The Incidence of Stroke with Different BMI Ranges in Diabetic Patients

Research Article

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Abstract

One of the risk factors for stroke in diabetic patients seems to be the presence of high BMIs in these patients, so given the importance of this issue and that little studies have been done so far, this 7 -year study on files has been done. Methods: In this study, which examines 1714 patients with diabetes and a detailed cross -sectional descriptive study. The data then entered the SPSS 17 software and used the descriptive statistics tests of the metaphor, mean, standard deviation and variance and analytical tests Anova, Pearson and a significant level p <0/ 05 were analyzed. Results: This study consisted of 1714 people with diabetes with an average age of 18.62 ± 58.56 years. Of these, 984 (57.4 %) were male and the rest were females. 314 people (18.3 %) had a history of stroke. Of which 26 (8.2 %) have BMI between 25.5, 51 (16.2 %) with BMI more than 25 and less than 30, 71 (22.6 %) with BMI in 30-35, 77 (24.5 %) It had BMI between 35 and 40, and 89 (28.3 %) had a BMI of more than 40. In this study, a statistical relationship was found between BMI levels and a history of stroke (P = 0.008), with patients with higher BMIs more likely to have a stroke. Conclusion: In this study, a statistical relationship was found between BMI levels and a history of stroke (P = 0.008), as patients with higher BMI had a higher incidence of stroke.

Key Words: Stroke, Different BMI ranges, Diabetes, Diabetic Patients, BMI.

Introduction

Diabetes is the most common metabolic disease in the world and the commonality of this group of metabolic diseases is high blood glucose. There are 4 million deaths annually due to this disease in the world and account for 9% of all deaths (1-3). The prevalence of type 2 diabetes has been added to the world, and if there is no proper action to deal with this disease, it is estimated that by 2030 the number of patients will double and nearly 350 million people will have diabetes (2, 4, 4. -6). Studies also show that in 2025, more than 75 percent of the total population of diabetics will be in developing countries. The diabetic population in Iran is also estimated at more than 1.5 million people (7).

Diabetes develops when the body is unable to produce insulin or when the body cannot use the insulin produced effectively. In a division, the disease is divided into three categories. Type 1 diabetes or insulin -dependent diabetes is most commonly seen in children. Type 2 diabetes or non-insulin-dependent diabetes seen in 90 to 95 % of diabetic patients, and the third type diabetes is most commonly found in pregnant women, which becomes the second type of diabetes after pregnancy (10-18).

Diabetes is associated with many complications and is also a major cause of mortality in the industrial world and developing. The prevalence of the disease in Iran, according to statistics released by the Ministry of Health's Department of Health in the population over 30 years, is more than 14 % and more in the women's population (11). Among the measures taken in Iran and the world to control diabetes include information through virtual networks, training camps, tracking and telephone care, Nurses' visits, individual and group training (12).

In the meantime, stroke has a high population in diabetic patients. Stroke is a sudden, local neurological defect caused by ischemic lesions in the brain that lasts

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more than 64 hours and changes the function of the body and physical understanding of the body's condition (13). Third stroke is the medical causes of death in developed countries and one of the most common neurological diseases in adults, after heart disease and cancer, 4 % of people who live after stroke have severe disability (they have severe disabilities stroke))14). The severity and variety of disorders in these patients depends on the location and size of the lesion, but the decrease in muscle strength and the disorder of the ability to move is one of the major clinical manifestations of stroke patients (13).

It can be said that identifying the risk factors of stroke as initial prevention is the best step to prevent it from happening. One of the risk factors for stroke in diabetic patients seems to be the presence of high BMIs in these patients, so given the importance of this issue and so far little studies have been conducted in Khuzestan province, so this 7 -year study Diabetic patients in Behbahan were performed with the aim of determining the incidence of stroke with different BMI areas in diabetic patients.

Materials and Methods

In this study, which examines 1714 diabetes patients and is a pre -sectional descriptive analytical study, the case of this number of patients with diabetes hospitalized in Shahidzadeh Hospital in Behbahan was studied (Code of ethics: I R. S B M U. P H A R M A C Y. R E C .1 3 9 9. 3 0 9). These patients, who were diagnosed with diabetes and history of the disease and referred to Shahidzadeh Hospital in Behbahan, from 2016 to 2022, were studied.

The information required by the study was extracted in the medical evidence of the hospital during the aforementioned years. The entry criterion included all patients with medical diagnosis and history of diabetes and in any age and sexual group, and the exit criterion includes other patients with non-diabetic medical diagnosis as well as incomplete films (n = 46). The required information was collected from the files through the made researcher's checklist.

