

PREVALENCE OF DEPRESSION AND ANXIETY IN PATIENTS PRESENTING WITH ACUTE CORONARY SYNDROME TO MARDAN MEDICAL COMPLEX

Noorul Hadi¹, Ejaz Gul¹, Asif Kamal², Pirzada Muhammad Muneeb¹, Asfandiyar Khan¹, Shafiq Alam¹, Sumaira¹

1 Mardan Medical Complex, Pakistan
2 Gajju Khan Medical College, Swabi, Pakistan

Address for Correspondence:

Dr. Ejaz Gul

Mardan Medical Complex, Pakistan

Email: drgulrh@yahoo.com

Contribution

NH conceived the idea and designed the study. Data collection and manuscript writing was done by NH, EG, AK, PMM, AK, SA, and S. All the authors contributed equally to the submitted manuscript.

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ABSTRACT

Objective: The present study is aimed to determine the frequency of depression and anxiety in patients presenting with Acute Coronary Syndrome to a teaching Hospital.

Methodology: It was a cross sectional descriptive study, which included 110 patients suffering from Acute coronary syndrome. Admitted patients were interviewed following ACS in 3-5 days, using semi structured interview method for important demographic information, history of psychiatric illness, and other variables. Afterwards patients were assessed for depression and anxiety. This study was conducted at MTI Mardan Medical Complex from June 2018 to June 2019.

Results: There were 110 patients out of which males were 68.2% and females were 31.8%. Among these 99% were married. 10% were unemployed, while remaining were either government servants, businessmen, laborers or housewives. Educated were 40%, while remaining had received some form of education. There were 69.1% who had STEMI, 12.7% had NSTEMI, and 12.7% had CCF. Based on HDRS, 35.5% met criteria for very severe depression, followed by 15.5% severe depression. According to HAM-A scores, 14.5% met criteria for very severe anxiety, followed by 19.2% moderate to severe anxiety, and 32.7% met criteria for mild to moderate anxiety. Depression and anxiety were more prevalent among females in comparison with males.

Conclusion: There is high prevalence of depression, and anxiety in patients with ischemic heart disease. Diagnosing and treating psychiatric conditions in such patients will lead to improve compliance and outcomes.

Keywords: Acute coronary Syndrome, Anxiety, Depression

INTRODUCTION

Cardiovascular diseases are among the most common cause of death resulting in approximately 17.9 million deaths across the globe, according to a survey conducted in 2015.¹ While depression affects more than 264 million people around the world according to a report of WHO.²

Cardiovascular disease is a major cause of mortality and morbidity.³ There is a bidirectional relationship between cardiovascular diseases and depression and anxiety. Acute coronary syndrome has physical as well as psychological consequences.⁴ On the other hand, depression and anxiety have negative impact on various illnesses. Various psychological states and traits, such as depression, anxiety, tension, stress, and anger, serve as risk factors for CVD.⁵ It has been observed that there is high prevalence of psychiatric disorders, especially anxiety and depression among CVD patients.⁶

Depression and anxiety are different from other psychological disorders, as they are diagnoseable, and therefore can be treated and clinically managed through various interventions. Most of the evidence linking depression to cardiovascular disease comes from epidemiological disease. This relationship is a complex process. A study by Ossola et al 2018 showed that patients with major depressive episode following acute coronary syndrome are at a three times risk of having a recurrent cardiac event.⁷

Few studies are performed in Pakistan to determine the prevalence of depression and anxiety in patients with Ischemic Heart Disease. The course of cardiac diseases is directly affected by mental health problems physiologically and their adverse effect may be worsened by non-compliance to medication, treatment and lifestyle interventions.⁸ Compliance with cardiac medication regimens may be poorly affected in patients with clinical depression and reducing depression in such patients may lead to increased medication adherence and better outcomes in lifestyle of cardiac patients.⁷ Depressed patients also adhere less well to other recommendations, including modifying the diet, exercising, stopping smoking, and attending cardiac rehabilitation programs.^{9,10}

It has been observed that most of the patients suffering from acute myocardial infarction are underdiagnosed and under treated for depressive symptoms.¹¹ Depression serves as an obstacle in treatment of cardiovascular diseases, because depressed patients have decreased motivation for treatment, reduced physical activity, reduced self-care, increased tobacco use, and are less likely to adhere to rehabilitation programs hence leading to poor prognosis.¹²

Depression is common in patients with acute coronary syndrome (ACS) and independently prognostic of a higher mortality and worse health status. Despite great attention to its prevalence and prognostic import, little is known about how often hospitalized patients with ACS who have significant depressive symptoms are recognized while receiving routine cardiovascular care.¹³

The prevalence of depression in patients presenting to ED with Acute Coronary Syndrome is very variable. The present study is to determine the frequency of depression and anxiety in patients presenting with Acute Coronary Syndrome to a teaching Hospital.

