ORIGINAL ARTICLE

Prevalence of Major Depression among the patients with Coronary Artery Disease (CAD) presenting in medical outpatient department of a tertiary care hospital: A cross sectional survey

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ABSTRACT

Background: Depression is a common comorbid condition, present in patients with coronary artery disease (CAD) and is independently associated with increased cardiovascular morbidity and mortality. It is suggested that all the patients suffering from CAD should ideally be assessed for depression to improve the prognosis of CAD. Apart from this, the risks and benefits of treatment must also be carefully considered in view of the patient's concomitant heart disease.
Aim: To determine the prevalence of major depression among the patients suffering from coronary artery disease
Methods: This cross-sectional study was conducted at the out patient department of a tertiary care hospital of Lahore. The non-probability convenient sampling technique was used. Informed consent was taken from all the patients. DSM 5 criteria was used for the diagnosis of major dépression. All the collected data was entered and analyzed on SPSS version 21.
Results: The mean age of patients was 31.68±7.75 years.The male to female ratio was 1.25:1. Out of total 90 patients 27 (30%) patients belong to low socio economic (SES), 25 (27.8%) belonged to middle and 38 (42.2%) belonged to high SES. Major depression was present in 30 (33.33%) patients.
Conclusion: In the current study the prevalence of depression among the patients presenting with diagnosis of coronary artery disease was 33.33%.
Keywords: Coronary artery Disease, prevalence,Depression,

INTRODUCTION

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Depression is a mood disorder characterized by a persistent feeling of sadness and reduced interest in day to day activities[1].

According to word health organization (WHO) depression, which was the fourth leading cause of disability in 1996[2], became the leading cause of disability globally in 2017[3]. About 10% of the general population is affected by major depression.[4] Depression and physical illnesses are related[5].

Many patients with coronary artery disease (CAD) become anxious, worried, and feel depressed.[1]On the other hand many patients with major depression have increased risk of coronary artery disease[5]. consequently, depression is highly comorbid with CAD. It is two to three times more prevalent among patients with CAD than in the general population, affecting 15–30% of patients with CAD.[7]Association of depression with coronary artery disease is so strong that American heart association and American Psychiatric Association has recommended routine screening of depression in patients of coronary artery disease[8]. In a study which was conducted in Pakistan, the frequency of depression was only 15% in CAD patients[9]. While another study carried out in Pakistan, showed that the frequency of depression was only 37% in CAD patients[10]. According to another study from Pakistan , 42% of CAD patients develop depression[11]. An other study conducted in Pakistan showed 47% prevalence of post-IHD depression[12].

In coronary artery disease, the main focus of treatment is usually on physical symptoms like angina, arrhythmias, and heart failure, and not on psychological effects of disease[13].

Depression may lead to psychological, physical, and social consequences[14]. Psychological symptoms include anxiety, fear, sadness , hopelessness, feelings of guilt and irritable mood[15]. Social consequences involve a decline in social functioning, substance use and abuse, social withdrawal, and decreased performance in routine activities[16]. The long-term complications of depression include brain damage[17], negative effects on the heart,[18], and limited physical activity or the development of sedentary lifestyles[19]. Depression influences lifestyle in areas such as smoking, eating, exercising, adjustment to family and social life, and employment[20,21]. It is associated with an increase in hospital readmissions[22], increased incidence of heart failure[23] double the long-term risk of death after a heart attack[24] increased mortality risk by twofold[14,25] and decreased quality of life and increased medical morbidity[26]. Depression is also associated with elevated risk of cardiovascular disease (CVD)[27] and coronary artery disease (CAD)[28]. Accompanying

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depression on patients with cardiac disease can be more pronounced because of associated medical and social factors. Medical factors can be human immune deficiency virus (HIV), cancer, and end-stage renal diseases. Socio-economic status, particularly education and income, may be associated with depression[29].

The objective of the study was to determine the prevalence of depression among the patients presenting with diagnosis of coronary artery disease.

METHODS

This study was based on a cross sectional survey, conducted in a tertiary care hospital of Lahore. A total of 90 patients were taken from medical outpatient department through convenient sampling technique , between the ages of 18 and 45 years who were already diagnosed to be suffering from coronary artery disease (CAD) by a consultant physician at least one month before. Patients suffering from comorbid medical and psychiatric conditions were excluded. Basic demographic information and description of illness were documented on a proforma. Depressive disorder was diagnosed using DSM – 5 criteria. Data was entered and analyzed with SPSS version 21. Data was stratified for age, gender, socioeconomic status and duration of CAD. Post-stratification, chi-square test was applied to compare frequency of depression in stratified groups. p-value ≤0.05 was considered as significant.

RESULTS

A total 90 patients were included in this study. The mean age of the patients was 31.68±7.75 years, 50 (55.56%) patients were male and 40 (44.44%) patients were female. The mean value of duration of CAD was 12.13±7.27 months with minimum and maximum duration of 2 & 24 months respectively. Among these, 30% patients belonged to low socioeconomic group, 27.8% belonged to middle and 42.2% belonged to higher socioeconomic group. Out of 90 patients the depression was present in 30 (33.33%) patients.

