Original Article

Journal of Cardiovascular Medicine and Surgery
Volume 6 Number 2, April – June 2020
DOI: http://dx.doi.org/10.21088/jcms.2454.7123.6220.7

Depression and Anxiety Symptoms in Cardiac Patients

Gyan Nihal N[1], A Praveen Kumar[2], R Vivek Kumar[3]

Authors Affiliation: [1,3]Postgraduate, Department of Psychiatry, [2]Associate Professor, Department of Cardiology, Mamata Medical College, Khammam, Telangana 507002, India.

Abstract

Background: Mental health and physical health are essentially intertwined. People living with severe psychiatric disorders are at significant risk of suffering from many physical disorders. The prevalence of depression and anxiety in patients with cardiac disease is little understood. *Aims and Objectives:* The objective of this study was to assess depression and anxiety in cardiac patients and to determine relationship between them. *Materials and Methods:* The study sample comprised of 200 outpatients following up in the cardiology Outpatient Department (OPD) of the Mamata General Hospital, a tertiary care hospital in Khammam, Telangana, India over a period of 1 year from March 2019 to March 2020. The samples were drawn using convenience sampling method. Mini International Neuropsychiatric Interview (MINI), Hamilton Anxiety Rating Scale (HAM-A) and Hamilton Depression Rating Scale (HAM-D) were the scales administered. *Results:* Anxiety and depression were present in 51% and 30% of the sample respectively. The mean scores of depression and anxiety were significantly high in females than males significantly. Correlation between depression and anxiety showed that depression and anxiety were positively correlated (r=0.738, P=<0.001). *Conclusions:* Depression and anxiety are associated with cardiac disorders. There is a need to keep in mind anxiety and depression as comorbidities in cardiac patients for adequate intervention that can be incorporated in management plan.

Keywords: Depression; Anxiety; Cardiac patients.

How to cite this article:
Gyan Nihal N, A Praveen Kumar, R Vivek Kumar. Depression and Anxiety Symptoms in Cardiac Patients. J Cardiovasc Med Surg 2020;6(2):133–137.

Introduction

Cardiovascular Diseases (CVDs) and depression are one of the global disease causing burden.[1] Cardiovascular diseases are the most common cause of mortalityand are responsible for 17.9 million deaths across the globe, in 2015.[2] Depression affects more than 300 million people around the world,[3] and is predicted to become the main cause of disability worldwide, in 2030.[4] Likewise, in 2010, anxiety affected approximately 272 million people, globally.[5]

Mental health and physical health are essentially linked. People living with severe mental disorders are at higher risk of suffering from many physical disorders.[6] Mentalor psychological disorders such as anxiety, depression, and some personality types may lead to direct pathophysiological changes increasing the risk of developing CVD.[7] Problems with mental health have a direct physiological impact on the cardiovascular disease course and their adverse effect may be induced by non-compliant lifestyle interventions, medication or treatment.[8,9] Furthermore, these psychiatric disorders are add on to the impediments in cardiac

Corresponding Author: A Praveen Kumar, Associate Professor, Department of Cardiology, Mamata Medical College, Khammam, Telangana 507002, India.
Email: praveen.alane@gmail.com

diseases management, from the view point of emotional distress and treatment complexity. This is further amplified by the additional comorbidities such as hypertension, diabetes and obesity.[10]

The American Heart Association (AHA) has advised screening for depression in cardiac patients. Nevertheless, health care services have not responded adequately and fewer than than 15% of cardiac patients are being diagnozed and treated for depression.[11]

Mental health problems are stigmatized in India. There is little information about the prevalenceof depression and anxiety among cardiac patients.[12] Unaddressed mental care needs may be a significant obstacle tothe effective management of cardiac patients, where CVD remains the leading cause of death.[13] The present study was planned to assess depression and anxiety in cardiac patients and to determine relationship between them.

Materials and Methods

The study sample comprised of 200 outpatients following up in the cardiology Outpatient Department (OPD) of the Mamata General Hospital, a tertiary care hospital in Khammam, Telangana, India over a period of 1 year from March 2019 to March 2020. A total of 212 patients were approached for participation in the study, of whom 7 did not meet the inclusion criteria and 5 refused to give consent. Patients aged between 40 and 75 years who had an episode of MI in the preceding 3 months and were clinically stable for an interview were included in the study.

Cardiology OPD identified patients meeting the inclusion criteria and were sought consent from them. Details were obtained from the patients and their relatives. The information was gathered using a structured questionnaire and information regarding the results of investigations was obtained from the medical records. Those patients fulfilling the criteria for a psychiatric diagnosis were referred to department of psychiatry for further management.