METHODOLOGY

It was a descriptive cross-sectional study performed at Mardan Medical complex from June 2018 to June 2019. It was a joint study by Cardiology and Psychiatry Department MMC Mardan. Approval was given by Ethical Committee of the hospital. Informed consent was given by all participants recruited in the study. Those patients presenting with Acute Coronary Syndrome who met eligibility criteria of the study were recruited. After stabilization with conservative treatment, they were interviewed within 2 to 3 days of admission and were assessed for depression and Anxiety by psychologists. Those patients ranging in age from 18-65 years of age were included in the study and who were capable of understanding and responding to the local language. Patients with history of psychiatric disorders or chronic diseases like CVA, CKD were excluded.

Baseline information was obtained on a preformed questionnaire including important demographic information and premorbid health status of the patient. Sociodemographic details included age, gender, marital status, education, profession and smoking status. Clinical details included details regarding current diagnosis, family history of ACS, Hypertension, diabetes mellitus, psychiatric history and family history of psychiatric illness. After obtaining demographic details, and clinical details, patients were interviewed for assessing level of depression and anxiety by psychologists using clinical scales. Hamilton depression rating scale (HDRS) ¹⁴ was employed to determine the presence of depression in ACS patients. HDRS is a clinician rating scale that can easily be administered by trained professionals. It is a free access scale. HDRS includes 21 items based on DSM-IV criteria of depression to estimate the severity of depression. Responses on the scale were summed to estimate the severity of depression. Score of 0-7 indicates normal, 8-13 mild depression, 14-18 moderate depression, 19-22 severe depression, and >23 indicates very severe depression. Hamilton anxiety scale ¹⁵ is a tool used by clinicians to determine the severity of anxiety symptoms among patients. It is a free access scale. It is a 5-point scale ranging from 0 (not present) to 4 (severe). It includes 14 items. Responses of items are summed to determine the degree of anxiety. The total score ranges from 0-56. Scores less than 17 indicates mild severity of symptoms, 18-24 indicates mild to moderate severity and 25-30 indicated moderate to severe.

Data was analyzed using SPSS version 21. Descriptive statistics were used to calculate depression, anxiety, insomnias, guilt, and suicidal behavior.

RESULTS

Out of 110 patients with ACS, males were 68.2% and females were 31.8%. Majority (36.4 %) were in the age range of 51-60, followed by (24.5%) in the age range of 41-50. Among the study participants, 99% were married. 10.9 % were unemployed, while remaining were either government servants, businessmen, laborers or housewives. A total of 60% were uneducated, while remaining had received some form of education as shown in Table 1. Majority were nonsmokers 71.8%, while 28.2% were smokers.

Out of total, 69.1% had STEMI, 12.7% had NSTEMI, 12.7% had CCF, while remaining had unstable

angina, stable angina or tachyarrhythmias like SVT and VT as shown in Table 1.

Out of total, 52.7% of the patients were hypertensive, and 26.4% had diabetes mellitus. Among the patients, 66.4% did not had family history of cardiovascular disease, while 33.6 % had a positive family history for CVD. History of psychiatric illness was not present among majority 79.1% of the patients.

Among the participants 35.5% had very severe depression, 15.5% had severe depression, 17.3% had moderate depression, while 13.6% had mild depression, and 17.3% normal.

Very severe anxiety was present among 14.5%, moderate to severe anxiety 18.2%, mild to moderate anxiety 32.7%, and normal 33.6%.

Table 1: Characteristics of study population

Variable	Frequency (%)
N	100
Gender	
Male	68.2% (75)
Female	31.8% (35)
Marital Status	
Single	0.9% (1)
Married	99.1% (99)
Age (years)	
20-30	1.8% (2)
31-40	10.9% (12)
41-50	24.5% (27)
51-60	36.4% (40)
61-70	12.7% (14)
≥70	13.6% (15)
Profession	
Employed	27.3% (30)
Unemployed	10.9% (12)
own business	12.7% (14)
Laborer	22.7% (25)
Housewife	26.4% (29)
Education	
Uneducated	60% (66)
Primary	22.7% (25)
Matric	9.1% (10)
FA/FSC	1.8% (2)
Bachelor	4.5% (5)
Masters	1.8% (2)
Smoking History	
Non-Smoker	71.8% (79)
Smoker	28.2% (31)
Hypertension	52.7% (58)
Diabetes Mellitus	26.4% (29)

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Family History of IHD	33.6% (37)
History of Psychiatric illness	20.9% (23)
Diagnosis	
Stable Angina Pectoris	0.9% (1)
Unstable Angina	0.9% (1)
NSTEMI	12.7% (14)
STEMI	69.1% (76)
CCF Stage C	12.7% (14)
SVT	2.7% (3)
VT	0.9% (1)
Depression	
Normal	17.4% (19)
Mild Depression	13.6% (15)
Moderate Depression	18% (20)
Severe Depression	15.5% (17)
Very Severe Depression	35.5% (39)
Anxiety	
Mild Anxiety	33.6% (37)
Mild to Moderate Anxiety	32.7% (36)
Moderate to severe Anxiety	19.2% (21)
Very severe Anxiety	14.5% (16)

IHD: Ischemic Heart Disease, NSTEMI: Non-ST-elevation Myocardial infarction, STEMI: ST-Elevation Myocardial infarction, CCF: Congestive cardiac failure, SVT: Supraventricular tachycardia, VT: Ventricular Tachycardia

Prevalence of depression and anxiety according to patient characteristics are presented in Table 2.

