

**Original article:**

## **Assessment of Prevalence of Psychiatric Disorders in Patients with Hepatitis C Infection**

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### **ABSTRACT**

**Background:** HCV is a neuropathic ribonucleic acid (RNA)-based virus from the Flaviviridae family (which includes among other neurotoxic viruses the West Nile virus and the encephalitis viruses). Present study was conducted to assess the prevalence of psychiatric disorders in patients with hepatitis C infection.

**Materials and Methods:** The present study was conducted in the Department of Psychiatry, Santosh Medical College and Hospital, Ghaziabad, Uttar Pradesh, India. For the study, we selected patients whose blood sample was positive for antibody to HCV and have the presence of HCV RNA confirmed by the use of PCR. The patients were referred to the liver clinic for evaluation. An informed written consent was obtained from all the participants after verbally explaining them the procedure of study. No age limit was defined for selection of the subjects. The patients with ongoing health issues and systemic illness such as leukemia, tuberculosis, cerebral palsy was excluded from the study. A total of 70 patients were selected for the study. For the evaluation of psychiatric disorders in the patients, the patients were given a questionnaire to complete.

**Results:** A total of 70 subjects were included in the study. 45 subjects were male and 25 subjects were female. Mean age of the patients was 56.21 years. We observed that 13 patients had bipolar disorder, 10 patients had schizophrenic psychosis, heavy alcohol use was seen in 14 patients, PTSD was seen in 47 patients, substance use was observed in 36 patients and depression was seen in 59 patients. On comparing the results, we observed statistically non-significant results.

**Conclusion:** From the results of the present study, we conclude that the psychiatric disorders are highly prevalent in patients with Hepatitis C infection. Depression is the most common psychiatric disorder prevalent in these patients.

**Keywords:** Depression, Hepatitis, Alcohol Abuse, Substance Abuse.

### **INTRODUCTION**

HCV is a neuropathic ribonucleic acid (RNA)-based virus from the Flaviviridae family (which includes among other neurotoxic viruses the West Nile virus and the encephalitis viruses). HCV has 6 different viral genotypes (1-6) and possesses a very primitive enzymatic replication system that has an error rate of 1/100,000 (ie, an error in replication in 1 viral copy out of every 100,000 produced).<sup>1,2</sup> This high error rate along with the genetic heterogeneity of HCV may explain the inability of innate immunity to clear HCV in the majority of those infected. Chronicity of HCV infection occurs in about 75%-85% of those infected. This primitive replication machinery helps explain the resistance of HCV to antiviral therapies and difficulties in developing a vaccine against HCV

infection.<sup>3,4</sup> The World Health Organization currently estimates that 3% of the world's population is infected with the hepatitis C virus (HCV). In the past decade, it has been the leading cause of end-stage liver disease and the leading indication for liver transplantation in the developed world.<sup>5,6</sup> There is still a large asymptomatic population who are likely to develop clinical symptoms, and HCV-related mortality. Prevalence varies world-wide from around 1% to 2% in developed countries, up to around 9.6-13.6% in developing countries. It is estimated that 6% of the world's population are carriers of the hepatitis B virus (HBV), which is a major risk factor for hepatocellular carcinoma, incidence will continue to decline due to vaccination programs.<sup>7</sup> Hence, the present study was planned to assess the prevalence of psychiatric disorders in patients with hepatitis C infection.

## **MATERIALS AND METHODS**

The present study was conducted in the Department of Psychiatry, Santosh Medical College and Hospital, Ghaziabad, Uttar Pradesh, India. The ethical clearance for the study was obtained from the ethical board of the institute prior to commencement of the study. For the study, we selected patients whose blood work was positive for antibody to HCV and have the presence of HCV RNA confirmed by the use of PCR. The patients were referred to the liver clinic for evaluation. An informed written consent was obtained from all the participants after verbally explaining them the procedure of study. No age limit was defined for selection of the subjects. The patients with ongoing health issues and systemic illness such as leukemia, tuberculosis, cerebral palsy were excluded from the study. A total of 70 patients were selected for the study. For the evaluation of psychiatric disorders in the patients, the patients were given a questionnaire to complete. The questionnaire was designed as such to detect the current and past history of psychiatric illness and whether they were treated for the illness in the past. The questionnaire also included current and past history of alcohol abuse and substance use. After completion of the questionnaires, they were evaluated on the basis of the score. The data was stored for further statistical analysis.

