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Original Research Paper

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A CROSS SECTIONAL STUDY OF ANXIETY AND DEPRESSION WITH PERSONALITY, HOSTILITY AND STRESSFUL LIFE EVENTS IN PATIENTS ADMITTED WITH ACUTE CORONARY SYNDROME

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ABSTRACT

BACKGROUND: Illness of the body will affect the mind and vice versa. Emotional stress and physical illness has a causal relationship. The epidemic of coronary heart disease started in India in the past two decades. This study was undertaken to study anxiety and depression with personality, hostility and stressful life events in patients admitted with acute coronary syndrome (ACS).

METHODS: 60 patients diagnosed with acute coronary artery syndrome were selected. Tools like Hospital anxiety and depression scale (HADS), Eysenck Personality Inventory (EPI), Presumptive stressful life events scale (PSLES), Hostility and direction of hostility (HDH) were applied and Chi-square test, Karl Pearson's correlation coefficient and student t test were applied to the data. The results obtained were studied.

RESULTS: Among the 60 patients with acute coronary syndrome, 46.7% (n=28) had depressive symptoms, 45% (n=27) had anxiety symptoms. Acute Coronary Syndrome patients with depressive features had increase in neuroticism scores as well as increased frequency of stressful life events and a direct positive correlation was observed between PSLES score and life events with HADs Anxiety scores.

CONCLUSION: Study of psychiatric morbidities in particular anxiety and depression in patients with acute coronary syndrome revealed significant association with depression, anxiety, neuroticism, hostility and life events. The present study and those numerous other studies that have parallel results found in the literature, underlines the need to screen for anxiety and depressive symptoms in patients with ACS, so that appropriate intervention can be incorporated in the management plan.

KEYWORDS : Acute coronary syndrome, depression and anxiety, neuroticism, stressful life events.

INTRODUCTION:

Illness of the body will affect the mind and vice versa. A good cardiac health is vital for the human existence and any discrepancy in cardiac health will ruin both social and personal life. Cardiovascular disease (CVD) is the major health risk for millions of people all over the world. Cardiovascular disease accounts for approximately 30% of the deaths worldwide. The global rise in CVD is due to industrialization, urbanization and associated life style changes taking place all over the world.

Among the cardiovascular diseases, ischemic cardiac diseases is responsible for one third of all deaths from the age of 45 to 64 years.A study done by M.Moosavi, M.Eslami ,O. Sheikh Baglooon found that the subjects with more stressful life events, and greater mental strain smoked more cigars which caused life threatening events such as Atherosclerosis/ Myocardial Ischemia(1). Z.N.Hatmi et al conducted a study of stressful life events with myocardial infarction and association with psychiatric symptoms. His study revealed that depressive features, anxiety symptoms, phobia, obsessions and psychosis were more in myocardial infarction patients(2).

Roseman and Friedman in 1960 gave a study which clearly established that personality characteristics of individual and coping methodologies towards stress play a role in the individual's predisposition to coronary artery disease(3). Type A behavior patterns in the middle class westerners were found to be more prone for acute coronary syndrome. Among many other factors, personality and behavioural traits have been linked to Acute Coronary Syndrome (ACS) risk (Rozanski, Blumenthal, & Kaplan, 1999)(4). Anger and hostility have been foremost among the personality and behavioural traits that have been linked to ACS.

AIMS AND OBJECTIVES:

This study was undertaken to know the prevalence of anxiety and depression in patients affected with Acute Coronary Syndrome and to study the burden of stressful life events, hostility and personality over anxiety and depression in these patients and eventually in course and outcome of ACS.

MATERIALS AND METHODS:

Those diagnosed with acute coronary artery syndrome and age 18 and above were included and those with co-morbid physical illness, previous history of psychiatric illness and non-consenting patient were excluded. After obtaining approval from the institutional ethical committee this study was conducted on acute coronary artery syndrome patients admitted in cardiology ward at Govt. Rajaji Hospital, Madurai. The tests were administered between the 5th to 14th day of admission. Consecutive patients fulfilling inclusion and exclusion criteria were included in the study till the attainment of sample size of 60 and the following scales were administered to them.

1. Hospital anxiety and depression scale(HADS)
2. Eysenck Personality Inventory(EPI)
3. Presumptive stressful life events scale(PSLES)
4. Hostility and direction of hostility(HDH)

STATISTICAL DESIGN:

Statistical design was formulated using the data collected as above. Chi-square test, Karl Pearson's correlation coefficient and student t test for were used. The data was analyzed by means of the Statistical package for Social Sciences (SPSS) version 17.0 for Windows. *"p"* value of < 0.05 was considered significant.

RESULTS:

Table 1: Epi - Neuroticism Vs Depression And Anxiety

EPI-neuroticism	Depression(n=28)				Anxiety(n=27)			
	N	Chi	Df	P value	N	Chi	Df	P value
1.Tendency to be Neurotic	9	$X^2=2.6$	2	P> 0.05	10	$X^2=0$ .794	2	P> 0.05
2.Neurotic	19				17			
Total	28				27			

Table1: shows that a major part of the patients were found to be neurotic in the group of patients who had depressive symptoms and also in the group of anxiety patients.

Table 2: Hdh Vs Depression And Anxiety

HDH	Depression(n=28)				Anxiety(n=27)			
	N	Chi	Df	P value	N	Chi	Df	P value
1.EXTRA PUNITIVE	6	X^2=8.9	2	P< 0.05 (Sig)	11	X^2=0.41	2	P> 0.05
2.INTRO PUNITIVE	22				16			
Total	28				27			

Table 2: shows that a major portion of both the depression (p<0.05 significant) and anxiety group of patients were intropunitive.

