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DEPRESSION;

FREQUENCY OF DEPRESSION AMONG PATIENTS OF CHRONIC LIVER DISEASE ATTENDING A TERTIARY CARE PRIVATE HOSPITAL OF LAHORE

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ABSTRACT… Background: Chronic Liver Disease is frequently related with psychiatric co morbidity disorders like depression and anxiety. Psychological disorders are a direct manifestation of Hepatitis C infection. **Objectives:** The objective was to assess the frequency of depression among patients of CLD presenting to the Shalamar Hospital, Lahore a tertiary care private institution. **Study Design:** Cross-sectional study. **Setting:** Shalamar Hospital Lahore, Pakistan a tertiary care private institution. **Period:** Four months period (June till September 2015). **Methods:** It was carried out on a convenience sample of 200 patients admitted in Shalamar Hospital, Lahore. The HADS questionnaire was used to assess the frequency of depression among the patients suffering from chronic Liver Diseases. The selected participants were meticulously briefed and signed informed consent was acquired. Selected patients were further comprehensively briefed about the study and confidentiality, anonymity and privacy of the participants was preserved. Ethical approval was sought from Institutional Ethical Review Board of Shalamar Institute of Health Sciences. The data entry and statistical analyses were done using SPSS version 20. **Results:** The response rate was 97%. Amongst all, 53% (n = 102) were males and 47% (n = 91) were females. About 80% (n = 155) were married where as 20% (n = 38) were unmarried. Among all patients of chronic liver disease 65% (n = 124) were positive for Hepatitis C Virus Antibody, while 25% (n = 49) were positive for Hepatitis B S Antigen. Of all the participants 32% (n = 61) received blood transfusions and almost 58% (n = 111) had a close family member who suffered from Hepatitis C. About 53% (n = 102) of the patients were suffering from borderline or clinical depression ($p < .000$), whereas 56% (n = 108) of the participants suffered from borderline or clinical anxiety ($p < .000$). **Conclusion:** Patients suffering chronically with Hepatitis C have higher than normal occurrence of depression and anxiety symptoms.

Key words: Chronic Liver Disease, Hepatitis C, Hepatitis B, Depression, Anxiety.

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INTRODUCTION

Chronic liver diseases (CLD) are the foremost reasons of disease, disability and deaths worldwide among many others.[1,2,3] Patients who suffer from chronic liver disease, predominantly those with cirrhosis and end stage liver diseases experience several potentially incapacitating impediments that can have a noteworthy impact on quality of life.[1,2] The etiologic agents of chronic liver disease include viruses (Hepatitis B and C), fatty liver, alcohol, autoimmune hepatitis.[1,3,4,5] Chronic liver diseases are frequently related with psychiatric co morbidity disorders like depression and anxiety.[4,5] A projected 170 million people are carrying hepatitis C virus worldwide.[6,7,8] In Pakistan, the frequency of Hepatitis B and C infection in general population is 2.5% and 4.8% correspondingly, representing a cumulative prevalence of 7.6%.[6] This is consistent with the constantly soaring burden of chronic liver disease.[6] Patients with hepatitis C are two times more prone to manifest with psychiatric predicament when compared with patients of hepatitis B ($p= 0.01$).[6]

Depression is one of the prime causes of disability in the mature population and it is likely to become the second leading source of disability in all age groups by the year 2020.[5] Clinical depression, is a psychological disorder illustrated by an insidious

and constant low mood that comes with low self esteem and anhedonia.[4] CLD has been historically related to depression.[4,5,9] The prevalence of depression among patients of Hepatitis C and Hepatitis B was 73% and 59% approximately in Lahore.[6] Depression is a direct manifestation of hepatitis C virus infection.[6,7,8] Earlier management of depression may support patients to avert such psychiatric disorder.[6] Development of extra-hepatic symptoms of chronic infection with Hepatitis C also include anxiety disorders.[2,5,8] Frequency of depression among patients of chronic liver disease is vital to ensure compliance of treatment. Early treatment of depression among patients of chronic liver disease improves morbidity and consequently quality of life. Few studies are available in private sector institutions of Lahore on this particular subject. This study therefore assessed the frequency of anxiety and depression both among patients of Chronic Liver Diseases presenting to the Shalamar Hospital Lahore a tertiary care private institution.