The statistical analysis of the data was done using SPSS version 11.0 for windows. Chi-square and Student's t-test were used for checking the significance of the data. A p-value of 0.05 and lesser was defined to be statistical significant.

## **RESULTS**

Table 1 shows the demographic details of the participating subjects. A total of 70 subjects were included in the study. 45 subjects were male and 25 subjects were female. Mean age of the patients was 56.21 years. Table 2 shows the number of patients with psychiatric/ substance use disorder. We observed that 13 patients had bipolar disorder, 10 patients had schizophrenic psychosis, heavy alcohol use was seen 14 patients, PTSD was seen in 47 patients, substance use was observed in 36 patients and depression was seen in 59 patients. On comparing the results, we observed statistically non-significant results.

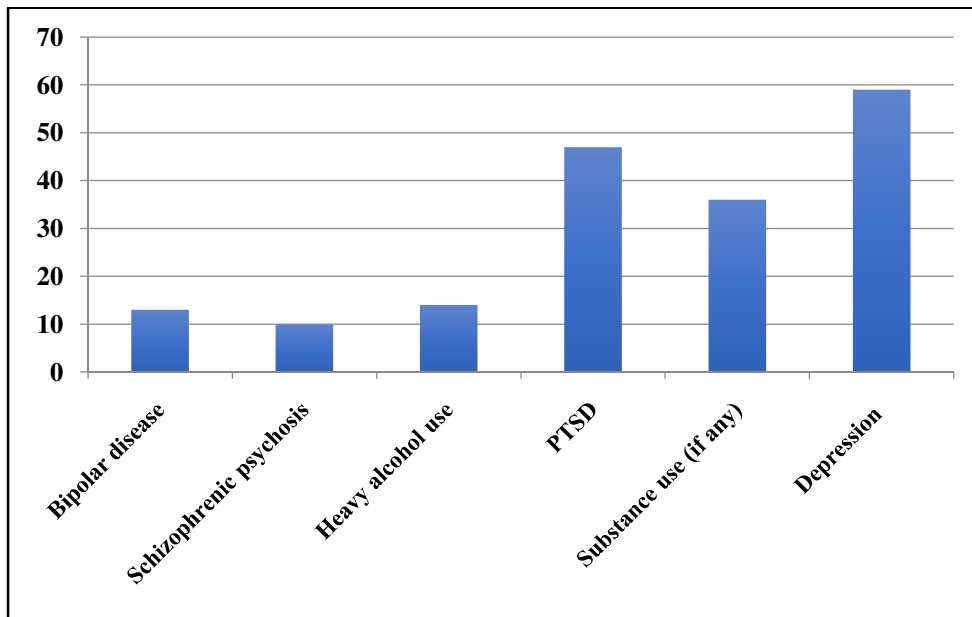
**Table 1: Demographic details of the participating subjects**

Characteristics	Number of patients
Total number of subjects	70
Number of male subjects	45
Number of female subjects	25
Mean age of the patients (years)	56.21

**Table 2: Number of patients with psychiatric/ substance use disorder**

Psychiatric/ substance use disorder	Number of patients	p-value
Bipolar disease	13	0.12
Schizophrenic psychosis	10	
Heavy alcohol use	14	
PTSD	47	
Substance use (if any)	36	
Depression	59	

