

Prevalence of Depression in patients of Chronic Hepatitis B & C Presenting to Mayo Hospital Lahore

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ABSTRACT

Aim: To see the prevalence of depression in patients of chronic hepatitis B and C presenting to Mayo hospital Lahore.

Design: Cross-Sectional Study

Place and duration of study: Department of Medicine, Mayo Hospital, Lahore from August 2014 to February 2015

Methods: Using non-probability sampling 260 patients of Chronic Hepatitis B and C, presented to Outpatient department of Mayo Hospital Lahore, who fulfill inclusion criteria were enrolled in the study. Patients were evaluated for depression using a tool, Hospital Anxiety and Depression Scale (HADS) questionnaire.

Results: The mean age of patients was 40.58 ± 9.12 years and there were 142(54.6%) male and 118(45.4%) female patients. Out of total 260 patients, 193 had chronic hepatitis C and 67 patients had chronic hepatitis B. Among the 193 Hepatitis C patients, depression was seen in 123 (63.73%) and 37 (55.22%) out of 67 patients of hepatitis B had depression. The overall prevalence of depression was 160(61.5%). The prevalence of depression was associated with different age groups, gender and duration of disease.

Conclusion: In this study, the overall prevalence of depression in patients of chronic hepatitis B and C was considerably higher (61.5%) with statistically significant association in higher age groups (> 30 years of age) and male patients. The prevalence was also higher in patients having <2 years of duration of disease that is due to most of the patients came with < 2 years of onset of disease.

Keywords: Chronic Hepatitis B; Chronic Hepatitis C; depression, hospital anxiety and depression scale

INTRODUCTION

Hepatitis is defined as the inflammation of the liver often caused by a viral infection. Among these viruses, hepatitis C virus (HCV) and hepatitis B virus (HBV) infections account for a considerable portion of the liver diseases worldwide¹. An estimated amount of 170 million people are infected with the HCV worldwide². In Pakistan, the overall occurrence of HCV and HBV infection in general population is 4.8% and 2.5%, respectively, indicating a cumulative infection percentage of 7.6%. This is consistent with the ongoing high burden of chronic liver disease (CLD)³. Hepatitis virus can result in extra-hepatic manifestations including a broad number of cognitive deficits⁴.

Patients with hepatitis C are twice more prone to be marked with a psychiatric problem when compared with hepatitis B patients ($p= 0.01$)⁵. A local study

reported that the prevalence of depression was 72.6% in Hepatitis C patients and 58.6% in Hepatitis B patients⁶. Another study showed a significantly higher rate of depression in patients with chronic viral hepatitis than in healthy participants ($P = 0.003$). Results revealed that 19.8% patient in HBV group and 35.9% patient in HCV group were depressed⁷. An international study shows 86% depression in hepatitis C infected patients and 68% depression in hepatitis B⁸. Carta and colleagues showed the significant relation between psychiatric disorder such as major depressive disorder and hepatitis C in patients not treated previously with interferons and no history of substance abuse. They concluded that depression is a direct manifestation of HCV infection⁹.

In developing countries, like Pakistan, Interferon therapy (pegylated and conventional interferon) is still being used in public sector hospitals to treat chronic hepatitis C. Interferon has neuropsychiatric side effects including depression. After interferon therapy, the incidence of mortality and depression has been appeared to be as high as 0.02% to 3.4% and 17%, respectively¹⁰. Initiation of interferon therapy usually

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causes psychiatric disorders in the first month, so in most cases it is advisable to assess mental health of patients initially. An early management of depression remarkably affects adherence to the treatment¹¹.

The rationale of this study was to see the occurrence of depressive disorders in HCV and HBV patients. Local study was available about the severity of depression in hepatitis C and B patients and their effect upon the quality of life of these patients.⁶ This was studied at Shifa Hospital, Islamabad where the patients were different, as compared to our tertiary care public sector, Mayo Hospital Lahore, and had a small sample size, so we conducted study on a large population which was another rationale of this study.

Moreover, in light of above reported statistics, there was difference in the frequency of depressive disorders in patients with HCV (72.6% vs. 35.9%) while we did not find any comparable statistics for depressive disorder in HBV patients^{6,7}. This variable statistic for HCV motivated us to conduct this study. Hepatitis B has more association of chronic relapse and conversion to hepatocellular carcinoma but it has low frequency of depression so a more extensive study was required to see its frequency of depression. Furthermore, patients drop out during treatment can be prevented by early detection of patient's depression to enhance the compliance.

METHODOLOGY

A cross sectional study design was followed. The study was undertaken at medical outdoor, Mayo Hospital Lahore from August 2014 to February 2015. Non-probability purposive sampling was used. 260 patients were taken. The sample size was calculated using 80% power of study with a significance level of 6% and expected percentage of depression was 58.6% in patients with hepatitis B.⁶ All of the patients with age between 18 and 65 years having chronic HCV and HBV (diagnosed by the presence of positive serologic markers for at least 6 months including HBsAg by ELISA (enzyme-linked immunosorbent assay) and HBV DNA (deoxyribonucleic acid) by PCR (polymerase chain reaction) for HBV and anti-HCV antibodies by ELISA and HCV RNA (ribonucleic acid) by PCR for HCV were admitted in the study.

