SEVERITY OF DEPRESSION IN PATIENTS OF HEPATITIS C VERSUS CONTROLS

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ABSTRACT

Objective: To assess and compare the severity of depression, in cases of hepatitis C and matching controls; before initiation of interferon therapy.

Study Design: Case control study.

Place and Duration of Study: This study was conducted at Combined Military Hospital, Muzaffarabad from 1st April 2009 to 31st August 2011.

Patients and methods: After informed consent from participants, 190 consecutive cases of Hepatitis C (PCR positive), who had not yet received interferon therapy, along with 200 controls (PCR negative); were included in the study. Participants were not communicated the report of PCR status, before measurement of depression. Demographic data was recorded and diagnosis and severity of depression was determined with international classification for diseases (ICD-10) depression criteria and Beck Depressive Inventory (BDI-21).

Results: The mean age of Hepatitis C patients (n=190) was 35.5 ± 12.708 with range of 14 to 57 years, while that of control subjects (n=200) was 37.5 (SD = 10.945) with range of 17 to 60 years. Out of 190 cases, 67 (35.3%) had scores in moderate to severe range of depression (20-63), while 123 (64.7%) had scores in minimal to mild range. On the other hand, amongst 200 control subjects 30(15%) had scores in moderate to severe range (20-63), while 170 (85%) had scores in minimal to mild range (0-19).

Conclusion: Compared to control subjects, the severity of depression is high in cases of Hepatitis C; even before interferon therapy.

Keywords: BDI-21, Depression, Hepatitis C.

INTRODUCTION

Hepatitis C virus (HCV) infection has captured tremendous attention as a global health crisis. It is estimated that approximately 170 million people are infected worldwide which is equivalent to 3% of the world's population[1,2]. The wave of increased HCV-related morbidity and mortality that we are now facing is due to the result of an unprecedented increase in the spread of HCV during the 20th century. Main reasons are re-using of unsterilized needles and syringes, malpractice of unqualified dentists, widespread availability and the illicit use of injectable drugs[3].

Like any serious illness, hepatitis C adversely affects the mental health of sufferer. People with hepatitis C experience psychological distress, with depression and substance abuse being the most frequent and clinically important issues. Many published studies[4-11] have found elevated rates of psychiatric illness in patients suffering from hepatitis C. In a retrospective review study on 33, 824 veterans suffering from hepatitis C, El-Serag et al[4] found that 49.5% had depression. In a large sample of veteran[5], HCV-infected patients were 1.5 to 2 times more likely than controls to have a lifetime history of depression. Rates of depression in other studies on patients suffering from hepatitis C have been reported in the range of 22% to 49%[6-8]. These rates are higher than the 16.6% lifetime prevalence of depression reported in the general population[9-12].

In Pakistan, a study[13] found that the frequency of depression among hepatitis C patients was 90% with 47% patients having depression even before starting interferon. This study reflects the frequency of depression in hepatitis C patients, with higher levels of

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depression in patients before as well as after interferon therapy.

However there were no clear inclusion/exclusion criteria or matching controls in the above mentioned studies. Moreover, the issue of severity of depression was not addressed. Therefore, a need was felt to assess the severity of depression in cases of hepatitis C in comparison to control subjects. Timely assessment of severity of depression in these cases is likely to improve their management and prognosis.

The aim of this study is to find the severity of depression, in hepatitis C patients; who had not yet received interferon therapy and compare it with matching controls.

PATIENTS AND METHODS

After approval of hospital Ethics committee, the study was conducted at Combined Military Hospital, Muzaffarabad from 1st September 2009 to 31st August 2010 in collaboration with department of Medicine and Pathology. It is a 250 bedded tertiary care hospital with facilities of testing for hepatitis C (Anti HCV for screening and PCR for confirmation of diagnosis).

Cases (PCR positive) and controls (PCR negative), having age 13 years and above were included in the study. Those having past history of any other psychiatric disorder, except depression; any chronic organic disease, exposure to recent stressful life events having clear temporal relationship with onset of depressive symptoms, substance abuse, those on therapeutic drugs with potential to cause depression and non-consenting individuals were excluded from the study. Individuals who received or were already on interferon therapy were also excluded.

