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Prevalence Rate of Depression among Ischemic Heart Diseases Patients in Al-Diwaneya Province / Iraq

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Abstract

Background: Cardiovascular disease is on the upraise in the industrialized and unindustrialized countries, which characterize at the present time one of the chief challenges for the health systems all the world. Depressed Ischemiac Heart disease patients may have a poorer outcome than non-depressed patients ,so this study was performed with the aim of finding the link between depression and ischemic heart disease and its association with demographic factors in Iraqi patients.

Patients and Method: The study was designed to be a case- control study involving 128 case of IHD patients and120 apparently healthy individuals serving as control group, with an age range from 20y-80y in Al-Diwaniyah Teaching Hospital in Al-Diwaniyah province/ Iraq. were examined for the presence of depressive disorder using ICD-10 diagnostic criteria and then assessing the severity of the depression in the depressed group by using Beck Depressive Inventory(BDI).

Results: The prevalence rate of depression was 48.3% in IHD patients while 22.5% in control groups .

Conclusion: Because of high rate of depression among patients with different types of heart diseases, early detection and identification of as possible ,to improve outcome .

Key wards*: depression, ischemic heart disease(IHD), prevalence rate*

Introduction

Depression and coronary artery (CAD) are both very widespread diseases . They are changing quality of life and life expectations [1].It is extended to be predictable that minor type of depression are found in up to 2\3 of patients in hospital after acute myocardial infarction [AMI], with major depression generally being established in about 15% of CVD patients [2]. The linking between the CHD and major depression disorder (MDD) was studied generally over recent periods and the prevalence of both situations has grown all over the world. Many studies over the past 2 decades show depression disorder is the most significant world health problems according to the WHO reports [3]. The association between the CHD and major depression disorder (MDD) was studied extensively over recent decades and the prevalence of both conditions has risen all over the world. Every disorder remainders a main supplier to the overall burden of disease [4]. Depression is one of principal risk factor for IHD in several studies [5]. In China a meta-analysis study based on 27 studies the prevalence of depression was 51%in cardiovascular patients [6].,However the aim of this study is to identify the prevalence rate and determine the severity of depression, and its socio demographic characteristics among patients with ischemic heart disease in Al diwainya city in Iraq .

Patients and Methods

This study was designed as a case-control study, the case group being chosen from Iraqi patients whose diagnosed as Coronary Artery Diseases .A 120 patients were randomly included in this study from patients admitted to AL-Diwaniyah Teaching Hospital in cardiac care unit and cardiac catheterization center in AL-Diwaniyah province whose IHD was diagnosed/ confirmed via angiography and by specialists and120 healthy people as control group .

Only 8 of these cases were refuse to take part in our study ..كrking days were 5 days /week ,starting from The study was started from the20th January 2019 and

ended on the 10th June 2019.the including criteria in the study were to be all patients with ischemic heart disease of any age and sex were included , age20 year or older with no family history of depression. And the excluded patient were ,those with congenital heart disease and very tired patients and refusal from patient's side to be involved in the study. Any patient with previous history of depression before heart disease and patients was have depression secondary to any organic disorder or substance abuse.

The study was approved by the Committee of Ethical Approval at Collage of Medicine / University of AL- Qadisiyah .And Verbal consent was considered when patients were selected to be part in our study.

Data was collected using a designed questionnaire having of three parts . The first part involved detailed socio-demographic and clinical information got from patients' , second part questioner for diagnosis depression according to ICD -10 . The third part was for asses the severity of depression according to Beck Depression Inventory(BDI) score administered during a private interview The questionnaire, including the apparatuses, was translated from English to Arabic and back-translated from Arabic to English by two fluent specialists.

BDI test This questionnaire contains 21 multiple choice questions, each adding 0-3 points to the final score depending on the choice designated by the patient. This questionnaire was studied for validity and reliability and the endpoint points were set as following: those patients who scored a total of 0 to 9 were considered "Normal (no depression)", 10 to 19 as "mild depression", 20 to 29 as "moderate depression", and 30 and above as "severe

Results

The prevalence rate of depression among patients and control subjects is shown in table 2. Total cases of depression among control subjects were 27 out of 120 (22.5 %), whereas, there were 58 patients with depression accounting for (48.3 %); there was highly significant difference in the prevalence rate of depression between ACS patients and control groups, 48.3 % versus 22.5 %, respectively ($P < 0.001$), as shown in table 1. The prevalence rates of mild, moderate and severe depression among ACS patients were 18.3%, 20.8% and 9.2%, respectively. On the other hand, the prevalence rates of mild, moderate and severe depression among control subjects were 15.0 %, 5.8 % and 1.7%, respectively, table 3.

