

Original Research

Incidence of anxiety and depression among diabetic patients

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ABSTRACT:

Background: Diabetes mellitus is a group of metabolic diseases. The severity of symptoms is due to the type and duration of diabetes. Comorbidity of diabetes and psychiatric disorders can present in different patterns. Hence; the present study was conducted for assessing the incidence of anxiety and depression among diabetic patients. **Materials & methods:** A total of 50 subjects with presence of type 2 diabetes mellitus from a minimum of 10 years were enrolled. Inclusion criteria included patients of either sex diagnosed with type 2 diabetes mellitus of any duration, established as per American Diabetes Association (ADA) guidelines (random blood sugar >200 mg/dL or fasting blood sugar >126 mg/dL) & willing to participate. Psychiatric analysis was done in all the patients and psychiatric illness was assessed. All the results were recorded in Microsoft excel sheet and was analysed by SPSS software. **Results:** Out of these 50 diabetic patients, psychiatric illness was present in 46 percent of the patients. Among these 23 patients, anxiety was found to be present in 10 patients while depression was present in 13 patients. Elderly age, female gender, longer duration of diabetes, lower socio-economic status and urban residence were the prominent risk factors for psychiatric illness among diabetic patients. **Conclusion:** Interaction of diabetes and psychiatric disorders is multifaceted and an increase in understanding of the same would help endocrinologist and psychiatrists alike to serve this cohort effectively and comprehensively.

Key words: Diabetes, Anxiety, Depression

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INTRODUCTION

Diabetes mellitus is a group of metabolic diseases characterized by chronic hyperglycemia resulting from defects in insulin secretion, insulin action, or both. Metabolic abnormalities in carbohydrates, lipids, and proteins result from the importance of insulin as an anabolic hormone. Low levels of insulin to achieve adequate response and/or insulin resistance of target tissues, mainly skeletal muscles, adipose tissue, and to a lesser extent, liver, at the level of insulin receptors, signal transduction system, and/or effector enzymes or genes are responsible for these metabolic abnormalities.¹⁻³

The severity of symptoms is due to the type and duration of diabetes. Some of the diabetes patients are asymptomatic especially those with type 2 diabetes

during the early years of the disease, others with marked hyperglycemia and especially in children with absolute insulin deficiency may suffer from polyuria, polydipsia, polyphagia, weight loss, and blurred vision. Uncontrolled diabetes may lead to stupor, coma and if not treated death, due to ketoacidosis or rare from nonketotic hyperosmolar syndrome.³⁻⁵

Comorbidity of diabetes and psychiatric disorders can present in different patterns. First, the two can present as independent conditions with no apparent direct connection. In such a scenario both are outcome of independent and parallel pathogenic pathways. Second, the course of diabetes can be complicated by emergence of psychiatric disorders. In such cases diabetes contributes to the pathogenesis of psychiatric disorders. Various biological and psychological

factors mediate the emergence of psychiatric disorders in such context.⁶⁻⁸ Hence; the present study was conducted for assessing the incidence of anxiety and depression among diabetic patients.

MATERIALS & METHODS

The present study was conducted for assessing the incidence of anxiety and depression among diabetic patients. A total of 50 subjects with presence of type 2 diabetes mellitus from a minimum of 10 years were enrolled. Inclusion criteria included patients of either sex diagnosed with type 2 diabetes mellitus of any duration, established as per American Diabetes Association (ADA) guidelines (random blood sugar >200 mg/dL or fasting blood sugar >126 mg/dL) & willing to participate. A case record form of each patient was filled which contained the patients detailed diabetes profile including their age, sex, duration of diabetes, their personal habits smoking, dietary habits, medical history and treatment taken. Psychiatric analysis was done in all the patients and psychiatric illness was assessed. All the results were recorded in Microsoft excel sheet and was analysed by SPSS software.

RESULTS

In the present study, a total of 50 diabetic patients were analysed. Out of these 50 diabetic patients, psychiatric illness was present in 46 percent of the patients. Among these 23 patients, anxiety was found to be present in 10 patients while depression was present in 13 patients. Elderly age, female gender, longer duration of diabetes, lower socio-economic status and urban residence were the prominent risk factors for psychiatric illness among diabetic patients.

