Medbiotech Journal

Research Paper MBTJ, 6(2): 91-93, 2022

The incidence of type 2 diabetes in people between the ages of 35 and 55 case study: Mazar Sharif, Afghanistan

Prof. Dr. Qamaruddin Begzad
Professor of Balkh University Faculty of Medicine
Drqbigzad6@gmail.com
Professor Hamed Parsa
Professor of Balkh University Faculty of Medicine
hparsa2009@gmail.com

Received: 11 March 2022 Accepted: 15 April 2022 Published: 25 July 2022

Abstract:

Hypertension is one of the most significant and frequent issues affecting diabetes patients, which raises the danger of kidney, cardiovascular, and fatal complications. According to statistics, diabetics have a two to three times higher prevalence of hypertension than non-diabetics. There have been identified underlying causes (family history, obesity, lack of physical activity, high-calorie diet, birth weight, history of maternal diabetes during pregnancy), diseases (blood pressure and obesity), and disorders (proteinuria and retinopathy) for the rising prevalence of type 2 diabetes in various societies and the lack of research into the prevalence of this disease in Afghanistan. Using simple random sampling, this cross-sectional study was conducted on more than 120 individuals in Mazar-e-Sharif between the ages of 35 and 55. According to the research, 5 cases of diabetes, 6 cases of Impaired glucose tolerance, and 1 case of impaired fasting glucose (IFG) were diagnosed. Therefore, despite the fact that type 2 diabetes occurs in these age groups, the prevalence of the disease in society is lower than in industrialized nations between the ages of 35 and 55. Teenagers who are fat and have a high risk of developing this kind of diabetes should be taken into account. Public education is advised to improve physical activity and recommend a healthy diet in order to stop the spread of this disease.

Keywords: Mazar-e-Sharif, type 2 diabetes, blood sugar, lack of control

Introduction

Diabetes is a widespread issue that endangers human life. This illness can create irreversible acute and chronic consequences in those who have it and is one of the leading causes of disability and mortality in the majority of the world's nations (Zehani Moghaddam, 2015: 104).

In western nations, diabetes is the most prevalent disease brought on by metabolic problems and the fifth leading cause of mortality (Mursli, 2010: 698). Although antihypertensive medications are readily and successfully available today, the advantages of blood pressure regulation are widely known. Most

of those affected by this disease worldwide continue to have uncontrolled cases (Mirzaei, 2014: 430). A variety of issues brought on by acute hyperglycemia cause many organs to be damaged and dysfunctional. Patients with diabetes typically live 10 years fewer than non-diabetic individuals of the same age and gender. Diabetes causes more than half of non-traumatic amputations, which is at least ten times more likely in diabetics than non-diabetics. Diabetes is one of the leading causes of vision loss and blindness in third-world nations (Delpisheh et al., 2014: 191).

The prevalence of type 2 diabetes is between 85 and 95 percent in developed nations and is significantly greater in developing nations, so prevention and treatment of this kind of diabetes are particularly crucial.

The Askari Sari and Uloom study in Kashan, Iran, also revealed that the high prevalence of diabetes results from inadequate patient education and counseling regarding food, appropriate medication use, and environmental factors (Askari et al., 20).

There aren't many studies on blood pressure estimation in diabetes patients, and these studies also produce numbers that don't match the incidence rate. In a 1998 study in Mexico, hypertension occurred in 156 patients with non-insulin-dependent diabetes 40% of the time after 5 years and 71% after 10 years.

In 1995 a, research on 146 individuals with type 2 diabetes done in Tanzania, the incidence of two blood pressure issues was 15.4%, dropping to 9.8% after five years and 18.4% after seven. In the UK, a sizable prospective diabetes research found that a 1% drop in hemoglobin resulted in a 25% drop in diabetes-related death, a 7% drop in overall mortality, and a 10% drop in both overall mortality and heart attacks.

Given the significance of blood pressure control in diabetic patients, this study examines the level of blood pressure control in patients referred to the Abu Ali Sinai Hospital in Balkh. By evaluating the current situation, this risk factor in diabetic patients may be better controlled.

