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Research Article

PREVALENCE OF DEPRESSION IN DIABETIC POPULATION OF KARACHI

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Abstract:

Objective: To determine the prevalence of depression among the diabetics presented diabetic clinic and in-patient at Jinnah Postgraduate Medical Centre Karachi.

Patients and Methods: Cross-sectional study was conducted in Medical Unit 3, Ward 7, Jinnah Postgraduate Medical Centre, over two months in 132 diabetic (type 1 and 2) patients. Information regarding Diabetes was taken through interview and Prime-MD Patient Health Questionnaire (PHQ-9) was used to assess for depression. Patients having a score of 5 and above were considered depressed

Results: 64.5% of diabetics were found out to be depressed. Of those who were depressed, 84.4% had a bad diabetic control over the last 3 months, 71.7% had gastrointestinal symptoms, 66% had diabetes for more than 10 years.

Conclusion: Depression in known diabetics can be lethal so it's management, either supportive or with medications, should be started as soon as it is diagnosed. Also the factors which show a clear correlation with development of depression should be minimized as early as possible.

Keywords: Diabetes, Depression and Prime-MD Patient Health Questionnaire

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INTRODUCTION:

The depressive disorder is a syndrome that reflects a sad, blue mood exceeding normal sadness or grief characterized not only by negative thoughts, moods, and behaviors but also by specific changes in bodily functions. One in 10 people will have a depressive disorder in their lifetime, and in one of 10 cases, the depression is a fatal disease as a result of suicide. Some types of depression run in families. Since this illness is diagnosed only clinically, complete physical and psychological assessment is necessary. A person cannot will it away. Untreated, it will worsen. Undertreated, it will return. The liaison between diabetes and depression is bidirectional [1]. Depression when hits a diabetic person, this turns out to be even more detrimental than diabetes alone. Depression may contribute to poor diabetes-related outcomes, similarly diabetes and its complications may also contribute to poor depression outcomes in patients all over the world [2]. The distinct correlation demands timely management of each of these illnesses in order to reduce the associated morbidity and mortalityⁱ plus the cost of healthcare [3, 4]. Gender difference carries significance both for diabetes and depression, so does age. Unemployment means physical under-activity as well as a psychological challenge. Alike independent factors are certainly influential [5]. Regarding the complications of diabetes and metabolic syndrome, duration of diabetes, gastrointestinal symptoms, complaints of peripheral neuropathy, deranged glycemic control, and other micro and macro-vascular impediments possibly lead to poorer depression grades. Likewise depression increases the likelihood of such complications in diabetics [6]. The rationale of our study was to learn the statistics of the diabetic inhabitants who suffer from depression concomitantly in our part of the world for the reason that data from here is scanty.

PATIENTS & METHODS:

A cross-sectional analytical study was conducted over a period of two months that is from October 2015 to November 2015 on Pakistani, type 1 and type 2 diabetic males and females irrespective of age presented to the diabetic clinic at Medical Unit 3, Ward 7, Jinnah Postgraduate Medical Centre, Karachi. The sample size was calculated to be 121 by Raosoft® software online.

A form with incorporated parameters required for recording gender, age, employment status, self-monitoring, compliance and duration of diabetes was filled up by house physicians and internal medicine residents. Information regarding diabetic control was gathered by HbA1c reports done on ELISA within past three months. Patients already on antidepressant medications were excluded.

Prime MD Patient Health Questionnaire (PHQ-9) was used to assess for depression [7]. The questionnaire was translated to Urdu, the native language. A score of 5 and above labeled them as depressed (No Depression: score less than 4, Mild Depression: score between 5 and 9, Moderate Depression: score between 10 and 14, moderately severe Depression: score between 15 and 19, Severe Depression: score between 20 and 27).

Statistical Analysis was performed on SPSS version 22.0. Percentages were used for data expression. Chi-square testing was done to see a correlation between categorical variables. P-values < 0.05 were meant to show an association.

RESULTS:

64.5% of diabetics were found out to be depressed. Of those who were depressed, 84.4% had a bad diabetic control over the last 3 months, 71.7% had gastrointestinal symptoms, 66% had diabetes for more than 10 years. The cross tabulations for the study population are shown in Table 1-8.

