Depression in Patients with Acquired Heart Diseases in Baghdad

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ABSTRACT:

BACKGROUND:

Both heart diseases and depression are highly prevalent, Depression can add to the suffering already present due to the physical condition of the cardiac patients and it affects the outcome.

OBJECTIVE:

Is to find-out the prevalence of depressive disorder among patients with three different categories of heart diseases in three different Iraqi Hospitals; to find out gender differences, some demographical data and the difference between first time affected patients and recurrent cases of heart problems, in regard to the prevalence of depression in these patients.

PATIENTS AND METHODS:

A case control study was conducted using 100 patients, with an age range from 30-89y who has been diagnosed by Qualified Internists, this group was compared with another 100 control group with the same age and at the same time, both groups 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.

RESULTS:

The present study revealed that (24%) of study patients compared to (4%) of the control group were depressed and there was a significant association between the severity of depression and the different types of heart diseases, also females were more severely depressed than males.

CONCLUSION:

There is a high rate of depression among patients with different types of heart diseases, which is often goes unrecognized, untreated, and under estimated, early detection of depression is critical, because of adverse outcome attributed to depression.

KEY WORDS: depression, acquired heart diseases.

INTRODUCTION:

The relationship between the heart and brain has been a topic of interest since the earliest stages of psychological inquiry.[1]In the year 2020, the top two contributors to the worldwideburden of disease are predicted to be ischemic heart diseases(IHD) and major depression.[2]

Some clinical manifestations of Coronary heart disease: [3] Stable angina'Unstable angina'Myocardial infarction'Heart failure' Arrhythmia'Sudden death

A male predominance in incidence exists up to approximately age 70 years, when the sexes converge to equal incidence.[4, 5]

Depression after myocardial infarction is prospectively associated with an increased risk of adverse cardiac outcomes. [6]Research over the past two decades has shown that people with heart disease are more likely to suffer from depression than otherwise healthy people, and conversely, that people with depression are at greater risk for developing heart disease.[7]It is found that Depression play an important role in affecting blood coagulation endothelial activity, heart rate variability, patient compliance with medication, adherence to a healthy diet, and smoking cessation, all of which influence the morbidity and mortality associated with AMI. [8]

Despite these findings, Depression is frequently undiagnosed and untreated in patients with cardiovascular disease. It is estimated that only 25 percent or less of cardiac patients with major depression are diagnosed with depression, and only about one half of those patients receive treatment for depression.[9]

Depression may be undiagnosed and untreated in patients with cardiovascular disease because of

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the following factors: (1) some symptoms, such as fatigue and insomnia, are common to depression and coronary heart disease; (2) physicians and patients may erroneously believe that depression is a normal reaction to cardiovascular disease; (3) patients may be reluctant to report symptoms of depression in this setting; (4) physicians may be reluctant to ask their patients about depression[10] and (5) physicians may be reluctant to prescribe antidepressant medications to patients with cardiovascular disease because of potential adverse side effects. [11]

Strong evidence exists to indicate that both psychosocial interventions and SSRIs are effective in improving depression in MI survivors.[12]

The study aimed to:

-Estimate the prevalence of major depressive disorder among three different types of cardiac patients and to study some of their demographical data

PATIENTS AND METHODS:

A case-control study was carried out in three different hospitals in Baghdad (Ibn Al-Nafees Hospital, Ibn Al-Bitar Hospital and Baghdad Teaching Hospital) from the 17th of March 2014 to 15th of October 2014. The study was conducted randomly in 100 patients with acquired heart diseases who were put in three classes:

-Ischemic heart disease (IHD) which includes patients with myocardial infarction or angina or both.

-Heart failure (HF); systolic or diastolic or both.

- Mixed type (this category includes patients with more than one type of heart diseases eg.both ischemic heart disease and heart failure or arrhythmia or acquired valvular disease or hypertension with IHD and/or HF. The diagnosis of heart disease was established by the senior specialists in these hospitals.

