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PREVALENCE OF DEPRESSION AND ANXIETY SYMPTOMS IN FIRST ATTACK MYOCARDIAL INFARCTION PATIENTS OF MEWAR REGION: A CROSS SECTIONAL STUDY

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ABSTRACT

Background: According to various studies psychiatric morbidities in post Myocardial Infarction (MI) patients increases the morbidity and mortality. Prevalence of psychiatric morbidities is important for to early intervention and to improve the quality of life. There is a paucity of research on Indian subjects and specially those of this area of south Rajasthan.

Aim: To find out the prevalence of Depression and Anxiety following first attack of acute Myocardial Infarction.

Method: 60 cases with an established diagnosis of first episode of acute MI were assessed in cardiac OPD by a cardiologist during follow up, after 2-3 months of attack and they were compared with 60 healthy controls.

Results: 40% myocardial infarction patients were found to be suffering from depressive episode, 35% from anxiety symptoms and 16.6% from mixed anxiety & depressive symptoms. Severity of Depression and Anxiety also measured and findings were significantly associated with MI patients as compared to healthy controls.

Conclusion: The high proportion of patients with MI found to be suffering from symptoms of depression and/ or anxiety two to three months after MI highlights the essential need to assess these symptoms in all such patients during the post - MI period as they merit appropriate treatment along with that of MI.

INTRODUCTION

Coronary heart disease (CHD) is one of the most common and life threatening illness. With urbanization, the prevalence of risk factors for CHD is increasing rapidly in the developing countries as well. Cardiovascular diseases have almost reached to epidemic proportions in India.¹ The reason for high risk of coronary artery disease among Indians is still unclear but could be attributed to genetic predisposition and unhealthy lifestyles.^{1,2}

Depression, anxiety, suppressed anger and type A personality have been shown to be risk factors for developing coronary artery disease. Depression and Cardiovascular diseases (CVD) are both

highly prevalent disorders and both of them cause a significant decrease in quality of life of the patient. Depressed individuals are more likely to develop angina, or fatal or non-fatal MI than their non-depressed counterparts.^{3,4} Prevalence of depression in patients of MI ranges from 16 to 45 % in studies using a standardized interview for the diagnosis of depression. Further more, studies using a validated questionnaire or rating scale have reported similar prevalence of depressive symptoms in 10 % to 45 % of patients of MI.⁵ These prevalence rates of depression in MI population are higher than the possibly conservative rates of major depression in the general population of 5% as reported by the

National Co- Morbidity study, 5-10% in primary care, or in 6 to 14% in other inpatient medical settings.^{6,7}

The interaction of heart and psyche works both ways. Emotions and stressful experiences affect the heart directly through the autonomic nervous system, as well as indirectly via neuroendocrine pathways. Conversely, pathologic cardiac activity and function trigger distress and contribute to psychopathology, such as depressive syndromes following M.I or strokes.⁸

Patients with an acute Myocardial Infarction and symptoms of depression and anxiety not only experience higher rates of long-term morbidity and mortality but also report a worse quality of life than patients without symptoms of these psychiatric disorders.^{9,10,11}

The present study was planned to assess the prevalence and severity of depression, anxiety and mixed anxiety and depression in patients with first episode of post myocardial infarction and compared with healthy controls. There is scarcity of data on this topic in Indian population hence the study was planned.

AIMS AND OBJECTIVES

To find out the prevalence and assessment of severity of Depression and Anxiety in post myocardial Infarction patients.

MATERIALS AND METHOD

The study was conducted at the departments of Cardiology and Psychiatry of Geetanjali Hospital, attached to the Geetanjali Medical College, Udaipur. Before starting the study, approval of the study protocol was taken from ethics committee of Geetanjali Medical College & Hospital.

60 cases of acute myocardial infarction diagnosed by cardiologist on the basis of ST elevation, in state of stable enough to complete the assessment following two to three months of acute myocardial infarction constituted the sample of study. Similarly, 60 subjects preferably relatives and friends of the patients matched on parameters of

age and sex, who gave informed consent and who were not having any past or present history of MI, formed the control group. Illiterate patients, patients having other major medical or surgical illnesses, patients having history of MI in past and patients of more than 70 years of age were excluded.