MATERIALS AND METHODS

This cross-sectional study was done to assess the frequency of depression among patients of chronic liver disease presenting at Shalamar Hospital, Lahore. The combined prevalence of Hepatitis B and C in Pakistan 7.6%.[10,11] Assuming the design effect to be 1.5, the calculated sample size was 161 on 95% confidence level using OpenEpi. However, this study was conducted on a convenience sample of 200 available patients to better generalize the results to local context. The Modified Hospital Anxiety Depression Questionnaire was administered on admitted patients in Shalamar Hospital, Lahore during the four months period (June till September 2015). Numerous studies have established the accuracy of the HADS questionnaire.[12,13,14] This questionnaire includes a set of 14 questions seven each for anxiety and depression.[7,9] The HADS questionnaire takes only 2 to 5 minutes to be completed.[12] The diagnostic precision differs for depression and anxiety[13] but the sensitivity and specificity for both HADS-Anxiety and HADS-Depression were roughly 80% very comparable to the sensitivity and specificity achieved by the General Health Questionnaire.[13] Each item in HADS questionnaire is responded on a four point ranging from 0 to 21 for anxiety and depression respectively. A score of 0 to 7 stands normal whereas a score of 11 or higher indicates presence of a mood disorder.[12] The selected participants were meticulously briefed and verbal, written and informed consent was obtained and signed. Confidentiality anonymity and privacy of the participants was maintained. Ethical approval was sought from Institutional Ethical Review Board of Shalamar Institute of Health Sciences. The data was entered in SPSS version 20 for statistical analysis.

RESULTS

The HADS questionnaire was distributed to 200 clinically diagnosed patients of chronic liver disease. The response rate was 97% (n = 193). The average age of the participants was 43.8± 14.9. Amongst all, 53% (n = 102) were males and 47% (n = 91) were females. About 80% (n = 155) were married where as 20% (n = 38) were unmarried. Almost 83% (n = 160) were admitted via outdoor patients department where as 10 %(n = 19) landed via emergency and only 7 %(n = 14) were referred. Another 9% (n=17) suffered from further causes of Chronic Liver Diseases including alcohol related causes, whereas 1% (n=2) had a co infection of hepatitis B virus in addition to hepatitis C virus. Among all patients of chronic liver disease 65% (n = 124) were verified for Hepatitis C Virus Antibody, while 25.3% (n = 49) were positive for Hepatitis B S Antigen. Among all 26% (n=50) were confirmed for Hepatitis C on PCR and ELISA whereas, 21% (n=41) were positive for Hepatitis B e Antigen. Approximately, 11% (n = 20), admitted to the regular consumption of alcohol. Of all the participants 32% (n = 61) received blood transfusions and almost 58% (n = 111) had a close family member who suffered from Hepatitis C. About 11% (n = 21) of the participants admitted of having multiple sexual partners. Of all the patients suffering from Chronic Liver Diseases 26% (n=50) had undergone a nose piercing, ear piercing or any other risky procedure at the hands of a non certified practitioner. No more than 9% (n=17) of the patients of Chronic liver disease were advised referrals to psychiatrist or psychologist for emotional help, whereas

12 % (n=23) admitted to seek medical advice themselves due to psychiatric issues. Nearly 20% (n=39) of the patients admitted of facing severe panic attacks while facing heights or a social gathering. Nearly 9% (n=17) of the patients admitted of having paranoid thoughts like people conspiring against them without them necessarily saying so. About 17% (n=32) of the patients admitted having suicidal thoughts. Table-I shows the frequency of classical physical signs of chronic liver disease among the participants.

According to hospital anxiety and depression scale 53% (n = 102) of the patients were suffering from borderline or clinical depression (p < .000). Furthermore, 56% (n = 108) of the participants suffered from borderline or clinical anxiety (p < .000). Table-II and III show the association of depression and anxiety with Chronic Hepatitis C and B. Seventeen cases of chronic liver diseases due to additional reasons were omitted from analysis due to very small number of different conditions for example, alcoholic liver disease (n=11) and autoimmune infections (n=6). The patients suffering from chronic liver diseases due to chronic infection with hepatitis C were 3.17 times more likely to be suffering from depression in comparison to those who had not contracted infection from hepatitis C virus (OR 3.17, 95% CI: 1.71-5.88,) and was statistically significant (p< 0.0002). Similarly, the patients suffering from chronic liver disease due to chronic Hepatitis C infection were 2.2 times likely to be suffering from anxiety disorders in comparison to those who had not contracted hepatitis C infection (OR 2.20, 95% CI:1.21-4.01) and was statistically significant (p< 0.0098).

Physical Signs	Frequency n (%)
Abdominal Striae	13 (7%)
Altered Orientation	11 (6%)
Ascites	82 (42%)
Bleeding per rectum	13(7%)
Caput Medusae	8 (4%)
Clubbing	60 (31%)
Dark Urine	32(17%)
Delirium	53 (28%)
Dizziness	60 (31%)
Encephalopathy	1 (0.5%)
Fatigue	97 (50%)
Gynaecomastia	4 (2%)
Pallor	103 (53%)
Palmar Erythema	42 (22%)
Spider Naevi	1 (0.5%)
Upper Gastrointestinal Bleed	15 (8%)

Table-I. Frequency of physical signs in patients of chronic liver diseases (n=193). multiple symptoms from patients