Information studied in this study includes demographic and clinical information of patients such as gender, age, BMI, BS, economic status, duration of diabetes in patients, oral and non -edible medication for blood sugar control, or not having a diet Nutrition was a history of stroke and cardiac stroke, triglycerides and cholesterol, LDL and HDL, and a history of depression.

The data then entered the SPSS 17 software and used the descriptive statistics tests of the metaphor, mean, standard deviation and variance and analytical tests and analytical tests, Anova, Pearson and a significant level p <0/ 05 were analyzed.

Results

This study consisted of 1714 people with diabetes with an average age of 18.62 ± 58.56 years. Of these, 984 (57.4 %) were male and the rest were females. The average BMI in these people was 32.13 ± 4.13, indicating patients with obesity in class 1. And the

average blood sugar of these patients was 43.11 ± 246.17.

In this study, 216 people (12.6 %) had BMI normal and normal weight. Also 324 people (18.9 %) have more BMIs and less than 30 (meaning overweight), 785 (45.7 %) with BMI in 30-35 (ordinary obesity or grade one obesity marker), 269 people (15.6 %) BMI between 35 and 40 (indicating severe obesity or second grade obesity) and the rest, which were 120 (7.0 %), had a BMI of more than 40 (indicating a very severe obesity or third type of obesity).

Figure 1: Frequency percentage of BMI in its different range in diabetic patients.
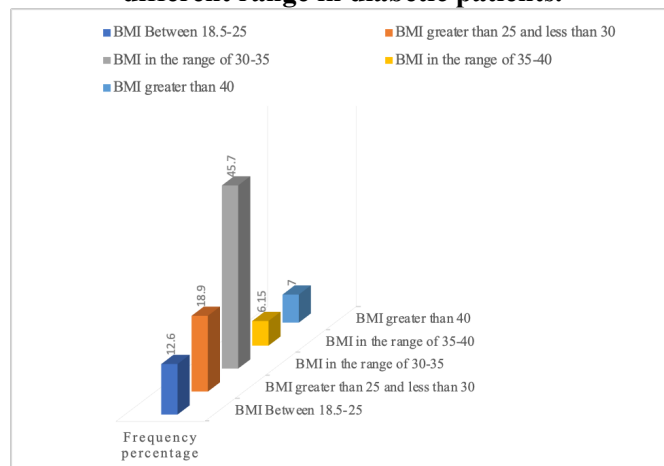
In the present study, 314 people (18.3 %) had a history of stroke. Of which 26 (8.2 %) have BMI between 25.5, 51 (16.2 %) with BMI more than 25 and less than 30, 71 (22.6 %) with BMI in 30-35, 77 (24.5 %) It had BMI between 35 and 40, and 89 (28.3 %) had a BMI of more than 40.

Figure 2: Frequency percentage of stroke history with different ranges of BMI in diabetic patients
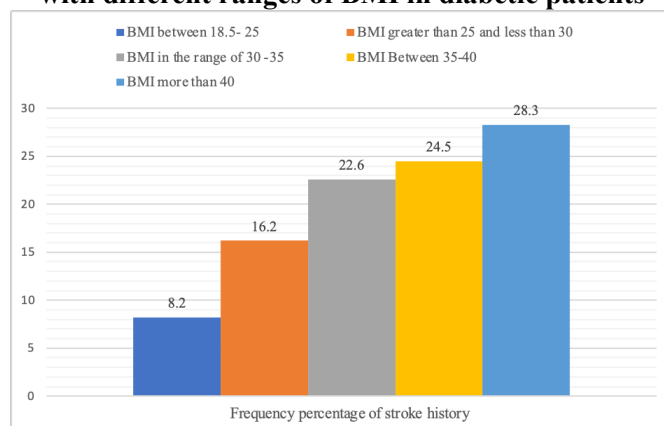
In this study, a statistical relationship was found between the economic situation and the history of stroke (P = 0.009), as people with a better economic situation had a higher stroke history.

In this study, a statistical relationship was found between BMI levels and a history of stroke (P = 0.008), with patients with higher BMIs more likely to have a stroke. There was also significant relationship between triglyceride and cholesterol and stroke and heart stroke

(p <0.05). But the relationship between LDL and HDL with these two types of stroke was not significant (P> 0.05).

In this study, the relationship between blood sugar levels and a history of stroke was significant (P <0.05), that is, people with more blood sugar had a higher stroke history. But the relationship between this amount and the history of myocardial infarction was not significant (P = 0.08).

