

Anxiety and depression in south east patients with chronic liver disease

Adil Hassan Chang, Hafeez Soomro
Javed Iqbal

Abstract: Background: chronic liver disease patients are more likely to develop anxiety and depression. **Objectives:** to determine the frequency and disease specific factors associated with depression and anxiety in patients with chronic liver disease.

Methods: This is a cross-sectional study conducted at aims hospital, Hyderabad, Pakistan After approval from the Institutional Review Board (IRB) dated 20/12/20, IRB No. 0137 with the age group of 18 to 60 years old adults attended gastroenterology clinic from the period of January to June 2021.assessment of mental status of the patients by using Depression Anxiety Stress Scale-21 (DASS-21).this scoring system has 21 questions with each part having further seven questions and on the basis of these question we measures the grading of anxiety and depression .the score is ranges from 0-21 score. Patients with score upto 7 shows normal level of depression ,8-9 mild level of depression ,10-13 moderate level of depression ,14- 15 severe depression and score of 25 shows extreme level of depression.

Results: 16.5% of them had moderate depression. There are statistically significant differences between gender, patient education, ascites, child pough classification, comorbid diabetes and mean depression, anxiety and stress scores. Comorbid diabetes and decompensated cirrhosis significantly increase risk of depression by 3.84 and 17.7 folds respectively.

Conclusion: psychaitry symptoms are more common in males , highly educated patients, in diabetes and in advanced liver disease patients

Key factors: depression and anxiety.

How to cite this: Adnan L, Talpur A R, Sathio R, Saleem M W. Anxiety and depression south east patients with chronic liver disease JIMC 2021; 5.(1) :208-211

Correspondence

Assistant Professor
Department of Pathology
Chandka Medical College@ SMBBMU, Larkana
Pakistan
Email:dradilchang@gmail.com

INTRODUCTION

Chronic liver disease (CLD) incorporates a different range of problems, including from liver steatosis (alcoholic and non-alcoholic), infection from hepatitis B and C, cirrhosis to other more uncommon conditions.⁽¹⁾ Because of their higher occurrence and pervasiveness, these afflictions have transformed into a continuously critical general wellbeing matter worldwide.⁽²⁾ Patients with CLD can present with wide variety of symptoms of anxiety and depression.⁽³⁾ They can additionally have problems of behavior, personality, sleep and cognitive impairment.⁽⁴⁾ Psychosocial stressors are a contributing issue to such horribleness, and include the antagonistic impact of disease diagnosis, against viral treatment, disgrace, also, worries about infection progression or viral transmission.⁽⁵⁾ The confirmation about the presence of these manifestations in CLD patients is significant in light of the fact that they have an antagonistic impact upon the sickness course as increase of actual side effects, practical impedance, cirrhosis and patient with those having Child B and C cirrhosis).The confirmation of CLD Is confirmed by

decreased treatment consistence, and impeded nature of life.⁽⁶⁾

The aims of this study is to determine the frequency of anxiety and depression in Pakistani patients suffering from chronic liver disease and to assess disease-specific factors, contribution of selected Sociodemographic factors for anxiety and depression.

METHODOLOGY

This is an cross-sectional study conducted at aims hospital, Hyderabad, Pakistan after approval from the Institutional Review Board (IRB) dated 20/12/20, IRB No. 0137 with the age group of 18 to 60 years old adults attended gastroenterology clinic from the period of January to June 2021.patients were excluded those have already history of psychiatry disorders ,acute cause of liver disease or liver transplanted patients .total 248 patients were recruited in this study and patients were selected on systemic random techniques ,every 3rd patient with chronic liver disease included in this current study .3 types of questioner were used in this study .the first questioner includes questions about bio data ,etiology of CLD .patients were stratified on the basis of severity of liver disease (no cirrhosis/earl presence of sign and symptoms of CLD and by ultrasound examination and their severity is assessed

by using Child –Pugh –scoring and their social class was assessed by using El-Gilany et al. questionnaire.^{3rd} part of questionnaire was for the assessment of mental status of the patients by using Depression Anxiety Stress Scale-21 (DASS-21).this scoring system has 21 questions with each part having further seven questions and on the basis of these question we measures the grading of anxiety and depression .the score is ranges from 0-21 score. Patients with score upto 7 shows normal level of depression ,8-9 mild level of depression ,10-13 moderate level of depression ,14- 15 severe depression and score of 25 shows extreme level of depression .

