ORIGINAL ARTICLE

ANXIETY AND DEPRESSION ARE BINARY DISRUPT DIABETIC CONTROL

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ABSTRACT

Background: Besides being an organic disease, Diabetes Mellitus (DM) is a condition with psychiatric and psychosocial dimensions. Disorders of lucose metabolism directly affect the brain and the mental functions. We carried out this study to observe the association between anxiety / depression and HbA1c (glycated hemoglobin) levels.

Methods: A total of 130 patients either with type 1 or type 2 DM referred to our diabetes mellitus clinic were enrolled to the study. 62 of the patients were men and 68 were women. Study population was consisted of subjects with no previous psychiatric disorders history. We sused the hospital anxiety and depression scale in present study.

Results: We found that HbA1c levels were significantly associated with HAD-D and HAD-A subscale scores.

Conclusion: Based on the findings of present study, we conclude that DM is a risk factor for anxiety and depression. Our results were compatible with the literature. Diagnosis and treatment of anxiety and depression may improve life quality and treatment adherence in diabetic subjects.

Keywords: Diabetes Mellitus, Anxiety, Depression, HbA1c

INTRODUCTİON:

Diabetes Mellitus (DM) in the entire world is the most common endocrine diseases.(1) Depending on the length of life of diabetic patients, the incidence of chronic complications increased. (2,3) These complications of diabetic patients is the most important cause of mortality and morbidity. (4,5,6)

DM, besides being an organic disease, is a condition that psychiatric and psychosocial dimensions.(7) Blood sugar disorders and mental function directly affects the brain. However, the blood sugar level, the mental and emotional changes are affected. (7,8) Diabetes mellitus associated psychiatric conditions most commonly anxiety and depression (9,10). Depression in patients with diabetes, it is seen at a higher rate than the general population(11). Each other with symptoms of depression symptoms of diabetes is likely to be upward (7,12).

Monitoring of glycemic status of patients with diabetes are very important. Diabetic patients' glycemic status monitoring of the most widely used tests, blood glucose and glycosylated hemoglobin (HbA1c)(13). Blood glucose measurements, daily glycemic status indicator while the HbA1c past 2-3 months, the mean glucose values reflect and diabetic complications, the risk is an indicator of.(13,14,15)

The main features of depression among depressed and pessimistic mood, pessimistic thinking, hopelessness about the future, not enjoying life, lack of energy, psychomotor retardation, vegetative symptoms such as sleep disturbances, appetite and takes place (16).

Anxiety, internally or from the outside world a possibility of danger or by the person as dangerous perception and interpretation of any situation, there is a feeling that is the case. (17) In this study, diabetes clinic patients admitted to the hospital

anxiety and depression subscales using the HbA1c levels of anxiety and depression to investigate the effect on the levels.

METHODS

We included the patients with type 1 and 2 DM to the study. Inclusion criteria were as follows: At least 1 years of a DM history, the absence of a previous history of psychiatric disorders, eligible to accordance to the study protocol (respond to questions and scale-up training or who can fill that can enter into a dialogue).

Patients were selected with random sampling. Age was ranged between 10-80 years. A 6.5% level of HbA1c was set as the cut off point.

Exclusion criteria were as follows: Previous history of psychiatric disorders or an ongoing treatment for any pscyhiatric conditions, physical illness or cognitive impairment that not allow the participant conform to the study protocol.

The Hospital Anxiety and Depression Scale

To determine anxiety and depression scores, HAD scale which is a questionnaire of 14 items and developed by Zİgmond and Snaith was used (buraya referans)Formun Türkçe geçerlilik ve güvenilirliği Aydemir tarafından yapılmış,ölçeğin bedensel hastalığı olanlarda depresyon ve anksiyete belirtilerini tarama açısından güvenli olduğu belirlenmiştir(18).. Cut-off score for anxiety subscale was 10/11, while the depression subscale was 7/8. The scoring of each item in the scale is different. Items

1, 3, 5, 6, 8, 10, 11 and 13 show a gradually decreasing intensity and scoring 3, 2, 1, 0 format. On the other hand, items 2, 4, 7, 9, 12, and 14 scoring was on 0, 1, 2, 3 format. HAD was prefered in present study because it does not contain provisions relating to somatic symptoms (18,19)

Interview Form and Hospital Anxiety and Depression Scale (HAD) was used for data collection through interviews. Each interview lasted about 15 minutes. Prior to application, the patient was informed about the study and were allowed verbal.