Method

This cross-sectional study was conducted over the course of three phases. All individuals in the target community range in age from 35 to 55. (boys and girls). 320 individuals chosen as the statistical sample for this study using Morgan's table and Cochran's method are the population. Three steps were carried out. The FBS test was conducted in the first stage, and 120 individuals with FBS > 100 mg/dl joined the planning stage. Of these, 80 individuals (66.6%) were recommended for the second stage, where FBS and 2HPG were tested for all individuals in the form of Two hours after consuming 1.75 grams of glucose per kilogram of body weight, a blood sugar test was conducted. Within this group of 20, three individuals who had IFG (fasting glucose greater than 100 mg/dL and greater than 126 mg/dL) in the first and second stages, eight individuals with IGT (blood sugar two hours after consuming glucose between 140 and 200 mg/dL), and five individuals with diabetes with FPG>126 or 2HFG>200 entered the second stage. One individual with IFG, six people with IGT, and five diabetics were referred at the third stage. Each person's height and weight were measured, and the three-day diet was modified accordingly. A previously trained doctor performed and recorded the clinical examination, which included blood pressure measurement, height, weight, waist and hip circumference measurements, and Tanner maturity stages. A value larger than one was regarded as childhood obesity. The percentage of obesity was determined as the ratio of the patient's weight to the 50% weight at the same age and height. all individuals reached the third step were examined the eye doctor.

To assess cholesterol, triglycerides, creatinine, glucose, HbaLc, insulin, c-PEPTIDE, and glutamic acid decarboxylase (GAD) and ICA islets antibodies, a fasting blood sample was centrifuged and kept in a refrigerator at 70°C.

The Mann-Whitney test was used to compare the case and control groups with regard to the association between HbaLc, carbohydrate consumption, and fat percentage, and the one-sample t-test was employed for other variables. Because there was no normal distribution for

HbaLc, the Spearman's correlation coefficient test was applied.

Findings:

Of all the participants in this study who were isolated from others had an FBS greater than 100. Finally, 12 patients showed a Carbohydrate metabolism disorder. Only two 12 individuals had blood sugar levels greater than 110 mg/dL, and one case had levels exceeding 126 mg/dL according to the preliminary analysis.

Table 1 the demographics.

gender	Number	Percentage
male	80	66.6%
Female	40	33.4%
Total	120	100%
Family history of diabetes	**Number**	**percentage**
yes	95	79%
no	25	21%
Total	120	100%

According to percentage, there are 12, 80, and 40, respectively, men and women in this study. Additionally, out of 120 persons, 95 had a history of diabetes in their families, whereas the remaining (25) did not.

Table 2 the clinical and laboratory results of individuals with glucose metabolism disorders.

Number	Age	Gender	Family history of diabetes	GDM	ICA	Disorder	MBI (kg/m2)	fat pecentage
1	46	Boy	P4	Yes	negative	IFG	19,4	0,83
2	36	Boy	P4	Yes	negative	IGT	22,2	0,31
3	35	Girl	P4	Yes	negative	IGT	20,8	0,87
4	37	Boy	P5	No	negative	IGT	25,8	1,14
5	37	Girl	P5	Yes	negative	DM	31,8	1,13
6	38	Boy	P5	Yes	negative	IGT	33,4	0,98
7	38	Girl	P4	No	negative	IFG	16,9	0.67
8	39	Boy	P4	Yes	Positive	IGT	19,7	0,32
9	47	Boy	P5	Yes	Positive	IGT	37,9	0,76
10	49	Boy	P4	Yes	negative	DM	31,6	1.15
12	52	Boy	P5	Yes	negative	IFG	26,9	1,98
12	51	Girl	P5	Yes	negative	IGT	27,8	0,99

Out of five diabetic individuals, three were aware of their condition and receiving insulin treatment; two of these three also had a history of DKA. In the case group, the family history of diabetes in first or second degree relatives was positive in 11 out of the 12 participants, compared to 8 out of the 20 participants in the control group, where it was more significant.