Informed consent was taken from all willing participants. The final sample consisted of 190 cases (88 male and 102 females) along with 200 controls (80 males and 120 females). None of the participants was communicated the report of PCR status, before measurement of depression. Socio-demographic data and brief history (age, gender, marital status, past and family history of depression) was recorded with the help of a proforma designed for this purpose. In addition to brief clinical assessment, International classification of diseases (ICD-10); diagnostic criteria and Beck Depressive Inventory (BDI-21) was used to diagnose and measure the severity of depression. BDI-21 is a commonly used tool to assess the depression and its severity. It has proven reliability and validity and has already been used extensively in studies investigating depression in hepatitis C patients[9,14,15]. Moreover, its urdu version is also readily available and already being used in local population. It has 21 items which categorize depression into minimal, mild, moderate and severe range, according to obtained scores as shown in table-1.

Table-1: Beck depressive inventory (BDI-21) reflecting range of depression.

BDI score	Severity of depression
0-13	No or minimal depression
14-19	Mild depression
20-28	Moderate depression
29-63	Severe depression

Cases and control patients finding difficulty in understanding BDI-21 items were helped by the author. Depression was labeled as severe (29-63), moderate (20-28), mild (14-19) and minimal (0-13) based on the scores obtained, on BDI-21. Data was analyzed with SPSS version-17.

RESULTS

The mean age of PCR positive cases (n=190) was 35.5 (SD = 12.708) with range of 14 to 57 years, while that of PCR negative controls (n=200) was 37.5 (SD = 10.945) with range of 17 to 60 years. The socio-demographic and clinical characteristics of cases and controls are shown in table-2,3.

Both groups had a broad distribution of educational background. Participants in control group seem to be relatively more educated as compared to cases. Age range, gender and marital status was similar in both groups. There

was no statistically significant difference in socio-demographic variables between cases and controls.

Compared to controls, more cases had depression in moderate and severe range; which was statistically highly significant (*p*-value <0.001 and <0.048 respectively. In control group a higher number had minimal depression *p*-value< 0.001; which was statistically highly significant. In the patient group 41 (21.6%) (13 males and 28 females) had one or two episodes of depression in the past; while in the control group 23 (11.5%) (6 males and 17 females) gave a past history suggestive of depression, the difference was statistically significant (*p*-value=0.007). As far as family history of depression was concerned 13 (6.8%) (5 males, 8 females) had a first degree relative suffering from depression, while in the control sample 15 (7.5%) (3 males and 12 females) gave a positive family history of depression. However, the difference was not statistically significant (*p*-value= 0.801)

DISCUSSION

This study has clearly shown that as compared to controls, the cases of hepatitis C, suffer from relatively more severe depression even before exposure to interferon therapy. 35.3% cases versus 15% controls, had depression in moderate to severe range. Statistically, the difference was highly significant. In many of the previous studies[5-7,9,10,13-15], depressive morbidity was found in the range of 24% to 70% in patients of Hepatitis C. However, those studies did not focus on the issue of severity of depression; in pre-interferon patient population. Moreover, despite a high prevalence of depression in general population[12] no matching control group was considered; for the sake of comparison.

Dwight et al[5] found that in 50 patients with hepatitis C, who were evaluated with structured interviews and standardized rating scales; 28% had depression. However, the sample size in their study was small and there was no control group for comparison. Lee et al[6] in a retrospective

Table 2: Socio-demographic features of the participants of control and hepatitis C patients.

No of participants	Cases (n=190)	Controls (n=200)	*P*-value
Age	35.5 (SD = 12.708)	37.5 (SD = 10.945)	0.0961
Education			
No formal education	19	9	0.187
Under matriculation	29	31	0.619
Intermediate	96	102	0.926
Graduates and above	46	58	0.285
Gender			
Males	88 (44 %)	80 (40 %)	0.208
Females	102 (56 %)	120 (60 %)	
Marital status			
Single	83 (43.7 %)	88 (44 %)	0.950
Married	107 (56.3 %)	112 (56 %)	

Table-3: Severity, past and family history of depression among controls and cases of hepatitis C.