Table 1: Prevalence rate of depression among control and Acute coronary syndrome groups

Depression	**Control group n = 120**		**ACS n = 120**		**χ2**	**P**
	N	**%**	**n**	**%**		
Mild	18	15.0	22	18.3	17.506	<0.001 ¥ HS
Moderate	7	5.8	25	20.8		
Severe	2	1.7	11	9.2		
Total cases of depression	27	22.5	58	48.3		
Normal	93	77.5	62	51.7		

n: number of cases; ACS: acute coronary syndrome; ¥: Chi-square test

Patients with acute coronary syndrome were categorized into three groups, stable angina, unstable angina and acute myocardial infarction (MI). The frequency distribution of patients with stable angina, unstable angina and acute myocardial infarction (MI) according to 10 years age intervals is shown in table 2. The mean age of patients with acute MI was significantly higher than both stable and unstable angina ($P < 0.05$),. There was also no significant association between gender and type of ACS (P = 0.516), table 3. There was, in addition, no significant association between marital status and type of ACS (P = 0.318), as shown in table 4.

Table 2: Distribution of patients with acute coronary syndrome according to age

Age (years)	Stable angina n = 43		Unstable angina n =31		Acute MI n = 46	
	N	%	N	%	N	%
21_30	0	0.0	2	6.5	1	2.2
31_40	3	7.0	4	12.9	3	6.5
41_50	10	23.3	4	12.9	6	13.0
51_60	11	25.6	7	22.6	8	17.4
61_70	12	27.9	8	25.8	12	26.1
71_80	4	9.3	5	16.1	10	21.7
>80	3	7.0	1	3.2	6	13.0
Mean ±SD	58.02	6.83	55.97	5.92	62.61	5.21

n: number of cases; SD: standard deviation; MI: myocardial infarction

Table 3: Distribution of patients with acute coronary syndrome according to gender

Gender	Stable angina n = 43		Unstable angina n =31		Acute MI n = 46		χ^2	P †
	n	%	N	%	n	%		
Male	25	58.1	19	61.3	32	69.6	1.325	0.516 NS
Female	18	41.9	12	38.7	14	30.4		

n: number of cases; MI: myocardial infarction; †: Chi-square tests; NS: not significant at $P \leq 0.05$

Table 4: Distribution of patients with acute coronary syndrome according to marital status

Marital status	Stable angina n = 43		Unstable angina n =31		Acute MI n = 46		χ^2	P
	N	%	n	%	n	%		
Single	0	0.0	1	3.2	3	6.5	4.713	0.318† NS
Married	33	76.7	25	80.6	30	65.2		
Widowed	10	23.3	5	16.1	13	28.3		
Divorced	0	0.0	0	0.0	0	0.0		

n: number of cases; MI: myocardial infarction; †: Chi-square tests; NS: not significant at $P \leq 0.05$

Table 5: Distribution of patients with acute coronary syndrome according to occupation

Occupation	Stable angina n = 43		Unstable angina n =31		Acute MI n = 46		χ^2	P
	N	%	N	%	n	%		
Unemployed	6	14.0	4	12.9	9	19.6	0.588	0.745 †¥ NS
Employee	3	7.0	7	22.6	8	17.4		
Private job	8	18.6	5	16.1	7	15.2		
Military	1	2.3	0	0.0	1	2.2		
Retired	12	27.9	10	32.3	15	32.6		
Housewife	12	27.9	5	16.1	6	13.0		
Student	1	2.3	0	0.0	0	0.0		

n: number of cases; MI: myocardial infarction; †: Chi-square tests; NS: not significant at $P \leq 0.05$; ¥: comparison was made between those having job or student and those without job, retired or housewives