Mini International Neuropsychiatric Interview (MINI), Hamilton Anxiety Rating Scale (HAM-A) and Hamilton Depression Rating Scale (HAM-D) were the scales administered. The MINI is a brief structured diagnostic interview for psychiatric disorders, which gives diagnoses in Diagnostic and Statistical Manual of Mental Disorders, Fifth Edition (DSM-V) and International Statistical Classification of Diseases, Tenth Revision (ICD-10).[14]

HAM-A and HAM-D are structured questionnaires toassess symptoms of anxiety and depression, respectively. HAM-A comprises 14 item questionnaire, each defined by a series of symptoms, and measures both psychological anxiety and somatic anxiety. The scale of each item is from 0 (not present) to 4 (severe).[15] The 17-item version of HAM-D was used in our study. A cutoff value of 8 on the scale is used todetermine presence of depression, with higher scores reflecting severity of depression.[16]

Statistical Analysis

It was done using SPSS software for statistical analysis version 22. Descriptive statistics were used for the demographic and clinical variables. Student t test was done to verify differences between the categorical variables. Means for scales were calculated. Pearson correlation test was done to see the corelations between different parameters. P-value was set at significance of <0.05.

Results

Table 1: Demographic and clinical variables.

Sex	Male	150 (75%)
	Female	50 (25%)
Age	40-55	64 (32%)
	55-70	96 (48%)
	>70 yrs	40 (20%)
Education	Up to 10th class	120 (60%)
	Above	80 (40%)
Occupation	Sedentary	105 (52.5%)
	Nonsedentary	95 (47.5%)
History of smoking	Yes	128 (64%)
	No	72 (36%)
History of alcohol use	Yes	112 (56%)
	No	88 (44%)
History of hypertension	Yes	113 (56.5%)
	No	87 (43.5%)
History of diabetes	Yes	96 (48%)
	No	104 (52%)
History of previous MI	Yes	22 (11%)
	No	178 (79%)
History of angina	Yes	56 (28%)
	No	144 (72%)
HAM-A scores >5	Yes	102 (51%)
	No	98 (49%)
HAM-D scores >7	Yes	60 (30%)
	No	140 (70%)

Table 2: Depression and anxiety among male and female cardiac patients.

	Males (n=150)		Females (n=50)		T value	P value
	Mean	SD	Mean	SD		
Depression	5.48	3.782	7.75	5.225	3.3210	0.001*
Anxiety	6.12	3.812	9.21	5.823	4.3043	<0.001*

* = P <0.05 is statistically significant

Table 3: Correlation between Depression and Anxiety among cardiac patients.

	Anxiety	
Depression	R value	P value
	0.738	<0.001*

Sociodemographic details

Males were the major proportion of sex constituting about 75% of the total sample. Patients in the age group of 55–70 years were the maximum constituting about 48% followed by those in the age group of 40–55 years (32%) and of above 70 years (20%). Majority of the proportion didn't finish high school (60%). Sedentary life style was predominant constituting about 52.5% of the total sample Table 1.

Risk factor profile

Hypertension and diabetes mellitus were the most common comorbidities associated constituting 56.5% and 48%, respectively. In patients with substance abuse, nicotine consumption in the form of smoking was seen in 64% and alcohol use was found in 56.5% of patients Table 1.

Depression and anxiety

On administering HAM-D and HAM-A, nearly 30% and 51% of the sample scored above the cutoff respectively. The mean scores of depression and anxiety were significantly high in females than males significantly Table 2.

Correlation between depression and anxiety showed that depression and anxiety were positively correlated (r=0.738, P=<0.001) which implies that higher depressive scores associated with higher scores for anxiety Table 3.

Discussion

The majority of the sample had men which reflects the health seeking methods in our country and also the patient's profile with cardiac diagnosis in an OP as cardiovascular diseases are more common and are prone to multiple risk factors such as alcohol use and smoking and deprivation of estrogen which acts as protective.[17]

The present study suggested that significant section of the sample had anxiety (51%) features which was measured by HAM-A as the features were similar to physical symptoms such as chest discomfort, sweating, palpitations.

Depression was found in 30% of the sample and it is important in cardiac patients as depression is associated with adverse consequences such as increased mortality, angina, arrhythmias.[18,19]

H Allabadi, A Alkaiyat, A Alkhayyat, et al. found that high level of depression and anxiety in their sample of cardiac patients. 54% for severe depression and 19.2% for severe-to-very severe anxiety screened positive. Symptoms of depression and anxiety were more prevalent among females and less educated patients.[20]

Siddharth Sarkar, Rakesh K Chadda, et al. reported significant anxiety and depressive symptoms were present in 48.5% and 25.2% in their study. HAM-A and HAM-D scores were highly correlated with each other suggesting that anxiety and depression symptoms coexist with each other in MI patients.[21]

D Ramya Shruthi, S Sunil Kumar, et al. principal findings of their study were major depressive disorder (44%) and sanxiety disorders spectrum (18%) in acute coronary syndrome patients.[22]

Antidepressants along with cognitive behavioral therapy and physical activity such as aerobic exercise and cardiac rehabilitation are the cornerstone of treatment of depression in cardiac patients. The American Heart Association (AHA) along with the American Psychiatric Association (APA) in 2008 made proposal of the for the better sequalae of the patients: (i) Routine screening for depression should be done as effective treatment of depression improves the outcome, (ii) A Psychiatrist should assess patients with positive screening results, (iii) Cardiac patients with depression who are under treatment should be carefully monitored for adherence to their medical care, drug efficacy,

and safety with their cardiovascular as well as mental health concern, and (iv) Coordination of care among healthcare providers is indispensable in patients with combined mental and medical health diagnoses.[9]

Study Limitations

It is a cross sectional single-center study of a small sample size. A large sample size needed with more women representation.