In this study, of 314 people with a history of stroke, 32 people (10.1 %) of patients also had a history of depression. The BMI relationship with the history of depression was also significant (p <0.05). That is, people with more BMI were more depressed.

The mean duration of diabetes among patients was 16.7 years. And 13.1 of patients had more than 19 years of experience. In relation to the use of blood glucose -reducing drugs, 91.4 patients used oral blood sugar, insulin injection or diet to control their blood sugar.

Discussion

Stroke has a high population in diabetic patients (13). It can be said that identifying the risk factors of stroke as initial prevention is the best step to prevent it from happening. One of the risk factors for stroke in diabetic patients seems to be the presence of high BMIs in these patients, so given the importance of this issue and so far little studies have been conducted in Khuzestan province, so this 6 -year study Diabetic patients in Behbahan were performed with the aim of determining the incidence of stroke with different BMI areas in diabetic patients.

In the present study, 314 people (18.3 %) had a history of stroke. Of which 26 (8.2 %) have BMI between 25.5, 51 (16.2 %) with BMI more than 25 and less than 30, 71 (22.6 %) with BMI in 30-35, 77 (24.5 %) It had BMI between 35 and 40, and 89 (28.3 %) had a BMI of more than 40. There was a significant statistical relationship between the amount of BMI and the history of stroke (P = 0.008), as patients with higher BMI had a higher incidence of stroke. There was also significant relationship between triglyceride and cholesterol and stroke and heart stroke (p <0.05). But the relationship between LDL and HDL with these two types of stroke was not significant (P> 0.05). In a study aimed at determining the relationship of brain strokes and body mass index in patients hospitalized in Sina Hospital in Hamadan, the average BMI was not significant in the Ischemic brain stroke group and also in the hemorrhagic and control group. It was also not meaningful. The ratio of BMI's chances in the ischemic stroke as evaluated with other risk of factories was found to be found in this study as a corruptor. Therefore, this study concluded that there was no significant relationship between obesity or muscle mass index and brain stainlessness (15). That was not in line with the present study. The reason for this lack of alignment may be due to the different sample size, the difference in the cities of the study, and the different styles of life in the studies studied in two studies.

In this study, the relationship between blood sugar levels and a history of stroke was significant (P <0.05), that is, people with more blood sugar had a higher stroke history. But the relationship between this amount and the history of myocardial infarction was not significant (P = 0.08). The results of one study showed that the concentration of fasting glucose and fasting insulin levels and genetic body mass index were not significantly related to any type of ischemic stroke (16). In another study of diabetic patients, a significant decrease in the incidence of strokes under 55 years of age. Most of the brain stroke was an ischemic type compared to hemorrhagic. There was no significant relationship between diabetes time and stroke in patients, and there was no significant relationship between blood glucose levels during the patient's admission to the hospital and the incidence of stroke (17).

In this study, of 314 people with a history of stroke, 32 people (10.1 %) of patients also had a history of depression. The BMI relationship with the history of depression was also significant (p <0.05). That is, people with more BMI were more depressed. The results of a study aimed at determining the relationship between risk factors and depression following stroke, which was 4.47 % of the disadvantages. Abundance of depression in women was significantly more than men. There was no significant relationship between depression and the age and level of education of the patients, but there was a significant relationship between the depression of the patients after cerebral stroke and stroke risk factors such as gender, high blood sugar (diabetes) and high blood pressure. In this study, the results showed that depression after stroke has a high frequency in the society, and depression after stroke is related to risk factors such as gender, diabetes, and hypertension, which are important for diagnosis, treatment, and prevention. The depression of the patients is reduced, especially in the female gender, and it increases the hope for life and will ultimately lead to the improvement of the quality of life of the patients (18).

Conclusion

In this study, a statistical relationship was found between BMI levels and a history of stroke (P = 0.008), with patients with higher BMIs more likely to have a stroke. The relationship between triglycerides and cholesterol and stroke was also significant (p <0.05). But the relationship between LDL and HDL with these two types of stroke was not significant (P> 0.05). Also in this study, the relationship between blood sugar levels and a history of stroke was significant (P <0.05), that is, people with more blood sugar had a higher stroke history. Therefore, given the relationship between BMI and stroke, it is necessary to give diabetic and high BMI patients at risk of stroke, training necessary weight loss and healthy diet with proper diet. Further studies are also needed to investigate the risk of stroke factors.

Conflict of Interest

There are no contradictions in this article.

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