Healthy control groupcomprised 100 persons {relatives of patients, author relatives and friends} matched for age and sex.All groups were interviewed and their consent was taken before the interview andMini-Mental State Examination (MMSE) (an Arabic form which was used in previous Iraqi thesis with a cut of point of 23) was used in patients with suspicion of having cognitive impairment, patients were surveyed for the presence of depression by using international diagnostic check list for ICD-10 [13]. The Arabic version of beck depressive inventory (BDI-I) was used in the depressed patients to assess the severity of depression.

Inclusion criteria:

1. Age18year or older.
2. Patients with no other physical illness.
3. No family history of depression.

The exclusion criteria:

1. Age less than 18 year.
2. Patients had depression secondary to any organic disorder or substance abuse.
3. Any patient with past history of depression before heart disease.
4. Those with congenital heart disease and very tired patients and unwillingness from patient's side to be involved in the study.

BDI (13 items)[14] is adequate in assessing the severity of depression .The assessment is a self – rating one, each item is from 0-3 and falls into three categories:-

Mild … (5-7).Moderate… (8-15).Severe... (>16).

Statistical analysis :

Using the statistical package for social science (SPSS) version 20, Chi-Square Test, and ***P***-value were evaluated by a Statistician. P value of equal or less than 0.05 was considered significant

RESULTS:

The study sample consisted of 100 patients from three different hospitals (45 patient from Ibn Al-Nafees Hospital ,35 patient from Ibn Al-Bitar Hospital and 20 patients from Baghdad Teaching Hospital)with three categories of heart disease{ (IHD),(HF) and the mixed category (mix)} in comparison with 100 controls (with no history of heart disease or any medical illness).

Description of the sample (case):-

Table 1: Includes the age of the study subjects.

Age	Dep.					
	Yes		No		Total	
	No.	%	No.	%	No.	%
30-49	3	12.5	10	13.2	13	13
50-69	12	50	52	68.4	64	64
70-89	9	37	14	18.4	23	23
Total	24	100	76	100	100	100

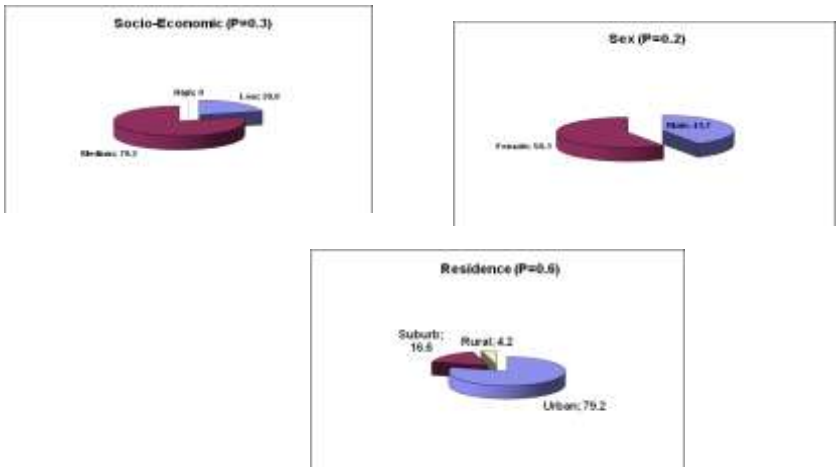


Figure 1: Some demographical data of the depressed cardiac patients

The socio-demographical data of the control group:

The prevalence of depression is (4%) and the sample consists of 50 male and 50 female, 75%of the depressed were females and 50% of the depressed were of age range between 30 to 49 years. All the depressed patients were from urban area and 75% of the depressed were of medium class.

It is shown that only 3% of general population has mild depression compared to 15% of patients with heart disease, while prevalence of moderate depression in heart disease was 8% compared to 1% of general population. Finally the prevalence of severe depression in patients with heart disease was (1%) while that of general population was (0%).