**Fig 1: Number of patients with psychiatric/ substance use disorder**



## DISCUSSION

In the present study, we assessed the prevalence of psychiatric disorders in Hepatitis C patients. We observed that psychiatric disorders are highly common in these patients. The most common disorder in these patients is depression followed by substance abuse. The results were compared with previous studies. El-Serag HB et al identified all HCV-infected veteran patients who were hospitalized during 1992-1999 and searched the inpatient and outpatient computerized files for predefined psychiatric, drug-, and/or alcohol-use disorders. We then performed a case-control study among Vietnam veterans; controls without HCV were randomly chosen from hospitalized patients. They identified 33,824 HCV-infected patients, in whom 86.4% had at least one past or present psychiatric, drug-, or alcohol-use disorder recorded. However, only 31% had active disorders as defined by hospitalization to psychiatric or drug-detoxification bed sections. There were 22,341 HCV-infected patients from the Vietnam period of service (cases) who were compared with 43,267 patients without HCV (controls). Cases were more likely to have depressive disorders (49.5% vs. 39.1%), posttraumatic stress disorder (PTSD) (33.5% vs. 24.5%), psychosis (23.7% vs. 20.9%), bipolar disorder (16.0% vs. 12.6%), anxiety disorders (40.8% vs. 32.9%), alcohol (77.6% vs. 45.0%), and drug-use disorders (69.4% vs. 31.1%). It was concluded that several psychiatric, drug-, and alcohol-use disorders are commonly found among HCV-infected veterans compared with those who are not infected. Fireman M et al assessed prospectively the frequency of psychiatric and substance use disorders in patients presenting for initial assessment of a positive HCV antibody test result. A sample of 293 patients represented the majority of patients scheduled for their initial hepatology clinic visit at the Portland Veterans Affairs Medical Center between September 2002 and September 2003. The patient screening questionnaire, Alcohol Use Disorders Identification Test-Consumption (AUDIT-C), and the Beck Depression Inventory (BDI-II) were administered to all patients. At screening, 93% of the patients had a current or past history of at least 1 psychiatric disorder, and 73% had  $\geq 2$  disorders. The most common disorders included depression (81%), posttraumatic stress disorder (62%), any substance use disorder (58%), bipolar disorder (20%), and other psychotic disorders (17%). One hundred two patients (35%) had baseline BDI-II scores in the moderate-to-severe range of depression ( $>19$ ), and 61 (21%) had AUDIT-C scores indicating current heavy alcohol use ( $\geq 4$ ). It was concluded that psychiatric and substance use disorders are highly prevalent among veterans with chronic hepatitis C.<sup>8,9</sup>

Atesci FC et al compared asymptomatic hepatitis B virus carriers and healthy subjects in terms of their psychological state. Participants (43 asymptomatic hepatitis B virus carriers and 43 healthy comparison subjects) completed self-report questionnaires. Psychiatric disorders and psychosocial functioning were evaluated with structured clinical interviews and the Global Assessment of Functioning scale. Hepatitis B virus carriers were more likely to have psychiatric disorders than comparison subjects (30.2% vs. 11.6%). Also, carriers had significantly higher depression and anxiety scores and lower Global Assessment of Functioning scores than did comparison subjects. Worries about contamination and illnesses related to hepatitis B infection were associated with the presence of psychiatric disorder. The results suggest that asymptomatic hepatitis B virus carriers need emotional support. Quelhas R et al conducted a review to assess psychiatric problems in patients infected with hepatitis C before and during antiviral treatment with interferon-alphas. Studies were identified using computerized searches, with further references obtained from the bibliographies of the reviewed articles. Psychopathological syndromes that

occur during interferon-alpha treatment frequently have atypical features that may complicate their recognition using standard diagnostic criteria. In addition, prospective studies in this area often exclude patients with psychiatric disorders and have methodological disparities that make it difficult to develop guidelines for management of psychiatric side effects induced by interferon-alpha. Despite the high prevalence of chronic hepatitis C virus (HCV) infection in patients with psychiatric and substance use disorders, neuropsychiatric concerns often lead to the exclusion of such patients from interferon-alpha treatment, inappropriately depriving them of the potential benefits of this therapy. It was concluded that consultation-liaison psychiatrists should become familiar with the clinical spectrum of presentations associated with HCV infection as well as with related neuropsychiatric symptoms in order to promote the creation of multidisciplinary teams who specialize in the care of patients with HCV infections.<sup>10,11</sup>

### CONCLUSION

From the results of the present study, we conclude that psychiatric disorders are highly prevalent in patients with Hepatitis C infection. Depression is the most common psychiatric disorder prevalent in these patients.

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