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Features Of the Psych emotional State Of Patients with Morbid Obesity And Type 2 Diabetes Mellitus

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Abstract

Type 2 diabetes mellitus (T2DM), obesity, and psychoemotional disorders are widespread diseases worldwide and have a significant impact on health. There is a relationship between type 2 diabetes mellitus and changes such as depression and cognitive impairments. The aim of this study is to investigate the specific features of psychoemotional changes in patients with type 2 diabetes mellitus and morbid obesity. For this purpose, the Hospital Anxiety and Depression Scale (HADS) questionnaire was administered to 50 patients. The results showed that type 2 diabetes mellitus and morbid obesity play an important role among the conditions that may contribute to the development of psychoemotional changes and depression.

Keywords: type 2 diabetes mellitus, morbid obesity, HADS questionnaire, anxiety, depression

Relevance

Type 2 diabetes mellitus (T2DM) is one of the most common chronic diseases [9], and its global prevalence continues to increase. This condition is often associated with psychological states characterized by depression and anxiety [1]. A high body mass index (BMI) is an important predictor of the chronic course of depressive and anxiety symptoms. Obesity, in direct relation to the degree of metabolic dysfunction, increases the risk of developing depressive and anxiety disorders [10].

The relationship between depression and diabetes is complex and bidirectional, with each condition influencing the onset and progression of the other [4]. Diabetes mellitus significantly increases the risk of developing depressive symptoms; this is due to the complexity of continuous disease

monitoring and self-management, fear of long-term complications, as well as physiological stress factors associated with chronic dysglycemia [4].

On the other hand, depression can disrupt self-care behaviors that are essential for effective diabetes management, including regular medication adherence, maintaining a proper diet, and engaging in adequate physical activity [4].

As of 2020, 55 million people have been diagnosed with dementia, and this number is expected to reach 139 million by 2050. This is likely associated with the steadily increasing prevalence of obesity [2]. T2DM is also characterized by high mortality rates, causing approximately 4.6 million deaths annually [9].

A meta-analysis conducted in the BMJ Global Health journal found a positive association between depression and poor glycemic control among adults with diabetes in low- and middle-income countries [7].

Objective of the study

To investigate the specific characteristics of psycho-emotional changes in patients with type 2 diabetes mellitus and morbid obesity.

Materials and Methods

The study was designed as a prospective investigation. Within the framework of the research, 50 patients from the National Medical Center were examined. The study included patients with type 2 diabetes mellitus and obesity who had been taking SGLT2 and DPP-4 group medications for more than 5 years. Among them, 31 were women with a mean age of 50±0.8 years and a body mass index (BMI) of 38.5±0.7, and 19 were men with a mean age of 49±0.2 years and a BMI of 36.2±0.5. For analysis, the patients were divided into groups: observation group: 28 individuals (T2DM, BMI $\geq$ 35 kg/m^2) and control group: 22 individuals (without T2DM, BMI $\geq$ 35 kg/m^2).

In the observation group: 11 patients were taking SGLT2 inhibitors, 10 were taking DPP-4 inhibitors, and 7 were taking sulfonylurea medications. Patients with T2DM received glucose-lowering therapy according to national clinical protocols. In the control group: 12 patients were taking SGLT2 inhibitors, 6 were taking DPP-4 inhibitors, and 4 were taking sulfonylurea medications.

The psycho-emotional status of patients was assessed using the Hospital Anxiety and Depression Scale (HADS) questionnaire. This questionnaire consists of 14 items, of which 7 are designed to assess depression and 7 to

assess anxiety. Responses are scored from 0 to 3 points. According to the HADS scale: 0–7 points indicate the absence of clinically significant symptoms of depression and anxiety; 8–10 points indicate mild (subclinical) depression and anxiety; 11–12 points indicate moderate levels of depression and anxiety; 13 points and above indicate severe depression and anxiety.

Results

For analysis, the patients were divided into groups: observation group: 28 individuals (T2DM, BMI ≥ 35 kg/m²) and control group: 22 individuals (without T2DM, BMI ≥ 35 kg/m²).

Figure 1. HADS scores in patients with T2DM and obesity.

