing psychiatric and SUDs, and multidisciplinary meetings (approximately weekly) to discuss aspects of caring for patients with comorbid conditions. The mental health provider was an advanced practice nurse (APN) who was trained in mental health care. The APN collaborated with a general psychiatrist. The mental health provider was trained in administering evidence-based psychotherapies including cognitive behavioral and motivational enhancement therapy. In addition, the APN prescribed psychotropic medications as clinically indicated, and the general psychiatrist was available for consultation as needed. The APN also coordinated care with existing mental health providers if patients were currently being seen in specialty mental health care. The screening questionnaires were administered as part of routine clinical care to all patients who attended an initial appointment in the hepatitis clinic. The following screens were used: a drug-use questionnaire (DUQ) (screens for lifetime and past 6 months use of heroin, cocaine, cannabis, amphetamines, lysergic acid diethylamide/phencyclidine, and ecstasy; lifetime misuse of prescription drugs; chemical dependency and alcohol treatment), the Alcohol Use Disorders Identification Test-Consumption (AUDIT-C) [26] (AUDIT-C $\geq$4 indicates hazardous alcohol use), the Beck Depression Inventory (BDI) [27] (score $\geq$10 indicates depression) and a urine drug screen (UDS). Patients with positive screens were referred to the co-located mental health clinician for follow-up. In addition to the systematic screening and referral of patients to the mental health provider, all clinicians in the hepatitis clinic were trained in administering a brief intervention to address alcohol use and recommend abstinence from other recreational drug use.

Antiviral treatment decisions were made on a case-by-case basis based on the clinical judgment of the practitioners involved. No specific cutoffs or specific mental health criteria were used to exclude patients. Treatment criteria were consistent with published national guidelines [28].

2.2. Data collection and outcomes

All data were collected retrospectively by chart review. Outcomes evaluated included the following:

1. Demographic and psychiatric measures as indicated above at baseline
2. Recommendation for antiviral therapy defined as a clinician note offering or recommending antiviral treatment
3. Number of patients who received antiviral therapy defined as a prescription for antiviral treatment documented in the chart.
4. Dropout from care as defined by having at least one hepatitis clinic visit, having a follow-up appointment and not returning to care as of April 1, 2010.
5. Documented reasons for not offering antiviral therapy. No specific a priori reasons were assumed. We noted all documented reasons for not offering therapy and then categorized them in to having (a) mild disease, (b) medical problems, (c) social problems (i.e., housing problems, care-taking responsibilities), (d) substance use or psychiatric disorders and (e) patient noninterest.
6. Antiviral treatment outcome including (a) nonresponse, defined as no 2 log drop at week 12 of therapy or a positive polymerase chain reaction (PCR) at week 24; (b) relapse, defined as a negative PCR at the end of treatment and a positive PCR after the end of treatment; and (c) SVR, defined as a negative PCR 24 weeks after antiviral treatment completion.
7. Mental health visits to either the co-located mental health practitioners or specialty care mental health.