		Depression			P-value
		Yes n (%)	No n (%)	Total	
Hepatitis C	Positive	78 (40.4)	46 (23.8)	124	0.000*
	Negative	24 (12.4)	45 (23.4)	69	
Hepatitis B	Positive	16(8.3)	33 (17.1)	49	0.001*
	Negative	86 (44.6)	58 (30.0)	144	

Table-II. Association of depression with hepatitis B and C

		Anxiety			P-value
		Yes n (%)	No n (%)	Total	
Hepatitis C	Positive	78 (40.4)	46 (23.8)	124	0.009*
	Negative	30 (15.6)	39(20.2)	69	
Hepatitis B	Positive	28(14.5)	21(10.9)	49	0.032
	Negative	87(45.0)	57(29.5)	144	

Table-III. Association of anxiety with hepatitis B and C

DISCUSSION

Chronic Hepatitis C carriers have an elevated occurrence of depressive symptoms (up to 70%) which is seven times higher than the general population.[7] The mechanisms of hepatitis C virus induced psychological symptoms have not been completely understood.[7] Quite a lot of evidence suggests that Hepatitis C virus can traverse the blood-brain barrier[7] and the virus has been successfully isolated from the brain tissue as evidenced by latest studies.[7] The primary antidepressant for acute antidepressant treatment is citalopram[8] Hepatitis C patients with symptoms of depression at baseline should also receive antidepressant pre-treatment before starting antiviral therapy.[8]

A recent study carried out in a tertiary care public hospital of Lahore by Ahmad J et al suggests that among Hepatitis C patients (n=193), depression was seen in 64% (n=123) while 55% (n=37)of hepatitis B(n=67) patients had depression.[6] The overall prevalence of depression in the patients was 62%(n=160).[6] These results correspond well with this study which found 53% (n = 102) of patients of chronic liver disease suffering from depression. It can be argued that a slight difference in frequency between Ahmad et al and this study was due to the fact that Ahmad J et al only had patients of hepatitis B and C on their sampling while this study included all the patients that fulfilled all the clinical criteria of chronic liver disease. Ahmad J et al further suggest that due to elevated figures of anxiety and depression among sufferers of chronic hepatitis, internal medicine teams must collaborate with psychiatrists to reduce the frequency of depression in order to address the associated co morbidity and mortality. The elevated occurrence of depressive symptoms among patients of Hepatitis C in comparison to those of Hepatitis B warrants psychiatric and psychological monitoring of these patients.[9]

Qureshi et al argued that 57% (n=117) of patients, (n=206) were found to have some degree of depression.[9] Whereas, the frequency of depression was greater in the patients of Chronic Hepatitis C (73%, n=69) as compared to the sufferers of hepatitis B (59%, n=17) and controls (38%,n=31).[9] The results of Qureshi et al correspond well with our study which affirms that patients suffering from chronic hepatitis C infection were 3.17 times more likely to be suffering from depression in comparison to the non exposed group.

Aslam MN et al (2015) carried out a cross sectional study in the in Multan and included 281 patients of chronic hepatitis C and concluded that there was a high prevalence of anxiety 37% (n=103) and depression 29% (n=82) in the study population.[2] The difference in results between Aslam MN et al and this study can be attributed to the fact that Aslam MN et al studied the effects of Hepatitis C Virus infection solitarily and excluded all the patients with previous treatments with IFN-alpha and co-infection of HCV with HBV, whereas; this study included all the patients in the clinical spectrum of chronic liver diseases.

The limitation of this study is that it used convenience sampling technique which is exceedingly susceptible to selection bias.[15,16] Generalizations should be made with circumspection because this sample is unlikely to be the representative of general population being studied.[15,16] Over or under representation of particular groups within the sample can occur.[15,16] Although sampling error was managed by raising the design effect. Early treatment of depression and anxiety may help patients to prevent these diseases.[6] Future studies should aim to correlate

depression and anxiety with liver function tests and uncover the mechanisms of depression and anxiety among patients of chronic liver diseases.[4] Future studies could also focus on depicting other risk factors of depression and anxiety among patients of chronic liver diseases.

CONCLUSION

A high frequency of depression and anxiety symptoms are seen in patients of Chronic Hepatitis C infection. The patients of chronic liver diseases and chronic hepatitis C in particular should be referred for psychological evaluation and further treatment for anxiety and depression. The patients of Hepatitis C with symptoms of depression at baseline should receive antidepressant pre-treatment before starting antiviral therapy.

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– Unknown –

AUTHORSHIP AND CONTRIBUTION DECLARATION

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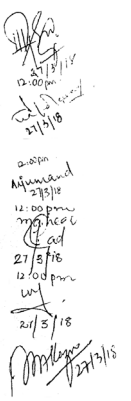
1	M. Luqman Farrukh Nagi	Preception idea generation, Study design, Development of Data collection tools, Calculation of Sample size, Materials and Methods, Data analysis, Manuscript Writing.	
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