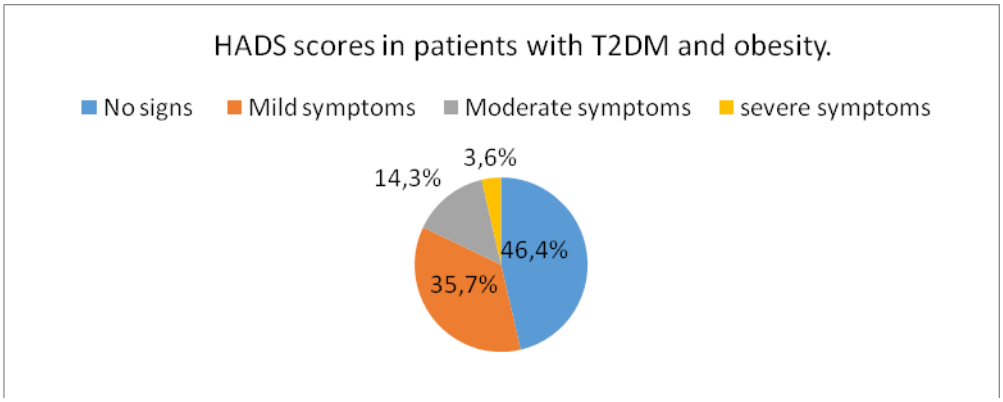

Figure 1 shows that among 28 patients with T2DM and BMI ≥ 35 kg/m², 13 patients (46.4%) had no signs of depression and anxiety according to HADS, 10 patients (35.7%) had mild symptoms, 4 patients (14.3%) had moderate symptoms, and 1 patient (3.6%) had severe symptoms.

Figure 2. HADS scores in patients with obesity without T2DM.

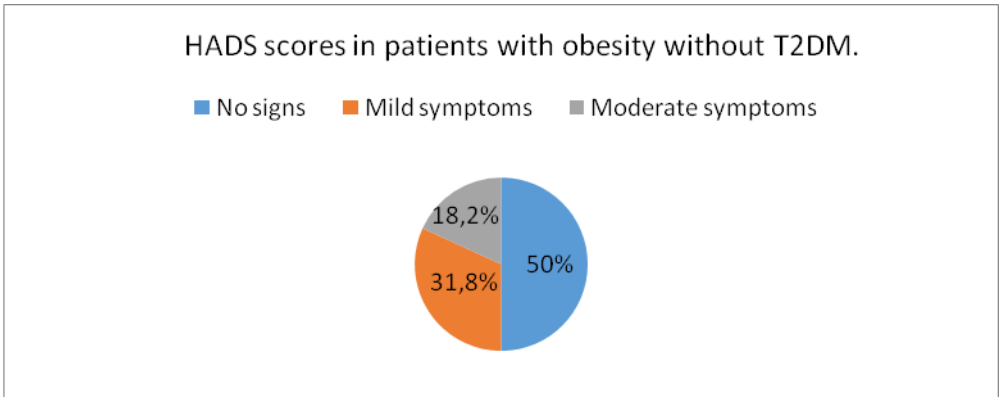

Figure 2 shows that among 22 patients without T2DM and with BMI ≥ 35 kg/m², 11 patients (50%) had no signs of depression and anxiety according to HADS, 7 patients (31.8%) had mild symptoms, and 4 patients (18.2%) had moderate symptoms, while no patients with severe levels were identified.

The analysis demonstrated that in patients with type 2 diabetes mellitus and morbid obesity, the psycho-emotional state, as well as the severity of anxiety and depressive symptoms, varies and depends on the individual characteristics of the patients.

Discussion

The Hospital Anxiety and Depression Scale (HADS) is an effective tool for screening mental health in patients with type 2 diabetes mellitus (T2DM) and morbid obesity, as these groups are at high risk for anxiety and depression. Studies show that more than 50–60% of patients with diabetes accompanied by obesity experience symptoms of anxiety or depression, which significantly negatively affects their quality of life.

T2DM is a severe metabolic disorder that leads to major changes in patients' lives. Similarly, depression is a complex condition that affects all aspects of life — social, psychological, behavioral, and biological.

This observation regarding the recurrence and chronic nature of depression in diabetic patients is consistent with previous studies. According to these findings, the coexistence of diabetes and depression represents a complex and often underrecognized clinical problem. Depressive symptoms affect up to one-third of individuals living with diabetes, not only worsening their quality of life but also making diabetes self-management more difficult [5].

Nefs et al. identified a high prevalence of depressive symptoms among patients with diabetes in primary care settings, where depression is frequently observed as a comorbid condition. During a 2.5-year follow-up, one in four patients developed depression. Among patients with no prior symptoms, new cases of diabetes were identified at a rate of 14%. After the onset of depressive symptoms, in two-thirds of cases they progressed to a persistent or recurrent form [8].

In addition, it has been found that in approximately 70% of patients with comorbid depression and diabetes, depressive symptoms persist for two years or longer [6]. Although many retrospective studies have demonstrated a bidirectional relationship between depression and diabetes, prospective analyses

are needed to better understand how this relationship develops over the natural course of the disease [3].

The identification of diabetic patients at high risk of developing depression is important for implementing preventive measures, applying cognitive behavioral therapy, and promoting lifestyle modifications.

Such preventive strategies can significantly reduce the comorbidity of T2DM and depression, as well as decrease the healthcare costs associated with their treatment [3].

Conclusion

This study demonstrated that nearly half of patients with obesity and diabetes exhibit varying levels of severity in anxiety and depression. The Hospital Anxiety and Depression Scale (HADS) questionnaire is a convenient tool for assessing and early detecting the psycho-emotional state of patients, requiring only 2–5 minutes to complete and can be self-administered by patients.

Such screening allows for the identification of the relationship between metabolic disorders and mental health conditions

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