Conclusion

Looking for the existence of depression and anxiety are important because it may go unnoticed in the clinical population. Therefore, anxiety and depression as co-morbidities in cardiac patients need to be held in mind for effective intervention that can be integrated into management program. Long-term follow up studies with large sample size are necessary to determine the role of anxiety and depression in cardiac patients.

Financial support and sponsorship: Nil.

Conflicts of interest: There are no conflicts of interest.

References

1. Murray CJ, Vos T, Lozano R, et al. Disability–adjusted life years (DALYs) for 291 diseases and injuries in 21 regions, 1990–2010: A systematic analysis for the global burden of disease study 2010. Lancet 2012;380:2197–223.
2. Roth GA, Johnson C, Abajobir A, et al. Global, regional, and National Burden of cardiovascular diseases for 10 causes, 1990 to 2015. J Am Coll Cardiol 2017;70:1–25.
3. WHO. Depression fact sheet 2012.
4. Mensah GA, Collins PY. Understanding mental health for the prevention and control of cardiovascular diseases. Glob Heart 2015;10:221–4.
5. Baxter AJ, Vos T, Scott KM, et al. The regional distribution of anxiety disorders: Implications for the global burden of disease study, 2010. Int J Methods Psychiatr Res 2014;23:422–38.
6. Patten SB. Long-term medical conditions and major depression in the Canadian population. Can J Psychiatry 1999;44:151-7.
7. Riba M, Wulsin L, Rubenfire M, et al. Psychiatry and Heart Disease: The Mind, Brain, and Heart. Hoboken, NJ: Wiley-Blackwell 2011.
8. Chaddha A, Robinson EA, Kline–Rogers E, et al. Mental health and cardiovascular disease. Am J Med 2016;129:1145–8.
9. Lichtman JH, Bigger JT, Blumenthal JA, et al. Depression and coronary heart disease: recommendations for screening, referral, and treatment: A science advisory from the American Heart Association Prevention Committee of the Council on Cardiovascular Nursing, Council on Clinical Cardiology, Council on Epidemiology and Prevention, and Interdisciplinary Council on Quality of Care and Outcomes Research: endorsed by the American Psychiatric Association. Circulation 2008;118:1768–75.
10. Leon BM, Maddox TM. Diabetes and cardiovascular disease: epidemiology, biological mechanisms, treatment recommendations and future research. World J Diabetes 2015;6:1246–58.
11. Huffman JC, Smith FA, Blais MA, et al. Recognition and treatment of depression and anxiety in patients with acute myocardial infarction. Am J Cardiol 2006;98:319–24.
12. Venkatesh BT, Andrews T, Mayya SS, et al. Perception of stigma toward mental illness in South India. Journal of family medicine and primary care 2015 Jul;4(3):449.
13. Mosleh M, Dalal K, Aljeesh Y, et al. Burden of chronic diseases in the Palestinian health-care sector using disability-adjusted life-years. Lancet 2018;391:S21.
14. Sheehan DV, Lecrubier Y, Sheehan KH, et al. The Mini-international Neuropsychiatric Interview (M.I.N.I.): The development and validation of a structured diagnostic psychiatric interview for DSM–IV and ICD–10. J Clin Psychiatry 1998;59(Suppl):22–33.
15. Hamilton M. The assessment of anxiety states by rating. Br J Med Psychol 1959;32:50–5.
16. Hamilton M. A rating scale for depression J Neurol Neurosurg Psychiatry 23:56–62. View Article 1960.
17. Mosca L, Barrett-Connor E, Kass Wenger N. Sex/gender differences in cardiovascular disease prevention: What a difference a decade makes. Circulation 2011 Nov 8;124(19):2145–54.
18. Silverstone PH. Depression increases mortality and morbidity in acute life-threatening medical illness. Journal of psychosomatic research 1990 Jan 1;34(6):651–7.
19. Ladwig KH, Roll G, Breithard G, et al. Postinfarction depression and incomplete recovery 6 months after acute myocardial infarction. The Lancet 1994 Jan 1;343(8888):20–3.
20. Allabadi H, Alkaiyat A, Alkhayyat A, et al. Depression and anxiety symptoms in cardiac patients: A cross-sectional hospital-based study in a Palestinian population. BMC public health 2019 Dec 1;19(1):232.

21. Sarkar S, Chadda RK, Kumar N, et al. Anxiety and depression in patients with myocardial infarction: Findings from a center in India. General hospital psychiatry 2012 Mar 1;34(2):160–6.

22. Shruthi DR, Kumar SS, Desai N, et al. Psychiatric comorbidities in acute coronary syndromes: Six-month follow-up study. Indian journal of psychiatry 2018 Jan;60(1):60.