The data was entered and analyzed using IBM-SPSS V-23. The continuous variables were described as Mean \pm SD and categorical variables as frequency and percentages. To compare means of two groups, Mann Whitney test (for not normally distributed data) were used. For comparing of more than two groups, Kruskal Wallis test was used for not normally distributed data. To assess the correlation between patients' age and DASS-21 score, Spearman correlation coefficient was used. The level statistical significance was set at 5% ($P \leq 0.05$).

RESULTS

Mean age of the patients in this current study was 43.65 (\pm 8.01) years ranging from 32 to 60 years and 60.5 are males with majority of them belonging from the rural areas about 65 %.18.1 % of patients are belonging from the highly educated subgroups with 8.9 % are those who are illiterate and 20 % of those who are semi professional in their occupation.

About 39.5, 23.8% of patients had no cirrhosis and thirty seven percent of studied patients (36.7%) had compensated and decompensated cirrhosis respectively with majority of them 70.3% has no comorbid diseases. About 37.1% had child A cirrhosis ,27 % child B cirrhosis and 35 % had child C cirrhosis .as Hepatitis C is more common in Pakistan ,70 % of patients are suffering from hepatitis C in this current study with 10 % only with Hepatitis B cirrhosis .

About 16% of patients were suffering from mild and extreme form of depression with a significant correlation of DAAS score with the duration of disease. There are statistically significant differences between gender, education and mean depression, anxiety and stress score and also with the severity of CLD child B and C cirrhosis, presence of ascities and history of Diabetes that increased the risk of depression by 3.84 and 17.7 folds respectively.

DISCUSSION

Neuropsychological shortfalls in those patients typically incorporate mental disability and

Depression. These types of diseases occur due to the accumulation of toxins and neurotoxin molecules that are unable to excrete from the damaged liver with same immunological pattern leads to the depression.⁽²⁾

Bianchi et al.⁽¹²⁾ in their study of 156 patients with cirrhosis utilizing two surveys (the Beck Depression Inventory and the Mental General Well-Being List) revealed that the mental state of those patients is thoroughly compromised. Sign of depression and psychological stress also, melancholy are related with CP classification.

Qureshi et al.⁽¹³⁾ conducted the study in 206 patients and divided these patients into 3 groups Group-I (chronic hepatitis C, n = 95), group-II (chronic hepatitis B, n = 29) and group-III (healthy subjects, n = 82). In this study age, sex and socioeconomic status of the patients were matched instead if frequency of depression measured by Hospital Anxiety and Depression Scale (HADS), found one fifth of patients with moderate depression .our study results also matched with this same study as the majority of patients are males in this current study.⁽²⁾

In patients with CLD, the reported incidence of depression and anxiety is about 20 to 70%. A study conducted by Popović et al.⁽²⁾ reported that 13.9 % patients had anxiety and 62% had depression in CLD patients. Patients diagnosed with Chronic Hepatitis C are had been diagnosed with higher rate of depression.⁽¹⁴⁾ A study conducted by Dwight et al⁽²⁴⁾, evaluated 50 patients with chronic hepatitis C there study also concluded that 28% had depression and their disability figure is more related to depression then the liver disease.