Two of the case group and one of the control group had histories of complaining about weight loss that needed further investigation. Two members of the case group and one member of the control group both had a history of Nocturia. Two members of the case group and two members of the control group both indicated Polydipsia, but none of the cases

met the criteria for Polyuria according to the 24-hour urine collection.

8 females and 4 males were among the affected individuals. In the case group, the average age was 38 years old, while it was 40 years old in the control group. The results also showed that there was no difference in systolic blood pressure between the two groups, but that the control group's average diastolic blood pressure was greater. Most people were in the final stages of puberty. One member of the control group was in the p3 stage, while three others were in the p4 stage.

Conclusion:

Today, the issue of non-infectious diseases has eclipsed many conventional notions about health and caught the interest of scientific groups. Prior to the development of urbanization, industrialization, and machine life, or another change in the quality and way of life of the population, infectious diseases and the high mortality they caused were the main issues facing society and the population. However, since then, non-communicable diseases have become more prevalent and contagious diseases have gradually given way to non-communicable diseases.

The purpose of the current study was to find out how common type 2 diabetes was among Mazar-e-population Sharif aged 35 to 55. The research revealed that among the age categories, 5.2% was recorded as the highest type 2 diabetes prevalence rate. The average height and BMI of the patients in this study were the same as those of the control group. This is consistent with a study in Mexico that did not find a significant difference between the group with diabetes and IGT compared to the general population. This figure is lower than other reports in terms of average BMI. The existence of type 1 diabetes cases in the current study group may be the cause of this issue. Its discrepancy with related studies may be since the average WHR was the same in the two groups.

Due to the limited sample size, no specific comment can be made regarding birth weight, maturity stage, or the presence of GDM; nevertheless, in other research, the association with low birth weight, the association with U shapes, and the lack of association have all been recorded. Additionally, offspring of moms with type 2 diabetes while pregnant have a higher prevalence of the disease. According to other research, 9 and 10 of the case's first- and second-degree relatives had diabetes, which is consistent with the family history of the disease.

Aside from vitamins A and B6, which were significantly greater in the control group when comparing the nutritional status of the two groups, there were no other instances where there was a difference. Other research have shown that the total amount of energy consumed is unrelated to the type of diabetes, and that using animal sources increases diabetes prevalence while using plant sources decreases it.

In this investigation, there was no difference in HbAlc levels between the case and control groups, which was also true in a related study carried out in Mexico.

References

1. Marathi, Mohammad Reza; Amini, Massoud; Khairabadi, Gholamreza; Fakhari Esfrizi; Fakhari Esfrizi, Narges and Reyhaneh Zanari-Yazdi. (2015). Comparison of night sleep of people with type 2 diabetes, impaired glucose tolerance and fasting glucose with non-diabetic people, Iranian Journal of Endocrine and Metabolism, Shahid Beheshti University of Medical Sciences and Health Services, 13th volume, 2nd issue, pp. 165-172.

2. Mirzaei, Massoud; Akbari, Zahra and Hossein Falahzadeh. (2014). Investigating the relationship between quantity and quality of sleep and diabetes, Faiz bimonthly scientific-research journal, 19th volume, 5th issue, pp. 430-437.

3. Hedayati, Arvin; Pourasmail, Ali; Gholampour, Yusuf and Azizullah Dehghan. (2015). The relationship between sleep disorders and hemoglobin Alc levels in patients with type 2 diabetes mellitus, Journal of Mashhad University of Medical Sciences, No. 3, pp. 179-187.

4. Javadi, Amir; Javadi, Maryam and Farzaneh Saroghdi. (2013). Investigating the knowledge, attitude, and performance of diabetic patients referring to Bou Ali Sinai Diabetes Center in Qazvin regarding diabetes, the scientific journal of Birjand University of Medical Sciences, volume 11, number 3, pp. 51-46.