Table 1: Psychiatric illness (anxiety and depression) among diabetic patients

Psychiatric illness	Number of patients	Percentage
Anxiety	10	20
Depression	13	26
Absent	27	54
Total	50	100

Table 2: Risk factors of psychiatric illness among diabetic patients

Risk factors	95% CI	p- value
Elderly age	-1.23 to 2.22	0.00 (Significant)
Female gender	-2.67 to 1.49	0.00 (Significant)
Duration of diabetes	-1.82 to 1.94	0.00 (Significant)
Lower socio-economic status	-2.31 to 1.76	0.00 (Significant)
Urban residence	-1.46 to 2.11	0.00 (Significant)

DISCUSSION

Diabetes is a group of metabolic diseases characterized by hyperglycemia resulting from defects

in insulin secretion, insulin action, or both. The chronic hyperglycemia of diabetes is associated with long-term damage, dysfunction, and failure of different organs, especially the eyes, kidneys, nerves, heart, and blood vessels. Several pathogenic processes are involved in the development of diabetes. These range from autoimmune destruction of the β -cells of the pancreas with consequent insulin deficiency to abnormalities that result in resistance to insulin action. The basis of the abnormalities in carbohydrate, fat, and protein metabolism in diabetes is deficient action of insulin on target tissues. Deficient insulin action results from inadequate insulin secretion and/or diminished tissue responses to insulin at one or more points in the complex pathways of hormone action. Impairment of insulin secretion and defects in insulin action frequently coexist in the same patient, and it is often unclear which abnormality, if either alone, is the primary cause of the hyperglycemia. Some of the psychiatric disorders of particular relevance with regard to diabetes include delirium, substance use disorders, depression, anxiety, psychotic illness like schizophrenia, eating disorders.⁶⁻¹⁰ Hence; the present study was conducted for assessing the incidence of anxiety and depression among diabetic patients.

In the present study, a total of 50 diabetic patients were analysed. Out of these 50 diabetic patients, psychiatric illness was present in 46 percent of the patients. Among these 23 patients, anxiety was found to be present in 10 patients while depression was present in 13 patients. One of the most serious mental health comorbidities associated with diabetes is major depressive disorder. Major depressive disorder affects 6.7% of US adults 18 years or older and is more likely to be diagnosed in US adults with diabetes. Overall, rates of depression among individuals with type 1 or type 2 diabetes across the life span are 2 times greater than in the general population. A 2011 meta-analysis reported that rates of depression are higher in youth with type 1 diabetes compared with those without the disease, although the differences are not as large as reported in older studies. Young adults with type 1 diabetes are especially at risk for poor physical and mental health outcomes and premature mortality.¹⁰⁻¹²

Co-occurring psychiatric disorders in patients with diabetes are associated with impaired quality of life, increased cost of care, poor treatment adherence, poor glycemia control (evidenced by elevated HbA1c levels), increased emergency room visits due to diabetic ketoacidosis, higher frequency of hospitalization, and higher rate of absenteeism. Additionally there is an increase in cost of medical care. Cost of care for non-mental health conditions among patients with co-occurring psychiatric disorders and endocrinal disorders is twofold or even higher (depending on the treatment setting) than the population without co-occurring psychiatric disorders.^{13,14}

In the present study, elderly age, female gender, longer duration of diabetes, lower socio-economic status and urban residence were the prominent risk factors for psychiatric illness among diabetic patients. Chaudhry R et al assessed the prevalence of psychiatric morbidity among diabetic patients using standardized rating scales for depression and anxiety. One hundred diagnosed patients of diabetes were assessed on the Hamilton rating scale for depression and the Hamilton rating scale for anxiety, who were attending the diabetic clinic. They were assessed on sociodemographic profile, duration of illness, type of treatment, and oral vs insulin, and then the data were analyzed on different domains. About 84% of the patients had comorbid depression. Females showed a high percentage of depression and anxiety, and the severity level was also higher in the females.¹⁵

CONCLUSION

Interaction of diabetes and psychiatric disorders is multifaceted and an increase in understanding of the same would help endocrinologist and psychiatrists alike to serve this cohort effectively and comprehensively.

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