There multiple factors that is responsible for in patients with chronic hepatitis C or chronic liver disease that includes alteration in brain metabolism, inconsistency and unpredictability of the course of illness, emotional factors, complexity and ambiguity but in our study there is no correlation is found in relation with disease specific characteristics or demographic factors like age, occupation, marital status or cause of chronic liver disease.⁽¹⁵⁻¹⁹⁾ Although comorbidity with Diabetes, Male gender, higher education and severity of liver disease with decompensated cirrhosis is associated with higher rate of depression and anxiety. In our study age has no correlation with depression which is also proved by the other study.⁽²⁰⁻²²⁾ Male patients had more depression, probably explained by males are financially responsible in their families. On the other hand a study done in china that shows female gender and socioeconomic status are significantly correlated with depression may be due difference in biological and social factors.⁽²³⁾

Our results also concluded that hepatitis C patients are prone to develop the depression which is also proved with the study conducted by Qureshi et al⁽¹³⁾

and also by Carta et al⁽²⁵⁾ that demonstrate depressive disorders are not statically different in hepatitis B patients, although indicated that if the patients had combined infection with chronic hepatitis b and c then they had higher rate of depression. To our knowledge it is first study in Pakistan that assess the psychiatry comorbidities in patients with chronic liver disease however this study has few limitation that includes as the depression and anxiety is self report by the patients recall bias could not be excluded, secondly this is an cross-sectional study the causality between psychiatric comorbidities and their correlates could not be identified.

CONCLUSION

The largest percentage of patients with CLD reported psychiatric symptoms (42.7%, 72.6%), and 41.5% self-reported symptoms of depression, anxiety and stress respectively). Presence of comorbid diabetes mellitus and decompensated cirrhosis increase risk of depression by 3.84 and 17.7 fold respectively).

Conflict of interest: None.

Funding Source: None.

REFERENCES

- Behairy OG, Amer AAB, Mansour AI, Mohamed KI. Association between vitamin D status and depression in children with chronic liver disease. *Egypt Liver Journal*. 2020;10:34.
- Popović D, Culafi DM, Tepav-čević DB, Kova-čević NV, Spuran MM, Djuranović SP et al. Assessment of depression and anxiety in patients with chronic liver disease. *Vojnosanit Pregl*. 2015;72:414-420.
- Eftekar M. The association between hepatic encephalopathy/minimal hepatic encephalopathy and depressive and anxiety disorders: a systemic review. *Australasian Psychiatry*. 2020;28(1):61-65.
- Golfieri L, Gitto S, Vukotic R, Andreone P, Marra F, Cristina M et al. Impact of psychosocial status on liver transplant process. *Annals of Hepatology*. 2019;18(6):804-809.
- Krosten VT, Tranah TH, Pariante C, Shawcross DL. Gut-derived systemic inflammation as a driver of depression in chronic liver disease. *Journal of Hepatology*. 2022;76(3):665-680.
- Egmond E, Marino Z, Navines R, Oriolo G, Pla A, Bartres C et al. Incidence of depression in patients with hepatitis C treated with direct-acting antivirals. *Braz J Psychiatry*. 2020;42(1):72-76.
- Krige JEJ, Bornman PC, Shaw JM, Apostolou C. Complications of endoscopic variceal therapy. *SAJS*. 2005;43(4):177-194.
- Ibrahim N, El-abdeen AMZ, Ng F, Zoromba M, Haikal A. Socio-economic and demographic factors associated with adaptive behaviour among children diagnosed with autism spectrum disorder in Egypt. *Middle East Curr Psychiatry*. 2020;27:38.
- Lu S, Hu S, Guan Y, Xiao J, Cai D, Gao Z et al. Measurement Invariance of the Depression Anxiety Stress Scales-21 Across Gender in a Sample of Chinese University Students. *Front Psychol*. 2018;9:2064.
- Ali A, Green J. Differential Item Functioning of the Arabic Version of the Depression Anxiety Stress Scale-21 (DASS-21). *Nursing & Health Care*. 2017;4(5):1-4.
- Sarbarzeh PA, Karimi S, Jalilian M, Mosafer H. Depression, Anxiety, Stress and Social Isolation in Hepatitis Patients. *SciMedicine Journal*. 2020;2(4):225-233.