Table 3: Psles Vs Depression And Anxiety

PSLES	Depression(n=28)				Anxiety(n=27)			
	N	Chi	Df	P value	N	Chi	Df	P value
1.Moderate Stress	15	X^2= 11.3	2	P< 0.05 (Sig)	17	X^2=4.4	2	P> 0.05
2.Severe Stress	13				10			
Total	28				27			

Table 3: shows that 13 out of 28 depression patients (p<0.05 significant) and 10 out of 27 anxiety patients came under severe stress category.

Table 4: Life Events Vsdepression And Anxiety

LIFE EVENTS	Depression(n=28)		df	P value	Anxiety(n=27)			
	N	Chi			N	Chi	Df	P value
1.Normal	13	X^2=7.6	2	P< 0.05 (Sig)	14	X^2=3.8	2	P> 0.05
2.Abnormal	15				13			
Total	28				27			

Table4: shows that 15/28 depressive patients (p<0.05 significant) and 13/27 anxiety patients were found to have more than 2 stressful events in the PSLES scale.

Table 5: Correlations Matrix For The Variables Under Study

SNO	VARIABLES	HADS DEPRESSION	HADS ANXIETY	EPI-NEURO	PSLES	LIFE EVENTS
1	HADS DEPRESSION	1				
2	HADS ANXIETY	0.239	1			
3	EPI NEURO	0.288(*)	0.208	1		
4	PSLES	0.389(**)	0.310(*)	0.339(*)	1	
5	LIFE EVENTS	0.421(**)	0.3016(*)	0.388(*)	.877(**)	1

* Correlation is significant at the 0.05 level (2-tailed).
** Correlation is significant at the 0.01 level (2-tailed).

DISCUSSION:

Among the 60 patients, patients 46.7% (n=28) had depressive symptoms, 45% (n=27) had anxiety symptoms. We divided patients into groups such as depressive group & anxiety group for various analyses. The group was made through HADS-Score of 8-10 as borderline and more than 11 as clinically significant depression for depressive group, HADS- Score anxiety of 8-10 as borderline and more than 11 as clinically significant anxiety as anxiety group.

In India, the depression prevalence is reported to be about 25% to 34% among post-MI subjects (5). Depression and anxiety were found to be highly correlated with each other. This could be due to two factors – Primarily the ACS sufferers experience a state of general distress rather than from a possible spectrum of specific psychopathologies. Secondarily, the state may be a possible combination of the ACS plus co-morbidity, co-existing illness besides other constitutional and environmental factors that contribute to the levels of overall psychopathology (6). In addition, HADS has multiple overlap in the symptom domain contributing the over diagnosis of the condition, thereby causing higher co-existence of these two conditions.

According to Menon et al., the neuroticism score, in their study emerged as an independent predictor of scores on the HADS and is best described as dimension of a personality that is associated with a tendency to experience negative affect(7). This relationship has been identified in the present study also. Thus, the association of the negative feelings such as anxiety and depression has a high possibility (7,8). A study from Netherlands by van Jaarsfield and his colleagues has confirmed that neuroticism is a predictor of HADS anxiety and depressive symptoms(9). The present results are in concurrence with the their study. As the exact mechanism of this phenomenon is un-deciphered, further studies are necessary to explore and explain the link between the triad of anxiety, depression and neuroticism in ACS and post myocardial infarction survivors. Frasure-Smith has earlier shown that depression following a myocardial infarction will cause a raise the likelihood of the risk of subsequent mortality(10). The 2008 American Heart Association Science Advisory concluded that depression is commonly present in-patients with coronary heart disease and is independently associated with increased cardiovascular morbidity and mortality. Therefore, screening tests for depressive symptoms should be applied to identify patients who may require further assessment and treatment. In view of adverse outcome of depression associated with Coronary Heart Disease and the availability of easy-to-administer and reasonably accurate screening tools, it is reasonable to screen for depression to improve outcomes.

In this study HDH has a statistically significant association with depression. As there are not enough studies to support this finding, it is needed to check for such an association in future similar studies.

In a study by Haldar A et al., it was observed in the control group individuals most often to have experienced an average of two (2.24) stressful life events during the past one-year without suffering from any adverse physical or psychological disturbance. On the contrary, among patients with acute myocardial infarction, the mean number of stressful life events was 4.16 in the past one year(11). Previously, Geyer and others have compared data of three life event studies among depressives, MI patients, and industrial workers. After in-depth of analysis of their data, they related that the number of life events and the depression severity ratings were positively correlated with good statistical significance (12).

Earlier studies that correlated Cardiovascular diseases with psychological diseases have concluded that work-related life events, particularly those with any work load, were significantly associated with the risk of myocardial infarction (13). Hatmi et al., found that change in financial state, departure of spouse/son/daughter leaving home and detention/arrest in the past 6 months, and retirement, emigration in the 6 months before were related to increased susceptibility to myocardial infarction(2). Similarly, in the present study, several life stressor events were identified. The difference in the life related stressor events would be attributed to difference in the socio-cultural-economic demographical factors.

LIMITATIONS:

It is a time bound cross-sectional study, so follow up of cases after onetime assessment was not done. The number of cases included is less, so results cannot be generalized.

CONCLUSION:

With chance of increase of depressive states, as reflected by HADs depressive score, there was increased frequency of neuroticism as well as increased frequency of stressful life events and such scores. Based on the HADs Anxiety score, a directly positive correlation was observed with PSLES score and life events. In patients who had higher degrees of neuroticism, had higher scores of PSLES as well as increased stressful life events. The present study and those numerous other studies that have parallel results found in the literature, underlines the need to screen for anxiety and depressive symptoms in patients with ACS so that appropriate intervention can be incorporated in the management plan. Life stressor events are major risk factors of ACS and psychiatric intervention is needed to be planned for those at risk to prevent future ACS.

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