Severity	Cases (n=190)	Controls (n=200)	*p*-value
Severe	19 (10 %)	9 (4.5 %)	0.048
Moderate	48 (25.3 %)	21(10.5 %)	< 0.001
Mild	41 (21.6%)	33(16.5%)	0.201
Minimal	82 (43.1%)	137(68.5%)	< 0.001
Past history	41 (21.6%)	23 (11.5%)	0.007
Family history	13 (6.8%)	15 (7.5%)	0.801

chart review of 359 patients, who had not received interferon therapy, found that 24% had depression. Despite a large sample size, their study was having issues, inherent in most of the retrospectively designed studies. A prospective study conducted by Gohier[7] and colleagues in France examined 71 patients referred for interferon therapy and found 24% to have a prior history of depression. Interestingly in our study 21.6% of cases and 11.5% controls also suffered from depression in the past. Kraus[8] and colleagues examined 113 patients with chronic hepatitis C who were without evidence of de-compensated liver disease and found that 22.4% of patients demonstrated positive depression scores using the Hospital Anxiety and Depression Scale. Similar to this study, none of the cases, in our study; had de-compensated liver disease. However, inclusion of control group provided a better idea of relative depressive morbidity. Hunt et al[9] prospectively evaluated 28 subjects with hepatitis C, and by using the Beck Depression Inventory; found that 30% suffered from depression. A small sample size and lack of control group were limitations of this study. Yovtcheva[10] and colleagues studied 306 veterans untreated for hepatitis C and found 28% to have depression. Although this study was similar in terms of depressive morbidity and measurement of depression before interferon therapy, however; lack of clear inclusion /exclusion criteria; was a limitation; despite its large sample size. People with a past history of psychiatric illness, in particular depression, are more vulnerable to become depressed on treatment[16]. As mentioned previously, our study also found that 21.6% of cases suffered from depression in the past. Yates and Gleason[17] found that in a study of 78 patients who were HCV positive, the main reasons for psychiatric consultation was presence of depressive symptoms. Although this study highlighted the significance of depression as a management issue. However, it did not mention the severity of depression and relatively small sample size limited generalization of its finding. Furthermore, populations acquiring HCV[18] tend to be from backgrounds that can lead them to have a higher level of depression regardless of treatment with interferon. This evidence demonstrates that the HCV population is a vulnerable group, with peculiar socio-demographic background. In the present study, some of the socio-demographic factors were addressed. Both groups, cases and controls; had a broad distribution of educational background. Age range and marital status was similar in both groups. However, participants in control group seem to be relatively more educated as compared to cases, although not to a statistically significant level. It is not very clear, but probably; the level of education may improve the knowledge and skills to avoid the risk factors of the disease. Although not an objective of this study but more female cases had scores in moderate to severe range. This observation might need further investigations, but is somewhat in line with the generally agreed observation that depression is relatively more prevalent in females. Finally, the findings of all studies should be interpreted with caution due to the differences in methodologies. Other issues include the sample size, presence or absence of control group in each study, the method of depression measurement e.g. clinician rated versus self-rated; and how each researcher defined depression e.g. clinical diagnosis or cutoff point on a depression scale. In the present study clinical assessment followed by ICD-10 diagnostic criteria and BDI-21 were used to measure and categorize depression. Since depression is one of the side effects of the alpha-interferon therapy[19], therefore; prior assessment of depression and its severity can guide a wise management plan.

Limitations

This is a tertiary care hospital based study, therefore; caution is recommended in generalizing its finding, to other health care settings.

Implications

Hepatitis C patients, should be assessed for severity of depression prior to initiation of

interferon therapy. Future studies on the topic may use case control designs with larger sample sizes to assess the issue of severity of depression.

CONCLUSION

A significant number of Hepatitis C cases, suffer from relatively severe depression; even before commencement of interferon therapy.

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