The patients who are administered anti-depressant therapy, or who were having any other neurological disorder (severe depression or psychosis) or psychiatric illness or assessed on the basis of past clinical record and history, with liver cirrhosis (Child-Pugh stages B or C) diagnosed on ultrasound abdomen, or patients with liver failure, or those patients with other severe chronic diseases

(e.g. ischemic heart disease, cancer, stroke) established on history and review of previous treatment record, patients with the disease of liver of etiology other than HBV or HCV (including alcoholics) excluded by history and patients already on interferon therapy and pregnant women were also excluded.

Informed consent was obtained and demographic profile (name, age, contact no.) was taken from every participant. After enrolling patients, they were assessed for depression using Hospital Anxiety and Depression Scale (HADS) questionnaire. The HADS questionnaire contains fourteen (14) questions. Each question had 4 choices (0–3). The minimum score of depression in this tool was 0 while the maximum score in the questionnaire was 21. If score ranges from zero to seven (0-7) no depression is present. Score ≥ 8 was taken as depression. A validated translated Urdu version of this scale was used in the study.¹² Data was analyzed by SPSS version 20. The qualitative data such as gender and depression in HBV and HCV was presented in form of frequency and percentage. Mean \pm S.D was calculated for quantitative data like age. Data was stratified for age, gender and duration of disease. Post stratification chi-square test was applied for statistical analysis and a p-value of less than or equal to 0.05 ($p \leq 0.05$) was taken as significant.

RESULTS

The average age of patients was 40.58 ± 9.12 years where minimum age is 27 years and maximum age is 60 years. There were 28 (10.8%) patients aged 18-30 years, 196 (75.4%) patients were 31-50 years old and 36 (13.8%) patients were 51-65 years of age. In this study there were 142 (54.6%) male and 118 (45.4%) female patients with higher males as compared to females. There were 197 (75.8%) patients who had disease within 2 years of duration, 53 (20.4%) patients had 2-4 years duration of disease and 10 (3.8%) patients had duration of disease greater than 4 years. Depression in patient was assessed using a tool, Hospital anxiety and depression scale (HADS) so we found that HADS ≤ 7 was present in 100 (38.5%) patients while HADS ≥ 8 was seen in 160 (61.5%) patients.

Out of total 260 patients, 193 had chronic hepatitis C and only 67 patients had hepatitis B. Among 193 Hepatitis C patients, depression was seen in 123 (63.73%) and 37 (55.22%) out of 67 patients of hepatitis B had depression. The overall prevalence of depression was 160 (61.5%) (Table I). Data was stratified over age, gender and duration of disease to overcome effect modifiers. The prevalence of depression in age groups 18-30 years was 16.2%,

in age group 31-50 years the prevalence of depression was 65% and in age group of 51-65 the prevalence of depression was 18.8%. Using chi-square test we found a significant association in depression and higher age groups, p -value ≤ 0.001 . (TableII). The prevalence of depression was significantly lower in females (40%) as compared to male patients (60%), p -value =0.027 (Table-III). The prevalence of depression in patients with disease duration < 2 years, 2-4 years and > 4 years was 70.6%, 26.2% and 3.1% in this study. There was significant association in duration of disease and presence of depression, p -valve = 0.001 (Table-IV).

Table: Prevalence of depression

	n	Patients with Depression	Patients without Depression
Hepatitis B	67	37 (55.22%)	30 (44.77%)
Hepatitis C	193	123 (63.73%)	70 (36.26%)
Total	260	160 (61.53%)	100 (38.46%)

Table-II: Comparison of depression in different age groups

Age group (years)	Depression		Total
	Yes	No	
18-30	26(16.2%)	2(2%)	28(10.8%)
31-50	104(65%)	92(92%)	196(75.4%)
51-65	30(18.8%)	6(6%)	36(13.8%)
Total	160(100%)	100(100%)	260(100%)

Pvalue ≤ 0.001

TableIII: Comparison of depression in male and female patients

Gender	Depression		Total
	Yes	No	
Male	96(60%)	46(46%)	142(54.6%)
Female	64(40%)	54(54%)	118(45.4%)
Total	160(100%)	100(100%)	260(100%)

Pvalue = 0.027

Table-IV: Comparison of depression in relation to duration of disease

Duration of disease group	Depression		Total
	Yes	No	
<2 years	113(70.6%)	84(84%)	197(75.8%)
2-4 years	42(26.2%)	11(11%)	53(20.4%)
>4 years	5(3.1%)	5(5%)	10(3.8%)
Total	160(100%)	100(100%)	260(100%)

Pvalue = 0.001

DISCUSSION

Chronic hepatitis B and C are highly prevalent nowadays and the leading health related issue being faced by Pakistan¹³. Currently, no vaccine is present to protect against hepatitis C unlike hepatitis B. The main aim of treatment is to attain a 'sustained virologic response (SVR)', this means that no

detectable and observable virus is present in blood six months after the end of treatment. 'Cure' is a suitable term to use for those patients who have attained a sustained virologic response. The cure rates ranges from 52% to 90% with peg-interferon and ribavirin combination therapy but this mainly depends upon the hepatitis C genotype¹⁴. In recent treatment advances, antiviral medicines called protease inhibitors, polymerase inhibitors and direct-acting antivirals (DDAs) are now being used, which has further improved cure rates in hepatitis C patients¹⁵.