TABLE 1: THE DISTRIBUTION FOR AGE AND GENDER

		GENDER		Total
		Male	Female	
AGE (yrs)	< 40	5 17.9%	20 21.5%	25 20.7%
	41 - 50	10 35.7%	38 40.9%	48 39.7%
	51 - 65	13 46.4%	35 37.6%	48 39.7%
Total		28 100.0%	93 100.0%	121 100.0%

TABLE 2: THE DISTRIBUTION FOR TYPE OF DIABETES AND GENDER

	GENDER		Total
	Male	Female	
Type of diabetes	1	0 .0%	2 1.7%
	2	28 100.0%	91 97.8%
Total		28 100.0%	93 100.0%

TABLE 3: THE DISTRIBUTION OF GENDER AND DURATION OF DIABETES MELLITUS

	GENDER		Total
	MALE	FEMALE	
DURATION (yrs)	Newly diagnosed	6 21.4%	24 25.8%
	1-5	5 17.9%	27 29.0%
	6-10	9 32.1%	26 28.0%
	>10	8 28.6%	16 17.2%
Total		28 100.0%	93 100.0%

TABLE 4: THE DISTRIBUTION OF GENDER AND HEMOGLOBIN A1C

	GENDER		Total
	MALE	FEMALE	
HBA1C	≤ 7	7 25.0%	14 15.1%
	> 7	21 75.0%	79 84.9%
Total		28 100.0%	93 100.0%

TABLE 5: THE DISTRIBUTION FOR GENDER AND INSULIN THERAPY

		GENDER		Total
		Male	Female	
INSULIN	Yes	6 21.4%	22 23.7%	28 23.1%
	No	22 78.6%	71 76.3%	93 76.9%
Total		28 100.0%	93 100.0%	121 100.0%

TABLE 6: THE DISTRIBUTION OF GENDER AND ORAL HYPOGLYCEMIC DRUGS

		GENDER		Total
		Male	Female	
OHGD	Yes	26 92.9%	86 92.5%	112 92.6%
	No	2 7.1%	7 7.5%	9 7.4%
Total		28 100.0%	93 100.0%	121 100.0%

TABLE 7: THE DISTRIBUTION OF GENDER AND PHQ9

		GENDER		Total
		Male	Female	
PHQ9	0-4	12 42.9%	30 32.3%	42 34.7%
	5-9	9 32.1%	29 31.2%	38 31.4%
	10-14	5 17.9%	22 23.7%	27 22.3%
	15-19	2 7.1%	11 11.8%	13 10.7%
	20-27	0 .0%	1 1.1%	1 .8%
Total		28 100.0%	93 100.0%	121 100.0%

TABLE 8: THE FREQUENCY OF DEPRESSION IN PATIENTS WITH DIABETES MELLITUS

Depression	GENDER		Total
	MALE	FEMALE	
No	12	30	42
	42.9%	32.3%	34.7%
Yes	16	63	79
	57.1%	67.7%	65.3%
Total	28	93	121
	100.0%	100.0%	100.0%

DISCUSSION:

The former epidemiological surveys observed that depression was more common in patients with diabetes mellitus regardless of diagnosed or undiagnosed diabetes mellitus while the anxiety was more identified in individual who has diabetes awareness [8]. It can be state that the psychological burden can play major role as far as anxiety / depression and diabetes is concerned [9]. However, in previously undiagnosed diabetic population the depression has a high prevalence due to unhealthy diet, unfavorable physical activity and stressful life routine [10]. A former meta-analysis determined the association between neuropathy in type 2 diabetes mellitus and depression [10]. The level of depression could be augmented by anti-diabetic medications [11]. On the contrary, the insulin therapy in elderly population with type 2 diabetes mellitus resulted in improvement in symptoms of depression and did not affect the quality of life [12]. The diabetes mellitus causes structural alterations in brain: the lacunar infarcts, cerebral atrophy and blood flow alterations of both hyper and hypo- perfusion [13, 14]. The brain volume reduction limited to hippocampus was detected in diabetic population, whereas the inverse association among hippocampal volume and glycemic status was present. Similarly, depression has association with neurodegenerative processes especially at the level of the hippocampus and prefrontal cortex [15]. Petrak et al. advised depression treatment as priority basis because the response to medication usually observed within two to four weeks for antidepressants whereas the glycemic improvement and HbA1C control needs several months to be settled [16]. Moreover, Petrak et al. observed that patients with better mood usually follow diabetic treatment strategies [16] and acts as a model for managing depression and diabetes mellitus, stepped in relation to the degree of depression [16]. The approach would be to detect the main triggers for

diabetes mellitus and depression & address them in public seminars but advance studies should be conducted in preventing and controlling inflammatory responses and stress.

CONCLUSION:

In diabetic population, the depression remains under-diagnosed and a major aspect for diabetologist to create awareness for this common co-morbidity. Thus, the multidisciplinary strategies of the diabetic population could be helpful to improve the disease burden and its outcome and also to decrease the mortality.

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