Independent variables were anxiety and depression scores and HbA1c levels. Chi-square or Fisher's exact test were used for comparison of categorical data. Non parametric parameters were compared with Mann-Whitney U test. P value <0.05 was considered as statistically significant.

RESULTS

The HAD scores of the patients in our study were summarized in table 1. Of the patients in our study 45.3% of the HADS-D sub-scale sub-threshold, while 54.7% was above the threshold value. 63.8% of the patients were sub-threshold, while 36.2% were above the threshold value according to HAD-A subscale.

At the point of HbA1c levels, we determined that, as the HBA1c levels increase, the rate of above threshold patients increase in both HAD-D and HAD-A subscales (p<0.05 for both).

Table 1: Comparison of HAD scale points according to HbA1c levels

HbA1c	Depression		Anxiety	
	Sub Threshold	Above Throshold	Sub Threshold	Above Throshold
<6.5%	8 (13.6%)	1 (1.4%)	9 (10.8%)	0 (0%)
>6.5%	51 (86.4%)	70 (98.6%)	74 (89.2%)	47 (100%)
P value	0.011		0.026	

DISCUSSION

Besides being an organic disease, Diabetes Mellitus (DM) is a condition with psychiatric and psychosocial dimensions. (7)

The psychiatric disorders are common in patients with DM (Leedom et al 1991). Compared to general population, depression is 3-4 times more common in patients with DM. (Gavard 1993). Lifetime prevalence of depression in patients with DM was estimated about 14.4- 32.5% (Gavard 1993; Lustman 1986 Lustman 1988 Robinson 1988; Popkin 1988; Marcus 1992) (20).

Anxiety disorders are also common among diabetic population. The rate of anxiety symptoms in diabetic subjects is reported about 40% (8,10). Grigsby et al, detected generalized anxiety disorder in 14% of patients with diabetes.(10).

Hermanns and colleagues also investigated the prevalence of depression in diabetic and nondiabetic patients with left and the prevalence of mood disorders in diabetic patients than in nondiabetic showed a high rate (21). Nichols and Brown, the frequency of depression in patients with diabetes were found in 11.2%.(22) Gülseren depression in

patients with Type I diabetes and colleagues (47.7%) and anxiety (22.7%) ratio of Type II diabetes showed a higher rate. Zenteno and Cardiel in 33% of individuals with Type II diabetes have had depression.

Eren and colleagues, according to DSM-IV diagnostic criteria of 104 diabetic patients and 55 (58.9%) were diagnosed with major depressive disorder.(23) Gülseren and friends during interview in 15% of diabetic patients with major depressive disorder were detected. (24)

Anxiety and depression levels of patients with diabetes have been studied with various of other scales in literature. Goldney et al (2004) studies, reported that the frequency of depression in diabetic patients was 24% (25). Gulseren et al (ref 2002) found increased rates of anxiety (22%) and depression (47.7%) in type 1 diabetic population (24,26). In another report by Bahar et al revealed that the rate of patients' scores above threshold for anxiety and depression scales were 30.8% and 51.1%, respectively(27). They used Hospital anxiety depression (HAD) scale fort his purpose. We also used same scale in present study. Patients were considered as sub-threshold and above threshold according to the HAD scale scores. 54.7% of the patients classified as above threshold with the depression subscale of HAD scale (HAD-D). The rate of above threshold patients with anxiety subscale of HAD scale (HAD-A) was 36.2%.

The rate of depression was reported in a range between 11-58% in literature. (13,15)

At the point of HbA1c levels, we determined that, as the HBA1c levels increase, the rate of above threshold points increase in both HAD-D and HAD-A subscales.

In conclusion, diabetic population are at risk of anxiety and depression. Diagnosis and treatment of anxiety and depression may not only improve quality of life but also blood glucose regulation in diabetic patients.

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