

Original Research Article

Determination of depression level in diabetic patients- A clinical study

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Abstract

Background:The present study was conducted to determine depression level in diabetic patients.**Materials & Methods:**110 diabetic patients of both genders were subjected to The Hamilton's Depression Scoring questionnaire. The questionnaire was given to the patients to assess their level of depression. **Results:** Depression level was normal in 15% in group I and 62% in group II, mild in 29% in group I and 14% in group II, moderate in 35% in group I and 10% in group II and severe 21% in group I and 4% in group II. The difference was significant ($P < 0.05$). **Conclusion:**Diabetic patients had higher depression score as compared to healthy subjects.

Keywords: Healthy, Diabetic, Depression

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Introduction

Diabetes mellitus is a chronic disease which affects virtually every organ in the human system. The World Health Organization projected that 300 million people will suffer from diabetes by 2025. Globally, an estimated 43 million diabetics have symptoms of depression[1]. People with diabetes who have depression often find it more difficult to follow diabetes treatment recommendations and have poor metabolic control. Thus depression can further aggravate the blood sugar levels and hence 'a vicious cycle' occurs. These patients also have higher complication rates, increased health care use and increased disability, lost productivity, lower quality of life and increased risk of death[2]. Depression is a common and very serious medical disease with a lifetime prevalence ranging from approximately 11% in low-income countries to 15% in high-income countries. The risk of having a mental health problem in life is of about 50% and this leads to a drop in employment, productivity and wages. Depression and

anxiety are the 4th cause, while diabetes is the 8th cause of disability adjusted life years (DALYS) in developed countries[3]. In patients with Diabetes and essential hypertension, the prevalence of depression and suicidal tendencies was studied and was found that depression and suicidal tendencies are found prominent in the diabetic patient as well as hypertensive, more being in the uneducated side. Diabetes may be diagnosed and treated, but the depression in these patients goes unnoticed. Most of the time, depression is not considered an important factor, often ignored and left untreated[4]. The present study was conducted to determine depression level in diabetic patients.

Materials & Methods

The present study was conducted on 110 diabetic patients of both genders. All were informed regarding the study and their consent was obtained. Equal number of healthy subjects was also recruited for comparison. Particulars such as name, age, gender etc. was recorded. The Hamilton's Depression Scoring questionnaire was given to each patient. The questionnaire was given to the patients to assess their level of depression. The glycemic control of each patient was measured using HbA1c results. Results thus obtained were subjected to statistical analysis. P value less than 0.05 was considered significant.

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E mail: anurag.kgmu@gmail.com**Results****Table 1: Distribution of patients**

	Total- 110	
Gender	Males	Females
Number	60	50

Table 1 shows that out of 110 patients, males were 60 and females were 50.

Table 2: Assessment of depression among subjects

Depression	Group I (Diabetics)	Group II (Control)	P value
Normal (0-5)	15%	62%	0.01
Mild (6-8)	29%	14%	0.05
Moderate (8-11)	35%	10%	0.02
Severe (>12)	21%	4%	0.01

Table 2, Fig 1 shows that depression level was normal in 15% in group I and 62% in group II, mild in 29% in group I and 14% in group II, moderate in 35% in group I and 10% in group II and severe 21% in group I and 4% in group II. The difference was significant ($P < 0.05$).