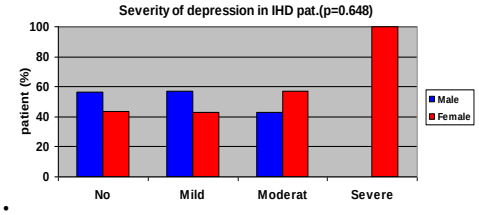
Table 2: The relation between the number of IHD attacks and the severity of depression: patients with more than one attack were higher than those of first attack.

	1 St attack %	> 1 attack %	Total %
Dep. MILD	33.4	13.3	46.7
MODERATE	13.3	33.4	46.7
SEVERE	6.6	0.0	6.6
Total	53.3	46.7	100

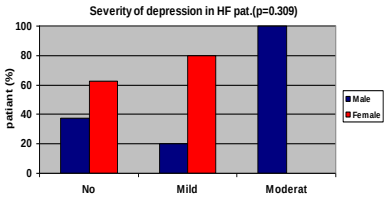
depression was found in 41.7% of males and 58.3% of females and regarding the severity of depression, moderate to severe depression in females (55.6%) was higher than that of males (44.4%), P=0.83

Table 3: The prevalence of depression in different heart diseases was: 23.8% of IHD patients were depressed (15 out of 63 patients),14 patients were suffering from heart failure, 6 were depressed (42.9%).23 patients were suffering from more than one type of heart disease and 3 of them (13%) were depressed.

DISEASE / DEP	IHD		HF		MIX		TOTAL	
	N0.	%	N0.	%	N0.	%	N0.	%
YES	15	23.8	6	42.9	3	13.0	24	24.0
NO	48	76.2	8	57.1	20	87.0	76	76.0
TOTAL	63	100.0	14	100.0	23	100.0	100	100.0
	$\chi^2 = 4.244$		$p = 0.120$					



(a)



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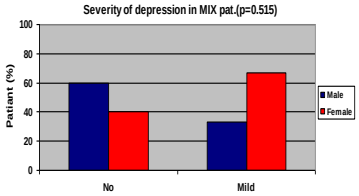

(c)

Figure 2:The relation between the severity of depression and the gender:
-no relation was found between the severity of depression and the gender as P value >0.05 for each type of depression in (a-b-c).
(a) In IHD patients moderate depression was found in nearly 60% of females compared to 40% of the males and all the severely depressed patients were females.
(b) In HF patients 66.7% of females were depressed compared to 33.3% of males {80% of the depressed females suffered from mild depression compared to 20% of males}.
(c) In MIX group all the cases were of mild type (66.7%females and 33.3% males).

Table 4: The relation between depression and the duration of the heart disease

DISEASE	DEP / DISEASE DURATION	YES		NO		TOTAL	
		No.	%	No.	%	No.	%
IHD	< 3 MONTH	٦	٤٠,٠	٣٣	٦٨,٨	٣٩	٦١,٩
	3—6 MONTH	٣	٢٠,٠	١	٢,١	٤	٦,٣
	> 6 MONTH	٦	٤٠,٠	١٤	٢٩,٢	٢٠	٣١,٧
	TOTAL	١٥	١٠٠,٠	٤٨	١٠٠,٠	٦٣	١٠٠,٠
	=٠,٠٢١P²=٧,٧٢٧ χ						
HF	< 3 MONTH	١	١٦,٧	٤	٥٠,٠	٥	٣٥,٧
	3—6 MONTH	٠	٠,٠	١	١٢,٥	١	٧,١
	> 6 MONTH	٥	٨٣,٣	٣	٣٧,٥	٨	٥٧,١
	TOTAL	٦	١٠٠,٠	٨	١٠٠,٠	١٤	١٠٠,٠
	=٠,٢١٥P²= ٣,٠٧٧ χ						
MIX	< 3 MONTH	١	٣٣,٣	٢	١٠,٠	٣	١٣,٠
	3—6 MONTH	٠	٠,٠	٤	٢٠,٠	٤	١٧,٤
	> 6 MONTH	٢	٦٦,٧	١٤	٧٠,٠	١٦	٦٩,٦
	TOTAL	٣	١٠٠,٠	٢٠	١٠٠,٠	٢٣	١٠٠,٠
	=٠,٤٢٩P²= ١,٦٩٣ χ						
=٠,٢٩٧P²= ٢,٤٢٧ χ							