5. Delpisheh, Ali; Azizi, Hossein; Volunteer Ismaili, Elham; Haghiri, Lotfa Ali; Karimi, Gholam Ali and Fariba Abbasi. (2013). Quality of care and control of blood sugar in type 2 diabetic patients in rural areas covered by a family doctor, Iranian Journal of Diabetes and Metabolism, Volume 14, Number 3, pp. 189-198.

6. Amini, Massoud; Hari, Negar, Farmani, Mahbubeh and Akbar Hassanzadeh. (2012). The incidence of hypertension in type 2 diabetes patients, Iranian Journal of Endocrinology and Metabolism, 4th year, 3rd issue, pp. 173-177.

7. Mohammadi, Mohammad Ali, Sezavar, Seyed Hashim, Dadkhah, Behrooz. Prevalence of HYPERTENSION in people over 20 years of age in Ardabil, a scientific journal

8. Heydari S, Shirazi F, Sanjari M, Selimi S, Baljany E, Tizfahm T. Factors influencing glycemic control in type 2 diabetic patients referred to the Endocrine Institute affiliated to Iran University of Medical Sciences. Iran J Diab Lipid Disord 1389; 9(4): 365-375.

9. Yavarie A, Najafie pour F, Aliasgar zadeh A and et al, The effect of aerobic exercise, resistance and combination on glycemic control and cardiovascular risk factors in diabetic patients, Journal of Tabriz University of Medical Sciences, Autumn 2011, Vol 33, Issue 4, Page 82-91.

10. . Horstmann T, Mayer F, Maschmann J, Niess A, Roecker K, Dickhuth HH. Metabolic reaction after concentric and eccentric endurance exercise of the knee and ankle. Med Sci Sports Exerc 2001; 33: 791-795.

11. Morselli L, Leproult R, Balbo M, Spiegel K. Role of sleep duration in the regulation of glucose metabolism and appetite. Best Practice & Research Clinical Endocrinology & Metabolism.2010; 24: 687-702.

12. Eguchi K, Hoshide S, Ishikawa S, Shimada K, Kario K. Short sleep duration is an independent predictor of stroke events in elderly hypertensive patients. Journal of the American Society of Hypertension.2010; 4(5): 255-62

13. Dzaja A, Arber S, Hislop J, Kerkhofs M, Kopp C, Pollma¨cher T,et al. Women's sleep in health and disease. J Psych Res. 2005; 39:55–76.

14. Ghorbani A, Ghezelbash S, Alizadeh H, Shakouri-Moghaddam R. Sleep duration and its correlation with functional outcomes of sleep and physical activity in Patients with adult-onset diabetes. J Health Care 2012; 14(3): 63-70. [in Persian]

15. Bayat A, Kazemi R, Toghiani A, Mohebi B, Tabatabaee MN, Adibi N. Psychological evaluation in hemodialysis patients. J Pak Med Assoc 2012; 62(3): 1. [in Persian]

16. Vishnu A, Shankar A, Kalidindi S. Examination of the association between insufficient sleep and cardiovascular disease and diabetes by race/ethnicity. Int J Endocrinol 2011; 2011: 789358.

17. Van Cauter E, Spiegel K, Tasali E, Leproult R. Metabolic consequences of sleep and sleep loss. Sleep Med. 2008 Sep;9 Suppl 1:S23-8.

18. Kaplan H, Sodok V. Normal sleep and sleep disorder. Synopsis of psychiatry 9th ed Philadelphia: Lippincott Williams & Wilkins. 2002:p756-81.

19. Beihl DA, Liese AD, Haffner SM. Sleep duration as a risk factor for incident type 2 diabetes in a multiethnic cohort. Ann Epidemiol. 2009 May;19(5):351-7.

20. Kim J, Kim HM, Kim KM, Kim DJ. The association of sleep duration and type 2 diabetes in Korean male adults with abdominal obesity: the Korean National Health and Nutrition Examination Survey 2005. Diabetes Res Clin Pract. 2009 Nov;86(2):e34-6.