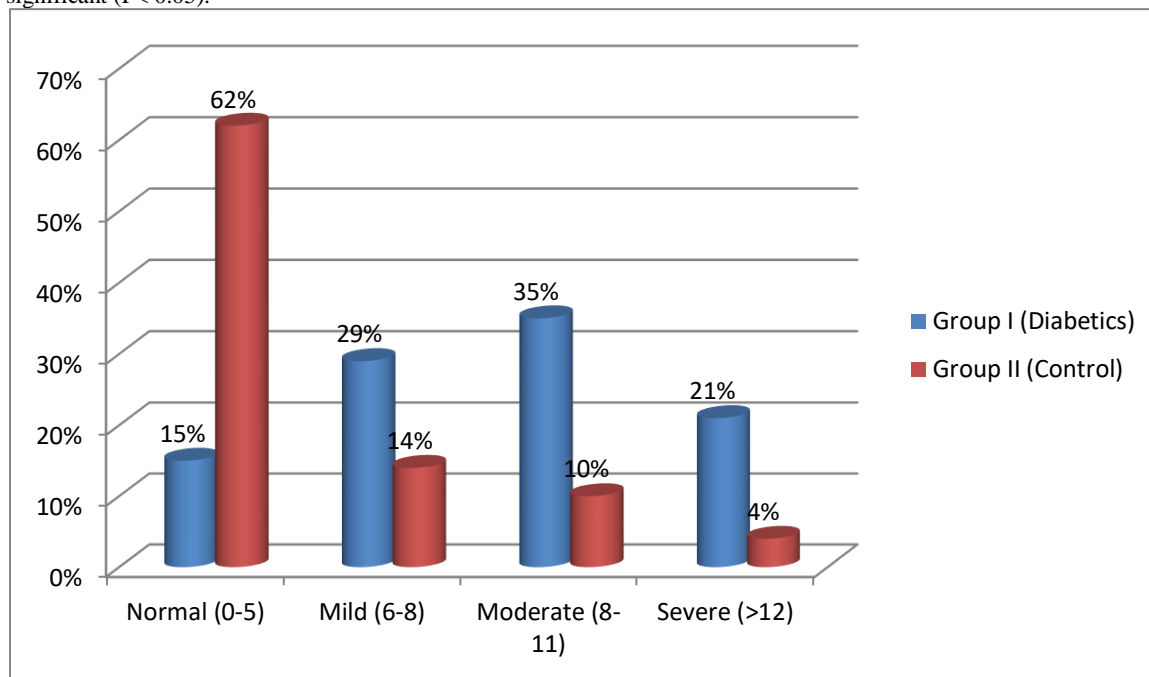


Fig 1: Assessment of depression among subjects

Discussion

There is evidence that the prevalence of depression is moderately increased in prediabetic patients and in undiagnosed diabetic patients, and markedly increased in the previously diagnosed diabetic patients compared to normal glucose metabolism individuals. The prevalence rates of depression could be up to three-times higher in patients with type 1 diabetes and twice as high in people with type 2 diabetes compared with the general population worldwide. Anxiety appears in 40% of the patients with type 1 or 2 diabetes[5]. The presence of depression and anxiety in diabetic patients worsens the prognosis of diabetes, increases the non-compliance to the medical treatment, decreases the quality of life and increases mortality[6]. The present study was conducted to determine depression level in diabetic patients. In present study, out of 110 patients, males were 60 and females were 50. Rajesh Rajput et al[7] showed that depression and anxiety symptoms were two-fold higher in diabetic patients as compared to healthy controls. In a population-based study in Chennai, it was found that the

prevalence of depression was 23.4%. Raval et al[8] found a very high prevalence (41%) of depression in 300 patients with type 2 diabetes in a tertiary care hospital in Northern India. We found that depression level was normal in 15% in group I and 62% in group II, mild in 29% in group I and 14% in group II, moderate in 35% in group I and 10% in group II and severe 21% in group I and 4% in group II. Tolstoy et al[9] in their study 100 patients with type 2 diabetes mellitus above the age of 40 years with HbA1c of $< 8\%$ was taken as the controlled group and with HbA1c of $\geq 8\%$ as the uncontrolled group. 'The Hamilton's Depression Scoring' questionnaire was used to assess their level of depression. Both the groups were correlated statistically. There was a statistically significant association between the depression and the control of the diabetes mellitus in patients aged above 40 years. Khan et al[10] in their study the 9-item Patient Health Questionnaire (PHQ 9) scale was used to assess presence of depressive symptoms among diabetes patients at the clinic. In addition, patient's sociodemographic and clinical characteristics were obtained and analysed for their

association with depression. A total of 353 participants were recruited, of whom 229 (64.9%) patients were female and 156 (44.2%) were aged between 41 and 60 years. The overall prevalence of depression among diabetes patients at the diabetes clinic was 87%. Most (56.7%) had minimal depression, 22.1% had mild depression, and 8.2% had moderate depression. None had severe depression. Factors independently associated with a diagnosis of mild to moderate depression were being on insulin therapy and being a current smoker. There was a high prevalence of depression in this diabetic population. Majority of patients had minimal depression but about 30% had either mild or moderate depression. One important factor is a low socioeconomic status that increases the odds for DM2, but also appears to be a cause for depression. The other common causes for DM2 and depression are poor sleep, lack of physical exercises and diet. Taking into consideration these factors, a key candidate for a common pathway could be the activation and disturbance of the stress system[11]. Chronic stress activates the hypothalamus – pituitary – adrenal axis (HPA-axis) and the sympathetic nervous system (SNS), increasing the production of cortisol in the adrenal cortex and the production of adrenalin and noradrenalin in the adrenal medulla. Chronic hypercortisolemia and prolonged SNS activation promote insulin resistance, visceral obesity and lead to metabolic syndrome and DM2. On the other hand, chronic stress has behavioral consequences: noradrenalin, cortisol and other hormones activate the fear system determining anxiety, anorexia or hyperphagia; the same mediators cause tachyphylaxis of the reward system, which produces depression and cravings for food, other substances or stress[12]. Excess cortisol disturbs neurogenesis in the hippocampus, a region involved in depression as well as in DM2.

Conclusion

Authors found that diabetic patients had higher depression score as compared to healthy subjects.

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