- Bianchi G, Marchesini G, Nicolino F, Graziani R, Sgarbi D, Loguer-cio C et al. Psychological status and depression in patients with liver cirrhosis. *Dig Liver Dis*. 2005;37(8):593-600.
- Qureshi MO, Khokhar N, Shafiqat F. Severity of depression in hepatitis B and hepatitis C patients. *Journal of College of Physicians and Surgeons-Pakistan*. 2012;22(10):632-634.
- Noon SL, D'Annibale DA, Schwimmer MH, Shiels J, Arin J, Durelle J et al. Incidence of Depression and Anxiety in a Cohort of Adolescents With Nonalcoholic Fatty Liver Disease. *Journal of Pediatric Gastroenterology and Nutrition*. 2021;72(4):579-583.
- Shea S, Lionis C, Kite C, Atkinson L, Chaggar SS, Randeve HS, Kyrrou I. Non-Alcoholic Fatty Liver Disease (NAFLD) and Potential Links to Depression, Anxiety, and Chronic Stress. *Biomedicine*. 2021; 9(11):1697.
- Guereiro-Cost LNF, Araujo-Filho JEO, Marback RF, Jesus-Nunes AP, Morais-De-Jesus M, Quarantini LC. Mental disorders and quality of life in patients awaiting liver transplantation. *Arq Gastroenterol*. 2019;56(4):339-343.
- El-Meteini M, Shorub E, Mahmood DAM, Elkholy H, El-Missiry A, Hashim R. Psychological profile and psychiatric morbidity among Egyptian patients after living donor liver transplantation. *Middle East Curr Psychiatry*. 2019;26:3.
- Dirks M, Haag K, Pflugrad H, Tryc AB, Schuppner R, Wedemeyer H et al. Neuropsychiatric symptoms in hepatitis C patients resemble those of patients with autoimmune liver disease but are different from those in hepatitis B patients. *J Viral Hepat*. 2019;26(4):422-431.
- Yarlott L, Heald E, Forton D. Hepatitis C virus infection, and neurological and psychiatric disorders – A review. *Journal of Advanced Research*. 2017;8(2):139-148.
- Takahashi A, Abe M, Yasunaka T, Aringo-Hino T, Abe K, Takaki A et al. Quality of life among patients with autoimmune hepatitis in remission. *Medicine*. 2020;99(43):e22764.
- Danilescu CM, Sandulescu DL, Pirlou MC, Streba CT, Rogoveanu I. Depressive and Anxious Symptoms in Hepatitis C Virus Infected Patients Receiving DAA-Based Therapy. *Diagnostics*. 2021;11:2237.
- Chong L, Hsu C, Lee C, Chou R, Lin C, Chang K et al. Association of viral hepatitis and bipolar disorder: a nationwide population-based study. *J Transl Med*. 2018;16:173.
- Gayam V, Jegede O, Tiongsong B, Mandal AK, Sidhu K, Garlapati P. Outcomes of Direct-Acting Antiviral Treatment of Psychiatric Patients with Comorbid Hepatitis C Virus Infection. *Dig Dis*. 2020;38(3):232-239.
- Dwight MM, Kowdley KV, Russo JE, Ciecchanowski PS, Larson AM, Khaton WJ. Depression, fatigue, and functional disability in patients with chronic hepatitis C. *J Psychosom Res*. 2000;49:311-317.
- Carta MG, Hardoy MC, Garofalo A, Pisano E, Nannoi V, Intilla G et al. Association of chronic hepatitis C with major depressive disorders: irrespective of interferon-alpha therapy. *Clin Pract Epidemiol Ment Health*. 2007;2:22-26.