Regarding number of admissions to hospitals due to cardiac causes and the development of depression nearly 33.3% of those who suffered from depression had more than two admissions but no significant association between number of hospital admissions and the development of depression (p=0.066), no relation was found between catheterization and depression as 73.3% of the depressed ischemic heart disease patients didn't have catheterization and p value = 0.67.

40% of the depressed patients with IHD had one CCU admission but was found as p=0.399. Nearly 90% of the heart disease patients did not have a stressful event but there was a significant association between stressful life events (loss of a loved person or any stressful condition) and the later development of depression as p value=0.00.

The majority of patients were of medium class and there was no association between depression and the economic state as p was>0.05

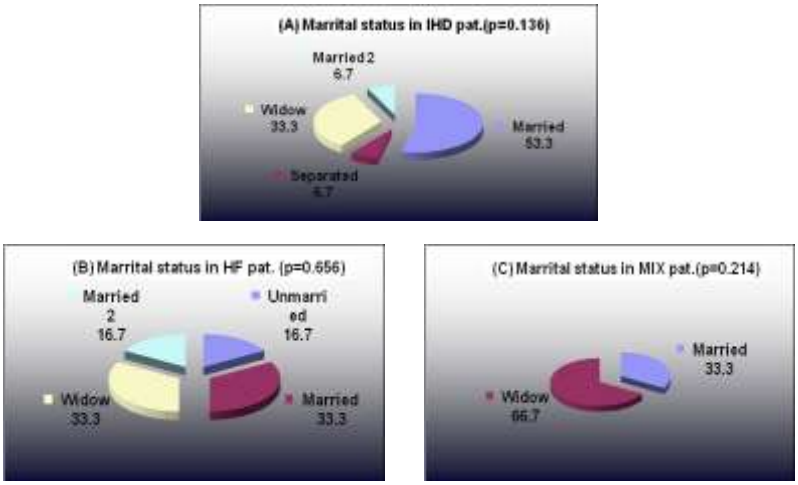

Figure 3: Marital state in depressed patients with different types of heart diseases:

(A) Illustrated that 53.3% of the depressed IHD patients were married, 33.3% were widow and 6.7% were separated.

(B) Illustrated that 33.3% of the depressed HF patients were married and the same percent were widow, 16.7% were unmarried and the same percent were married twice.

(C) Illustrated that 66.7% of the depressed MIX patients were widow and 33.3% were married.

No association was found between the educational level and the development of depression although the majority of the depressed patients of different heart diseases were illiterate.
60% of the depressed IHD patients were smokers , less than 40% of the depressed HF patients were smokers and more than 60% of the depressed MIX patients were smokers but no relation was found between smoking and the development of depression as p=0.488.
no association between playing sports and the development of depression in different types of heart diseases (p=0.081), more than 80% of the depressed patients of different types of heart diseases were not playing sports

DISCUSSION:

In this study the frequency of depression among a selected group of patients with different types of heart diseases was 24% (table1), which can be classified as: The prevalence of depression among those with ischemic heart disease was 23.8%.The prevalence of depression among those with heart failure was 42.8% and the prevalence of depression among those with mixed type was 13%.
These results were higher than the prevalence of depression in the control group which was found to be 4 % and this is consistent within the range of several previous studies:
-Redar M.[15]: 52% of the patients with AMI were depressed compared to 21% of the control group ,Gottlieb of New York. [16] Depression was found in 48% of hospitalized in patients suffering from heart failure, 64% of the females and 44% of the males were depressed, younger aged patients were found more depressed than older one. Astudy done by Steven J.Schleiferetal.[17]in which three to four months after infarction, 33% of the in patients fallowing MI met criteria for minor or major depression. In a study done by R P Steeds etal[18] Depression post-MI is common in the UK and is detected in 47% of patients using the BDI-II
The study done by Cristina M and colleague [19] in Romania to patients with ST elevation myocardial infarction showed that about one third (36.5%) of the patients that suffered STEMI developed depression six months after the cardiac event.
A recent study based on National Health Interview Survey data of 30801 adults found the 12-month prevalence of major depression to be 9.3% in individuals with cardiac disease as compared with 4.8% in those with no comorbid medical illness.[20]
In general most studies showed that the reported prevalence of potentially significant symptoms of depression varies more widely in a range from 10% to 47 %.[21]
This difference among some studies could be due to: Small sample size, in the addition to the use of different means for assessment of depression.
Challenges in evaluation symptoms of depression among patientshospitalized with acute medical illness, somatic symptoms used to diagnose depression can be difficult to distinguish from symptoms secondary to medical illness .
-Regarding some demographic data:
in the control group 75%of the depressed group were female in compare to 25%males this is consistent with the researches which demonstrate that the prevalence of depression in females in general population is double or even triple than that of males.[22]
A study done by Bjerkeset, there was a high prevalence of depression among female gender, where the risk for developing depression is gender specific.[23]
The results of the present study showed that (50%) of patients with moderate depression were females, some studies showed that a major cardiovascular trauma such as STEMI can trigger easily depression in women, rather than men (Brown) [24] Also women show a tendency to minimize emotional outbursts, therefore medical addressability is lower (Fielding).[٢٥]
Patients with heart failure: 42.8% of heart failure patients were depressed, 83.3% of them were mildly depressed and there was a significant association between HF and the severity of depression as p value =0.001, this is higher than a study done by Thomas Rutledge and colleague [26] a meta-analytic review of more than 36 study in which Depression was present in over 20% of all HF patients, with rates doubling among patients with more severe HF.
Regarding the depressed group: 79.2% of them were of medium economic state, 58.3% are housewives, 54.2% were illiterate and 79.2% were from urban areas.(table 1). There was no association between the socio-demographic data and the development of depression(p value > 0.05) except the marital status (p=0.048), this may be due to the small sample size.No association was found between numbers of admissions due to cardiac cause, catheterization, and number of CCU admissions and the development of depression. No association was found between disease duration, smoking and

playing sport and the development of depression. The role of psychological trauma was mentions by many authors which studied the impact of these events upon human psyche (Cohen & Wills[27]) these researchers showed a significant increase of morbidity risk in case of exposure to different stressors of fluctuating intensity. Majority of studies seem to indicate the fact that onset of psychiatric diseases follow one of two models: the disease appears after one singular sudden traumatic event (macrotrauma theory), or it emerges after a long string of unpleasant, repetitive, low intensity experiences (microtrauma theory) (Chrousos& Gold). [28] Presently it is considered that in disease's pathogenesis the important factors are not just the number or intensity of life events, but individual significance that is attributed to them and psychological status of the person (Belar et al).[29] There was an association between both presence of social support (p=0.011) and presence of stressful life event (p=0.00) and the development of depression this may be due to the recurrent stressful conditions in everyday life in Iraq.

CONCLUSION:

There is a high rate of depression in patients with heart disease (24%) in compares to the healthy population (4%) often goes unrecognized Illiterate patients, urban residence and housewives are at higher risk of developing depression after heart disease.

RECOMMENDATIONS

Longitudinal studies should address the risk factors contributing and accelerating the development of depression in cardiac patients and the protective factors.Additional fallow up studies are needed that assess depression (or depressive symptoms) in groups of patients at various time points after cardiac disease with increase the sample size as much as possible.

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