Table 2: Prevalence of depression and anxiety according to patient characteristics

	Gender		Education	
	M	F	Ed	UEd
N	75	35	44	66
Depression				
Normal	19 (25.3)	0 (0)	9 (20.4)	10 (15.2)
Mild	10 (13.3)	5 (14.3)	6 (13.6)	9 (13.6)
Moderate	16 (21.5)	4 (11.4)	11 (25)	8 (12.1)
Severe	11 (14.6)	6 (17.2)	5 (11.4)	13 (19.7)
Very Severe	19 (25.3)	20 (57.1)	13 (29.6)	26 (39.4)
Anxiety				
Mild	31 (41.3)	6 (17.1)	16 (36.4)	21 (31.8)
Mild to	25	11	13	23

Moderate	(33.3)	(31.5)	(29.5)	(34.9)
Severe	13 (17.4)	8 (22.8)	12 (27.3)	9 (13.6)
Very severe	6 (8)	10 (28.6)	3 (6.8)	13 (19.7)

M=male, F=female, Ed=educated, UEd=uneducated

DISCUSSION

This study was performed at a teaching hospital in District Mardan. It showed high prevalence of anxiety and depression in patients with ACS. Only 31% did not had any symptoms of depression and 33.6 % did not had anxiety symptoms. As ischemic heart disease own its own is a high risk situation, not recognizing these conditions of depressive illness and somatic anxiety would compromise the standard care of cardiac patients.¹⁶

Our results show that 69% had depressive illness while 66.4 % had anxiety disorder. An Iranian based study in 2016 showed severe depression to be present among 73 % of the patients following Acute coronary syndrome.¹⁷ Recent Australian based study showed prevalence rate of anxiety to be 43% following Acute coronary syndrome.¹⁸ Prevalence of anxiety symptoms among patients with ACS is reportedly 48.4% according to a Brazilian study.¹⁹ A meta-analysis from 2015 also suggests that, more than 50% of patients with cardiac events have increased levels of anxiety.²⁰ Bunker et al had showed there is a higher prevalence of depression in patients with ischemic heart disease and it has an independent association with course and outcome of heart disease.¹⁶ Depression may lead to worst outcomes, and research shows that the probability of developing a severe cardiac event is twice as likely in those cardiac patients who are depressed as compared to non-depressed.²¹

A study conducted by lauzon et al.¹¹ followed patients up to 1 year to measure the prevalence and impact of depressive symptoms after acute myocardial infarction found that those patients who were depressed at time of admission had higher number of cardiac complications including ischemia, infarction, congestive heart failure, angina, recurrent acute myocardial infarction compared to those not depressed on admission. Death rate was also reported to be higher among those patients who were depressed 16 % compared to 8% non-depressed patients.

The trauma caused by cardiac complications may make women particularly at greater risk for

developing anxiety and depression and may worsen existing symptoms of anxiety and depression.²² In our study there was a higher prevalence of depression and anxiety in female and uneducated patients. Among the 75 male patients, 19 (25.3%) were found to have very severe depression, while among the 35 female patients, 20 (57.1%) lied in the range of very severe depression according to HDRS scores. Several other studies have demonstrated that females are more vulnerable to psychiatric illnesses and they have higher prevalence of depression as compared to males.^{19,23} Very severe anxiety was found among 6 (8%) males and 10 (28.6%) females. A recent study conducted by Allabadi et al in Palestine showed same findings related to gender and education of patients.²⁴ Our study shows significant increase in the number of severely depressed patients in comparing educated and uneducated category of patients. There were 18 (41 %) of the educated patients in the range of severe to very severe depression, while 39 (59.1 %) of the uneducated patients were in the category of severe to very severe depression. These findings suggest that more vulnerable population among cardiac patients as female and less educated patients should be given attention while screening for mental health issues.

Though we assessed depression in patients at admission in patients with acute coronary syndrome, it may be possible that this depression is due to acute illness, rather than depression alone. However, we take advantage of hospital course of these illness and succeeded to identify with the HAM-D on admission and found to have clinical depression. Similar findings were seen in other studies at other countries.

In a country like Pakistan, where mental health services are not adequate, it becomes really important for treating Cardiologist and Physicians to understand and appreciate the risks associated with untreated mental disorders in patients with ischemic heart disease. Mental health care should be integrated into cardiac treatment.

Limitations

This study has several limitations one of it is being a cross sectional study with a small sample size. Furthermore it was performed in acute illness, and the depression and anxiety could be a reaction to acute illness.

CONCLUSION

There is high prevalence of depression in patients with ischemic heart disease. Diagnosing and treating depression in such patients will lead to improve compliance and outcomes.

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