The selected patients (group A) and control (group B) were interviewed in detail by using following tools:

- (A) A specially designed Proforma prepared for the purpose of this study. The Proforma included identification data, sociodemographic profile and past history of illness in the subjects.
- (B) Goldberg's Health Questionnaire (GHQ-12): (Gautam et al 1987)¹² It is Hindi version, self-administered 12-item questionnaire. It is a short version of original G.H.Q.-60. The respondent is asked to compare his recent state with his usual state. Interpretation of the answers is based on a four point response scale scoring using a bimodal method (symptom present: 'not at all' = 0, 'same as usual' = 0, 'more than usual' = 1 and 'much more than usual' = 1. Maximum score is 12 and cut off score is 2 or more.
- (C) Beck's Depression Inventory (BDI): (13) The BDI developed by Aaron Beck is a rating scale to measure the severity of depression. BDI is a self-rated scale in which individual rate their own symptoms of depression. In the present study, Hindi adaptation of BDI was used. Individuals were require to rate themselves on a 0 to 3 spectrum with a total score range of 0 to 63. Scores from 0 to 9 represent no depressive symptoms, scores of 10 to 18 indicate mild depression, scores of 19 to 29 indicate moderate depression, and scores above 29 indicate severe depression.
- (D) Hamilton Anxiety rating scale (HAM-A): (Hamilton M, 1959)¹⁴ The HAM-A developed by Max Hamilton is the most widely utilized assessment scale for anxiety

symptoms. It consists of 14 items and it is heavily focused on somatic symptoms, with a great reliance on the patient's subjective report. Each item is rated on 0-4 scale (0-not present, to 4-severe) with a final item, which rates behavior at interview.

OBSERVATION

Information so gathered and data so collected were subjected to suitable statistical analysis using appropriate statistical tools and conclusions were drawn & tabulated.

RESULTS

Table- 1: Sociodemographic characteristics

Sociodemographic characteristics	Study gp N=60	Control gp N=60	X ² , p-value
1. Age group			
31-40yrs	04(6.6%)	05(8.3%)	X ² - 0.13 P>0.5
41-50yrs	12(20%)	12(20%)	
51-60yrs	22(36.6%)	21(35%)	
61-70yrs	22(36.6%)	22(36.6%)	
2. Sex			
Male	40(66.6%)	40(66.6%)	X ² - 0.04 p>0.05
Female	20(33.3%)	20(33.3%)	
3. Marital status			
Married	49(81.6%)	50(83.3%)	X ² - 0.81 p>0.81
Divorced/ Widowed/ Separated Widower/	11(18.3%)	10(16.6%)	
4. Religion			
Hindu	44(73.3%)	42(70%)	X ² - 0.28 p>0.96
Muslim	13(21.6%)	14(23.3%)	
Christian	02(3.3%)	03(5%)	
Sikh	01(1.6%)	01(1.6%)	
5. Domicile			
Urban	34(56.6%)	34(56.6%)	X ² -0.03 p>0.05
Rural	26(43.3%)	26(43.3%)	
6. Education			
Middle	26(43.3%)	20(33.3%)	X ² -1.36 p>0.05
Secondary	16(26.6%)	18(30%)	
Sr. Secondary	10(18.3%)	12(20%)	
Graduate	06(10%)	07(11.6%)	
Post Graduate	02(3.3%)	03(5%)	
7. Occupation			
Housewife	16(26.6%)	15(25%)	X ² - 2.54 p>0.05
Farmer	10(16.6%)	12(20%)	
Businessman	08(13.3%)	05(8.3%)	
Private service	05(8.3%)	03(5%)	
Govt. service	09(15%)	14(23.3%)	
Unemployed	12(20%)	11(18.3%)	
8. H/o Tobacco Abuse (Smoking & Chewing)			
Yes	35(58.3%)	23(38.3%)	X ² - 4.81 P<0.05
No	25(41.6%)	37(61.6%)	

Table- 2: Family characteristics

Family characteristics	Study gp N=60	Control gp N=60	X ² , p-value
1. Family Income			
<5000 Rs/mth	17(28.3%)	16(26.6%)	X ² -0.34 p>0.05
5000-10000Rs/mth	24(40%)	22(36.6%)	
>10000Rs/mth	19(31.6%)	22(36.6%)	
2. Family Size			
<5	10(16%)	14(23.3%)	X ² - 1.04 p>0.05
05 to 10	34(56.6%)	22(36.6%)	
>10	14(23.3%)	22(36.6%)	
3. Family Type			
Nuclear	14(23.3%)	16(26.6%)	X ² -0.18 p>0.05
Ext. Nuclear	30(50%)	29(6.6%)	
Joint	16(26.6%)	11(6.6%)	
4. Family history of cardiac Illness			
Present	19(31.6%)	10(16.6%)	X ² - 5.26 P<0.05
Absent	41(68.3%)	50(83.3%)	

Table-3: Distribution According to score on GHQ-12

Score on GHQ-12	Study group(N=60)	Control Group (N=60)	X ² , p-value
<2	14(23.3%)	32(53.3%)	X ² -11.42, P<0.001
>2	46(76.6%)	28(46.6%)	