In this study the group of patients with age ≤ 30 years had 42 subjects , out of these 42 subjects 13 had depression, similarly the patients with age >30 years were 48 in number , among these 17 had depression. The study results showed that the male patients were 50 in number and only 21 had the depression. Similarly the female patients out of 40 only 9 patients had depression. In this study the patients with CAD duration ≤ 12 months were 48 in number, among these 12 patients suffered from depression. Similarly the patients with CAD duration >12 months, 18 out of 42 patients had depression. The study results showed that out of 27 patients from the low socioeconomic status (SES) only 10 patients had depression and in middle socioeconomic group 12 patients out of 25 had depression. Similarly in the higher socioeconomic group 8 out of 38 patients had depression.

Variable	Sub group	n (%)	Dep	Chi-S	P-value
Age	≤ 30 years	42 (47%)	13 (31%)	0.201	0.654
	≥ 30 years	48 (53%)	17 (35%)		
Gender	Male	50 (55%)	21(42%)	3.80	0.051
	Female	40 (45%)	09 (22%)		
Duration of CAD (months)	≤ 12	48 (53%)	12 (25%)	3.21	0.073
	≥ 12	42 (47%)	18 (43%)		
Socio Economic Status (SES)	Low	27 (30%)	10(37%)	5.17	0.076
	Middle	25(28%)	12(48%)		
	High	38(42%)	08(21%)		

DISCUSSION

Major depression is a common comorbidity associated with CAD. There is growing evidence that psychological stress in general and depression in particular predispose to cardiovascular disease. It appeared also that depression is an independent risk factor for CAD, even several decades after the first episode. Depression is also an independent risk factor for increased post-acute coronary syndrome morbidity and mortality.[30] Depression may complicate the recovery of CAD, but in most cases depression can be effectively treated with antidepressant agents.

In our study out of 90 patients the depression was present in 30 (33.33%) patients. Insignificant difference was noted when we compared the prevalence of depression between the sub groups of gender, duration of CAD, Socio economic status and age.

In a study conducted in Pakistan, Qadri, Iqbal , Babar et al. the frequency of depression was only 15% in CAD patients[31]. While in another study Bokhari , Samad, Hanif et al. studied 154 patients with coronary artery disease and showed that the point prevalence of depression was 37% in the sample[32]. Fattah, Zulfiqar, Hafiz et al. studied 250 patients with coronary artery disease and showed that 42% of CAD patients developed depression.[33] In another study which was conducted in Pakistan by Dogar, Imran . Khawaja et al. in which 100 patients of IHD were included, showed 47% prevalence of post-IHD depression[34].

Mohammed. Mohsen et al described In their study that the frequency of depression with acute coronary syndrome was 20.6%, and the highest frequency was recorded among patients from the Indian subcontinent (34.4%). Smoking and dyslipidemia were the strongest independent risk factors for depression[30].

Bahall conducted a study on 388 hospitalized patients and found 40% prevalence of clinical depression in cardiac patients of Trinidad and Tobago[35].

Allabadi, Alkaiyat, Alkhayyat et al found higher levels of anxiety and depression in the Palestinian cardiac patients and gave their recommendation for integrating mental health care into cardiac rehabilitation process[36].

Varying intensity of depression ranging from mild depressive symptoms to a clinical diagnosis of major depression, was identified as a risk factor for CHD[37]. Ansari, Fallahi, Ghanem et al also concluded that

Depression was an independent risk factor for the development of IHD[38].

Karina and Davidson found that the point prevalence of depression for patients with a recent myocardial infarction (MI) or unstable angina (acute coronary syndrome; ACS) was 33% (range, 17%-46%)[39].

Schleifer, Macari-Hinson, Coyle et al showed that depression was only in 18% patients of post-IHD[40,41] .

Rivelli and Jiang [42]demonstrated that the cardiologists encounter depression among 25-30% of their patients with IHD. Depression is an independent risk factor for poor prognosis among IHD patients, at a level comparable to several conventional cardiac risk factors.

Another study conducted by Rudisch B, Nemeroff CB. reported that 17% to 27% of patients with IHD have major depression, a significantly larger percentage has subsyndromal symptoms of depression[43].

Weeke et al[44] reported a 50% increase in deaths from Cardiovascular diseases among depressed patients when compared with the general population. There was initial concern that the high cardiovascular mortality rate might be caused by antidepressant therapy.

Depression in patients with CAD is common. The point prevalence for patients with a recent MI) or unstable angina (acute coronary syndrome) and elevated depressive symptoms is 33% (range, 17%-46%)[45].

For unstable angina patients, the point prevalence of depressive symptoms is 41%.[46] As noted in a comprehensive review, almost 2 out of every 5 CHD patients have clinically significant depression[47].

It may be noticed that different local and international studies have given different figures for the prevalence of depression but all have the studies have found a significant association between IHD and depression. Difference in figures given for prevalence of depression, may be due to difference in demographic characteristic of study population and also difference in the time period selected for assessment during the course of disease.

CONCLUSION

In current study the prevalence of depression among patients presenting with diagnosis of IHD was 33.33%.This is a significant number. Early detection and treatment of depression can significantly affect morbidity and mortality of CAD. Being the independent risk factor for the development of IHD mental health should be made an integral part of IHD rehabilitation process

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