Authors

- Dr. Adil Hassan Chang
FCPS Gastroenterology
Consultant Gastroenterology
Asian Institute of Medical Sciences Hyderabad
- Dr. Hafeez Soomro
FCPS Gastroenterology
Consultant Gastroenterology
Asian Institute of Medical Sciences Hyderabad
- Dr Javed Iqbal
FCPS Gastroenterology
Consultant Gastroenterology
Asian Institute of Medical Sciences Hyderabad

Figure (1) Pie chart showing distribution of the studied patients according to self-reported stress

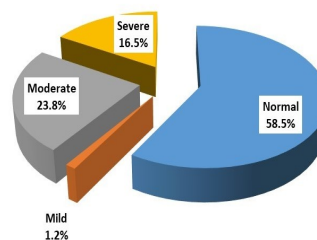


Table (1): Relation between DASS score and demographic characteristics of studied patients

Sociodemographic characteristics	Depressionscore	Test	p	Anxiety score	Test	p	Stress score	Test	p
	Mean ± SD			Mean ± SD			Mean ± SD		
Gender:									
Male	10.43 ± 6.93	-2.053 [‡]	0.04	10.31 ± 6.83	-2.335 [‡]	0.02	10.31 ± 6.93	-2.203 [‡]	0.028
Female	8.48 ± 7.03			8.51 ± 6.75			8.35 ± 6.79		
Residence:									
Rural	10.18 ± 7.06	-1.196 [‡]	0.232	10.24 ± 6.79	-1.699 [‡]	0.089	10.22 ± 6.91	-1.796 [‡]	0.072
Urban	8.99 ± 6.94			8.78 ± 6.85			8.65 ± 6.88		
social class:									
low	9.85 ± 7.44	0.205 [*]	0.902	9.78 ± 7.23	0.633 [*]	0.726	9.71 ± 7.34	1.521 [*]	0.467
middle	9.58 ± 6.74			9.64 ± 6.6			9.62 ± 6.66		
high	8.63 ± 5.11			8.05 ± 4.75			7.84 ± 4.82		
Education:									
Illiterate	7.13 ± 8.75	-2.302 [‡]	0.021	7.77 ± 8.45	-2.263 [‡]	0.024	7.65 ± 8.48	-2.146 [‡]	0.032
educated	10.02 ± 6.68			9.86 ± 6.56			9.8 ± 6.66		
Occupation:									
Not working	10.6 ± 8.71	2.709 [*]	0.745	11.2 ± 8.13	3.247 [*]	0.662	11 ± 8.33	3.023 [*]	0.696
Unskilled worker	10.58 ± 8.12			10.12 ± 7.54			10.12 ± 7.54		
Skilled worker	9.88 ± 7.85			10.24 ± 8.12			10.34 ± 8.24		
Clerk	9.14 ± 6.85			9.16 ± 6.86			9.05 ± 6.89		
Semiprofessional	9.2 ± 4.15			8.98 ± 3.92			8.98 ± 4.03		
Professional	8.58 ± 7.45			8.21 ± 7.21			7.94 ± 7.16		
Marital status:									
Single	9.29 ± 5.26	0.761 [*]	0.859	9.35 ± 5.19	1.093 [*]	0.779	9.21 ± 5.3	1.729 [*]	0.631
Married	9.55 ± 7.15			9.38 ± 7			9.27 ± 7.04		
Divorced	10.53 ± 6.54			10.56 ± 6.15			10.75 ± 6.38		
Widow	9.51 ± 8.03			9.67 ± 7.82			9.56 ± 6.93		

Authors Contribution

Adil Hassan Chang	Conception of study design, acquisition, analysis, and interpretation of data.
Hafeez Soomro	Drafting and methodology, data interpretation
Javed Iqbal	Analysis and interpretation of data for work

Received Date: 10-Aug-2021
Revised Received: 10-Sept-2021
Accepted Date: 6-Oct-2021