Discussion

Our study estimate about 128 cases of Ischemic heart disease (IHD) Diagnosed by cardiologists doctors admitted to Intensive care unit in AL Diwaniyah Teaching Hospital and patients admitted to the center of cardiac catheterization in AL Diwaniyah city, only 120 cases accept to sharing in our search, same number of cases taken as control group whose apparently healthy people. Our study shows response rate 93.75% and other 6.25%(5 of them refuse sharing in our search and other 3 cases were tired). It is good reaction rate for sharing . This equivalent rates of sharing with Iraqi family health survey (IFHS) 95% [7] ,as well as similar to Salman study 2009 (93.6%) [8] and equated to study conducted in Iraq in 2018 (94.1%) [9]. This high response rate because Iraqi's peoples want someone to take care for them and listening to their problems . In present study shows the mean age of IHD cases and control group were 59.25 5.97y Versus 55.92 3.78 y, respectively (P = 0.071),so there was no significant difference in the frequency distribution of mean age between control and patients groups. Moreover no statistically interactions was found in the frequency distribution of both groups according to others demographic features [gender , occupations , level of education and marital status] P 0.05.That is suggests demographic data not consider as risk factor of developing IHD. Furthermore our study's result resembling another study conducted in Iran 2018 which found that no relationship between demographic features of IHD patients and control group[10] moreover it is same result of study conducted in India [11].In our study from 120 cases of control were (27) cases have depression according to ICD10 diagnostic criteria of depression the prevalence rate was (22.5%), there were 58 patients of (IHD) have depression prevalence rate (48.3%) which it is highly significant difference (P 0.001). These results go with many studies one of them study conducted by Shalan *et al*. shows that prevalence rate was 45%, which was analogous to our study [9]. Other study prepared in Iran prevalence rate was (46.5%) in (IHD) patients, while controls cases (19.5%).[10]. Moreover our study results are analogous to other study showed in Poland, prevalence rate of depression was present in 46.3 % of IHD patient while control cases was (21.2%) [12] .Additionally according to meta-analysis done in Iran found that prevalence rate of depression in IHD patients was 47% [13] .The present study result higher than results of study finished in Iraq, prevalence rate was 24% in different types of heart disease while in control group was 4% [14] .This difference may be due to small sample size and they take different types of heart disease; in Iraqi patients the stressful conditions are increased every day. Furthermore our result was higher than many studies, study done in Virginia in 2014 was 33% [15] , Iraqi mental health survey(IMHS) [16],study done in Pakistan

the prevalence was 27% [17] WHO educational program on depression was 33% [18], study conducted in Iran on 300 patient show prevalence rate 38% [19] and other study done in Germany prevalence rate was (22%) [20] . The prevalence rate of depressed IHD patients in our study was lower than carney study (65%) and (51%) in study done in China and lower than Pena FM., *et al* results($67_{\%}$)[21,22,23].Other study on Iranian patients found prevalence rate of depression was 73.2% [24] . The most important explanations for these dissimilarity in the results of prevalence rates among many studies were using different instrument (questionnaires) to evaluate the prevalence rate of depression [25]. Regarding the severity of depression; the prevalence rate of mild, moderate and severe depression among IHD patients according to BID score were 22 (18.3%), 25 (20.8%) and 11 (9.2%) respectively while in control group show in mild, moderate , and sever type of depression 18 (15.0%) , 7 (5.8%) and 2 (1.7%).The degree of severity of depression is statistically highly significant (P 0.001) in releation with coronary heart disease. Other study done in Iraq in 2018 by using HAMD – 17 and DSM-IV found (P = 0.003) highly significant correlation of severity of depression with Ischemic heart disease showed 14.9% for mild depression, 20% for moderate depression, 7.06% severe depression and3.14% very severe depression [9] ,while these results not go with study done in Iraq 2014 only 3% have mild depression and prevalence of moderate depression in IHD 8% while severe depression only 1% [14] . Patients with IHD divided in to 3 type's stable, unstable and acute myocardial infarction. The mean age in our study 59.25 5.97y and found that mean age in acute myocardial infarction 62.61 which was more than mean age in stable, unstable angina (58.02; 55.97).

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Conflict of Interest: None to declare.

Ethical Clearance: All experimental protocols were approved under the College of Medicine/University of Al-Qadisiyah, Iraq and all experiments were carried out in accordance with approved guidelines.

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