Table-4: Distribution of severity of Depression on BDI

Score on BDI	Study group(N=60)	Control Group (N=60)	X ² , p-value
0-9 (No Depression)	36(60%)	51(85%)	X ² -9.82 P<0.05
10-18 (Mild Depression)	10(16.6%)	5(8.3%)	
19-29 (Mod. Depression)	10(16.6%)	3(5%)	
>29 (Severe Depression)	4(6.6%)	1(1.6%)	

Table-5: Distribution of severity of Anxiety on HAM-A

Score on HAM-A	Study group(N=60)	Control Group (N=60)	X ² , p-value
0-17 (No Anxiety)	39(65%)	52(86.6%)	X ² -7.83 P<0.05
18-24 (Mild Anxiety)	10(16.6%)	4(6.6%)	
25-30 (Moderate Anxiety)	7(11.6%)	3(5%)	
>30 (Severe Anxiety)	4(6.6%)	1(1.6%)	

Tables 1 and 2 compare the profile of patient and control groups with regards to sociodemographic,

history of tobacco use and family characteristics. There was no difference between the two groups except tobacco use (58.3%) and family history of

cardiac illness (31.6%) were significantly more in MI patients compared to controls (16.6%).

Table 3 shows distribution of subjects according to GHQ 12 scores, It was observed that 76.6% of myocardial infarction patients scored positively on GHQ 12, while only 46.6% controls scored more than 2 and it was statistically rated significant.

Table 4 depicts the severity of depression, 16.6%, 16.6% and 6.6% of myocardial infarction patients and 8.3%, 5% and 1.6% of controls suffered respectively from mild, moderate and severe depression. Severity of depression was significantly higher in myocardial infarction patients than controls.

Table 5 shows distribution of severity of anxiety on HAM-A scale. Total 35% of MI pts were suffering from Generalized Anxiety disorder, 6.6% pts having severe Anxiety, 11.6% suffering from Moderate anxiety symptoms, 16.6% subjects were having Mild Anxiety symptoms. MI patients had in statistically significant number of Anxiety symptoms.

DISCUSSION

This study was aimed at finding out the Psychiatric Morbidity in MI pts following the first acute attack.

It was observed that 76.6% of myocardial infarction patients scored significantly positive on GHQ 12, while only 46.6% controls scored positive significantly. Various studies^{15,16,17} support on higher prevalence of psychiatric morbidity in post myocardial infarction patients.

Frasure-Smith N, Lesperance F. (2008),¹⁸ also found elevated BDI II score in 27.4% and elevated HADS-A scores in 41.4% of acute myocardial infarction patients. Where in our study 40% myocardial infarction patients were suffering from depressive episode, 35% from anxiety disorder and 16.6% from mixed anxiety & depressive episode. In India Akhtar MS *et al.* (2004),¹⁹ found, symptoms of depression in 14%, anxiety symptoms in 18% & mixed anxiety & depressive

symptoms in 18% of myocardial infarction patients.

Co morbidity of depression and anxiety in MI patients as regards to severity of Psychiatric symptoms, as an independent denominator may be characteristic of severity of symptoms experienced of acute MI experienced, plan of management and personality characteristics of the subjects.

Severity of the depression has been measured on BDI, in present study 16.6% MI pts were suffering from mild depression, 16.6% from moderate depression and 6.6% had severe depression. Martens EJ *et al.* (2008),²⁰ identified four groups and classified as non-depressed 40%, mildly depressed 42%, moderately depressed 14% or severely depressed 4% in post myocardial infarction pts. Rafanelli C *et al.* (2005),²¹ who reported that 30% of myocardial infarction patients were identified as suffering from a major depressive disorder, 9% patients were suffering from minor depression. Meneses R *et al.* (2007),²² found moderate depression in 36% of the subjects and severe depression in 14% of myocardial infarction patients. Significant number of MI pts 35% were having Anxiety symptoms, 6.6% pts having severe Anxiety, 11.6% pts suffering from Moderate to severe anxiety symptoms, 16.6% pts having Mild to moderate Anxiety according to scores on HAM-A.

CONCLUSION

Due to the increasing awareness about the clinical and public health significance of depression and anxiety in MI patients, recognizing burden and severity of these psychiatric disorders will not only help in improving diagnostic practices but will also help to plan the management aimed to improve quality of life and other clinical outcomes in these high risk patients.

Limitations and future implication

The size of the sample was small and it included cases from a private hospital located in Mewar

region of state of Rajasthan. A multicentric study including greater number of population from different cultures prevailing in different parts of state would prove most appropriate. Therefore, these findings cannot be generalized. Many patients were excluded from the study because they were not literate up to minimum educational standard middle class level & were not able to understand and complete the proforma. Therefore such tools should be used which can evaluate even illiterate patients.

Long term prognosis of various psychiatric disorders thus identified in MI patients may be evaluated in a prospective study.

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