Our study displayed that out of total 260 patients, 193 had chronic hepatitis C and 67 patients had chronic hepatitis B. Among the 193 Hepatitis C patients, depression was seen in 123 (63.73%) and 37 (55.22%) out of 67 patients of hepatitis B had depression. The overall prevalence of depression was 160(61.5%).

The mean age of patients according to Noori S, et al was 45.6±17.3 years. The diagnosed cases that were infected with HBV constitutes almost two-thirds of the total. They reported that out of 4455 of cases 63.6% were male and rest of 36.4% were females.¹⁶ Other study by Alashek and colleagues indicated higher prevalence of male comparing with females i.e. 58% vs. 42%¹⁷. One more study reported higher mean age but similar findings of gender variations, i.e. 345 patients altogether (169 female, 176 male; range 10–81 years, and, mean age 53.3 ± 12.7 years).¹⁸ The findings of our study are similar as compared to above cited studies. In our study there were 142(54.6%) male and 118(45.4%) female patients with higher males as compared to females. The average age of patients was 40.58±9.12 years.

Qureshi and associates conducted a study on a total of 206 participants who were split up in 3 groups. The Group-I having patients with chronic hepatitis C, n=95; number of patients in group-II having chronic hepatitis B were twenty nine, n = 29 and group-III that have healthy subjects, n = 82. They were compared together for sex, age, social and economic status and were equated for severity and frequency of depression as quantified by HADS. A small extent of depression was present in all of the above demarcated groups. The frequency of depression in group-I, group-II and group-III were 72.6%, 58.6% and 37.8% respectively (p value < 0.001)⁶.

AlHuthail et al demonstrated that in Saudi Arabian patients with hepatitis C there was an increased occurrence of psychiatric problems as compared to the patients with hepatitis B and control. The patients with hepatitis C were twice as likely to be marked with psychiatric problems compared with

hepatitis B patients ($P=0.01$). They highlight the importance of collaboration between psychiatrists and hepatologists in order to enhance the quality of life in these patients¹⁹.

In addition to human immunodeficiency virus (HIV), Hepatitis C Virus is amongst the few infections, which is steadily linked to psychological disturbances. The occurrence of depression in patients with HCV is likely to be much higher when compared to general population^{20,21}.

Alian et al did a cross sectional study on 205 patients in Iran. Of these 205 patients, 51 cases had hepatitis C infection and 154 cases had hepatitis B. They found that the prevalence of depression was 86% in hepatitis C infected patients and 68% in patients with hepatitis B ($p<0.05$). The frequency of severe depression was 28.7%, moderate depression was 57.3% and mild depression was 14% ($p<0.05$). The percentage of depression in patients receiving Interferon was 100%, in recipients of interferon-ribavirin it was 94.4%, in lamivudine recipients the prevalence was 64%, and in patients who receive no drug the prevalence was 66.7%. The frequency of depression was significantly more in those patients receiving an interferon therapy ($p<0.05$)⁸.

Patients having infection of chronic hepatitis C virus are more prone to psychiatric disorders than the general population. Fatigue and depression should be duly investigated and regulated in patients with HBV and HCV in order to improve health related quality of life (HRQL). Patients with HCV infection have complex neuropsychiatric and psychosocial problems. The former mentioned issues are a challenge for management of Hepatitis C infection and they may affect the patient's care significantly as well as may alter the course of the disease. A multidisciplinary approach, a supportive environment, and a nonjudgmental healthcare team are required for optimal medical and psychosocial management of patients with HCV. Depression and fatigue must be properly investigated and managed in HCV patients in order to improve HRQL^{22,23}.

Hepatitis C is more prevalent in Punjab province of Pakistan²⁴ and as we see that Hepatitis C patients are more prone to develop depression so we shall be more vigilant in early diagnosis and timely treatment of depression in these patients. Increased prevalence of depression in patients with hepatitis C and hepatitis B suggests that more surveillance is to be rendered for these patients for psychiatric monitoring. Early treatment of depression may support patients to prevent such psychiatric disorders.

CONCLUSION

In this study, the prevalence of depression in patients with hepatitis C and hepatitis B was considerably higher (61.5%) with statically significant association in higher age groups (> 30 years of age) and male patients. The prevalence was also higher in patients having <2 years of duration of disease because most of the patients came with < 2 years of onset of disease. Due to considerably high statistics of anxiety and depression we must collaborate with psychiatrists to reduce the risk of depression to decrease the associated threat of morbidity and mortality. Moreover, it is beneficial and essential in management of disease that depression screening is to be done in patients with chronic hepatitis C and hepatitis B.

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