Original Article

Study of Depression in Diabetic Patients Presenting at Diabetic Clinic

Depression in Diabetic Patients

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ABSTRACT

Objective: To determine the frequency of depression among patients of diabetes mellitus attending diabetes clinic.
Study Design: Descriptive / cross sectional study
Place and Duration of Study: This study was conducted at Department of Medicines, Ch. Rehmat Ali Memorial Teaching Hospital, Lahore and Khairpur Medical College Hospital, Khairpur from 1st April 2016 to 30th September 2016.
Materials and Methods: A total of 196 patients with diabetes mellitus of age 18-65 years of either gender were included. Patients with history of mood disorders, psychotic disorders, anxiety disorders prior to onset of DM, other chronic disease and any drug addiction were excluded. The demographic information like name, age, sex, socioeconomic status and duration of disease was noted in each patient. All patients were assessed by single psychiatrist, using DSM-IV criteria for Depression (Yes/No).
Results: Mean age was 53.35±6.71 years in our study with majority of the patients 97 (49.49%) were between 51 to 65 years of age. Out of the 196 patients, 89 (45.41%) were male and 107 (54.59%) were females. Majority of patients 54.41% belonged to upper socioeconomic status. Depression was found in 47 (23.98%) patients, whereas there were 149 (76.02%) patients having no depression.
Conclusion: This study concluded that prevalence of depression in type 2 diabetic patients was very high. So, proper evaluation of the co-morbid depression in diabetics should be done.

Key Words: Hyperglycemia, Depression, Complications, Socioeconomic status

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INTRODUCTION

The prevalence rate of depression in general population ranges from 6% to 17%.[1-3] In literature results of many studies showed depression as main reason for morbidity and mortality.[4] Patients with diabetes mellitus (DM) have 2 fold increase risk of development of depression.[5] Hyperglycemia and insulin resistance may contribute to depression by two mechanisms: 1) through its effect on symptoms, like difficulty to concentrate, complication fear and fatigue and 2) by reduction in neurotrophic functions, inflammatory process, physiological pathways which may leads to reduction in plasticity of neuronal networks and subsequently depression.[6] Moreover, depression in diabetics may have negative effect on different aspects of diabetic care. As co-existing depression in diabetic individuals is positively associated with decreased adherence to treatment, poor control of metabolism, higher rates of complication, decreased quality of life, increased healthcare use and cost, increased disability and lost productivity, and increased risk of death, therefore, recognition of depression is very important for improvement in diabetic care due to effective treatment is available and cost-effective.[7]

MATERIALS AND METHODS

This descriptive, cross sectional study was conducted at Department of Medicines, Ch. Rehmat Ali Memorial Teaching Hospital, Lahore and Khairpur Medical College Hospital, Khairpur from 1st April 2016 to 30th September 2016. Total 196 patients of diabetes mellitus either male or female having age from 18-65 years were selected. Patients with past history of mood disorders, psychotic disorders, anxiety disorders and personality disorders, pregnant lady (assessed on history and confirmed by urine pregnancy test), Patients with history of co-morbidities like myocardial infarction, congestive heart failure, hypothyroidism, stroke and hypertension, history of drug addiction and history of depression prior to the onset of diabetes mellitus were excluded from the study. Diabetes mellitus was defined as: patient of type two diabetes mellitus on oral hypoglycemic treatment for last 5 years with good control having HbA1c less than 8%. After permission

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from the ethical review committee, total number of 196 patients fulfilling inclusion criteria was enrolled. All patients were assessed by using DSM-IV criteria for Depression. Patient in whom five or more signs and symptoms at least for 2 weeks, as described by DSM-IV, were labelled as having depression.

Data was entered and analyzed with SPSS version 18. Mean and standard deviation was calculated for numerical data like age and duration of diabetes. Frequencies and Percentages were calculated for categorical data like gender and frequency of depression (yes/no). To minimize the effect of confounders, stratification was done for age, gender, family income and duration of diabetes. Chi square test was applied to see the effect of these on primary outcome. P value < 0.05 was taken as significant.

RESULTS

Total 196 patients were selected for this study. Age range in this study was from 18 to 65 years with mean age of 53.35±6.71 years. Depression was found in 47 (23.98%) patients, whereas there were 149 (76.02%) patients having no depression as shown in Table 1. Patients were divided into three age groups i.e. age group 18-35 years, age group 36-50 years and age group 51-65 years. Total 33 (16.84%) patients belonged to age group 18-35 years and depression was noted in 06 (18.18%) patients. Sixty-six (33.67%) patients belonged to age group 36-50 years and 15 (22.73%) patients found with depression and 97 (49.49%) patients belonged to age group 51-65 years and depression was noted in 26 (26.80%) patients. Statistically insignificant association between age of the patients and depression was seen. It was found that there was no statistically significant (P = 0.580) difference of depression between different age groups (Table 2). Out of the 196 patients, 89 (45.41%) were male and 107 (54.59%) were females with male to female ratio of 1:1.2. Depression rate was 21 (23.60%) and 26 (24.30%) in male and female patients respectively. It was found that there was no statistically significant (P = 0.909) difference of depression between the both gender (Table 3). Patients were divided into three monthly group i.e. Rs.<10000, Rs.10000-20000 and Rs. >20000. Depression rate was 11 (25.0%), 16 (25.40%) and 20 (22.47%) in patients with monthly income Rs.<10000, Rs. 10000-20000 and Rs. >20000 respectively. But insignificant (P = 0.902) association of monthly income with depression rate was noted (Table 4). Total 75 (38.27%) patients found with ≤3 years duration of disease and 121 (61.73%) patients found with >3 years duration of disease and depression was noted in 13 (17.33%) and 34 (28.10%) patients respectively in both groups. Insignificant (P = 0.086) association between duration of disease and depression was noted (Table 5).

Table No.1: Frequency of depression

Depression	No.	%age
Yes	47	23.98
No	149	76.02

Table No.2: Association of age with depression

Age (years)	Depression			P value
	Yes	No	Total	
18-35	06 (18.18%)	27 (81.82%)	33 (16.84%)	0.580
36-50	15 (22.73%)	51 (77.27%)	66 (33.67%)	
51-65	26 (26.80%)	71 (73.20%)	97 (49.49%)	
Total	47 (23.98)	149 (76.02)	196 (100%)	

Table No.3: Association of gender with depression

Gender	Depression			P value
	Yes	No	Total	
Male	21 (23.60%)	68 (76.40%)	89 (45.41%)	0.909
Female	26 (24.30%)	81 (75.70%)	107 (54.59%)	
Total	47 (23.98)	149 (76.02)	196 (100%)	

Table No.4: Association of socioeconomic status with depression

Monthly income	Depression			P value
	Yes	No	Total	
<10000	11 (25.0%)	33 (75.0%)	44 (22.45%)	0.902
10000-20000	16 (25.40%)	47 (74.60%)	63 (32.14%)	
>20000	20 (22.47%)	69 (77.53%)	89 (45.41%)	
Total	47 (23.98)	149 (76.02)	196 (100%)	

Table No.5: Association of duration of disease with depression

Duration of disease	Depression			P value
	Yes	No	Total	
≤3 years	13 (17.33%)	62 (82.67%)	75 (38.27%)	0.086
>3 years	34 (28.10%)	87 (71.90%)	121 (61.73%)	
Total	47 (23.98)	149 (76.02)	196 (100%)	

DISCUSSION

For the development of chronic diseases, depression plays a crucial role. Individual with depression feel hopeless that they abandon the survival will. Diabetics with depression are less motivated to follow the healthy lifestyle, including maintenance of physical activities and healthy eating habits.[8] As a result, diabetics with

depression have poor glycemic control than diabetics without depression.[9] We have conducted this study to determine the frequency of depression among patients of diabetes mellitus. Age range in our study was from 18 to 65 years with mean age of 53.35±6.71 years with majority of the patients 49.49% were between 51 to 65 years of age. Balhara et al[10] and Mathew et al[11] in their studies had found mean age of 54 and 54 years respectively which is very much comparable to our study. On the other hand, Das et al[12] and James et al[13] reported much lower mean age i.e. 46 and 45 years respectively in their studies compared to our study. In this study we noted a female predominance (54.59%) as also observed in many previous studies.[10,13]

In literature, rate of depression in diabetics from 12-28%[14] while Mathew et al[11] had found depression in 38.8% diabetic patients. In the present study, depression in 47 (23.98%) patients with type 2 diabetes mellitus. In one study by Blahara *et al*[15] found only 16% of type 2 diabetics with depression. While in another study by Raval et al[16]this prevalence was found to be much higher (41%) as compared with present study. Zahid et al[17] reported the depression was 14.7% in diabetics while a higher (44%) depression rate was reported by Khawja et al.[18] In another study, Das et al[12] reported depression rate as 46.15% of type 2 diabetic diabetics and Khamseh et al[20] reported depression rate as 71.8%. In an international study, depression rate was 24% in diabetics and 17% in non-diabetics.[21] James et al[13] in their study has found prevalence of depression in 30% patients with Type 2 diabetes mellitus compared to only 9.2% of non-diabetic patients. Mohamed et al[22] had found this prevalence as 12.3%.

CONCLUSION

This study concluded that prevalence of depression in type 2 diabetic patients was very high. So, proper evaluation of the co-morbid depression in diabetics should be done, so that proper counselling and psychotherapy of these particular patients could be done in order to improve their quality of life and reduce the morbidity. Findings of the study also revealed that there is no association of depression with age, gender, area of residence and duration of disease.

Conflict of Interest: The study has no conflict of interest to declare by any author.

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