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Research Article

**CROSS-SECTIONAL STUDY TO KNOW ASSOCIATION OF  
TYPE II DIABETES MELLITUS (T2DM) WITH FAMILY  
HISTORY AND ITS PREVELANCE AMONG THEM****Dr Hewad Hewadmal<sup>1</sup>, Dr Sultan Ahmad Aatef<sup>2</sup>, Dr Shujat<sup>3</sup>**  
<sup>1,2</sup> Herat University, Afghanistan, <sup>3</sup> Spinghar Momand Hospital, Afghanistan**Article Received:** April 2019**Accepted:** May 2019**Published:** June 2019**Abstract:**

**Objective:** To determine the prevalence of Type 2 diabetes and its association with family history of type 2 diabetes mellitus (T2DM).

**Study Design:** A descriptive cross-sectional study.

**Place and Duration:** The study was conducted in medicine department Herat Regional Hospital, Herat Afghanistan for one year duration from September 2017 to October 2018.

**Methodology:** The total patients included 175 male subjects aged 35 to 60 years. They were divided into 2 groups. Group A (Patients); type 2 diabetic were included in Group B (Controls); Seventy-five non-diabetic included. Type 2 diabetic patients were selected randomly from the Diabetic clinic. Non-diabetic subjects were selected twice according to date and fasting glucose samples. Date received after informed consent. Physical examination was performed and the questionnaire was completed. With SPSS version 17 data was analyzed.

**Results:** 72 patients (72%) of 100 subjects with type II diabetes had family history of T2DM and 28 (28%) patients had refused family history of T2DM. 75 non-diabetic subjects, 20 (26%) family history of diabetes, and 55 (74%) occurred, type 2 diabetes, family history rejected ( $p = 0.007$ ) in the family with T2DM.

**Conclusion:** The family history of T2DM is important risk factor for the emergence of the disease an independently.

**Key Words:** Diabetes mellitus type 2, Family history, frequency.

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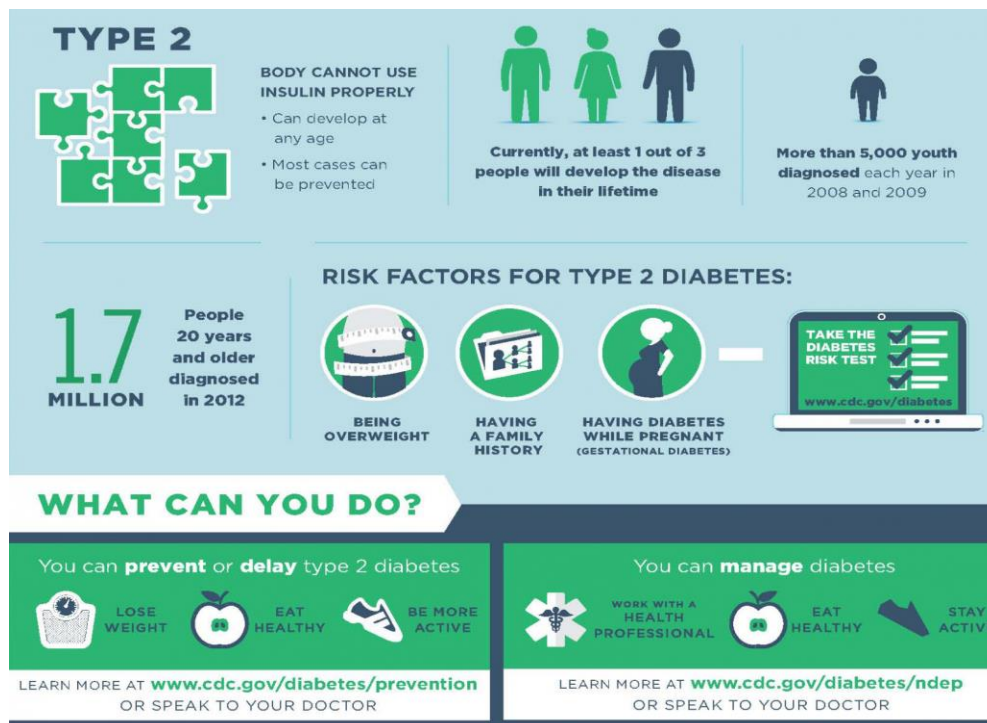
**INTRODUCTION:**

Diabetes mellitus is a metabolic disease identified by insulin deficiency-induced hyperglycemia or insulin resistance of the body's target organs. According to the WHO in 2000, worldwide 171 million people were diabetic and by 2030, the number of diabetic patients is estimated to exceed 366 million. Pakistan will reach 13.9 million cases in 2030 from 5.3 million cases in 2000. The most of the diabetic cases are divided into 2 sub-groups. The diabetes mellitus type 1 (DMT1), results in an severe decrease in insulin secretion. Diabetes mellitus type 2 (T2DM), the other more common category, is the resistance of the body's target organs to insulin action and insufficient and compensatory insulin secretion. Ninety percent of all diabetes cases fall into the second category. It was previously considered an aging disorder, but now the incidence of obesity is increasing in children. The pathogenesis of T2DM involves the interaction of environmental and genetic factors. In DM2 patients, a constant finding was Insulin resistance and before the onset of DM2 resistance persists for several years. In type 2 diabetics, 1st relatives have insulin resistance, meaning a strong genetic component in the development of T2DM, even at a normal glucose tolerance and non-obese time. Other scientific evidence has also shown a independent and gradual benefaction of a positive family history leads to the increased risk of diabetes in the US population. The objective of this analysis was to determine the

frequency and relationship of type 2 diabetes mellitus (T2DM) family in type 2 diabetics.

**MATERIALS AND METHODS:**

This descriptive cross-sectional study was conducted in medicine department Herat Regional Hospital, Herat Afghanistan for one year duration from September 2017 to October 2018. The study population included one hundred seventy-five male subjects aged 35 to 60 years. They were divided into two groups. Group A (Patients); Face type 2 diabetic were included in Group B (Controls); Seventy-five non-diabetic included. Type 2 diabetic patients were randomly chosen from the Diabetes Service Center of the Lahore Institute of Medical Sciences. The non-diabetic subjects were selected according to the glucose sample and date on two occasions (after an overnight fast of 8 hours, the venous sample was starved). The sample was secured and checked by glucose. 11 of the enzyme-oxidase were above 100 mg / dl, subjects were not included in the study<sup>1</sup>). Written informed consent was obtained. Full demographic information and date were taken. Survey completed. Statistical analysis: data were analyzed and entered using SPSS version 18.0. Percentages and frequencies are given for qualitative variables. Chi-square test was applied to determine the relationship of T2DM family history with T2DM frequency. P <0.06 was taken significant statistically.



**RESULTS:**

Of 72 (72%) patients with type 2 diabetes, 72 (72%) had a history of T2DM and 28 (28%) patients rejected the T2DM family history. Of the 72 patients, 49 (68%) had a T2DM history, 19 (26.4%) had a family history

of father and 4 (5.5%) had T2DM. 75 non-diabetic subjects, 20 (26%) family history of diabetes, and 55 (74%) occurred, type 2 diabetes, family history rejected ( $p = 0.007$ ) in the family with T2DM frequency.

### Association of family history of T2DM with frequency of T2DM

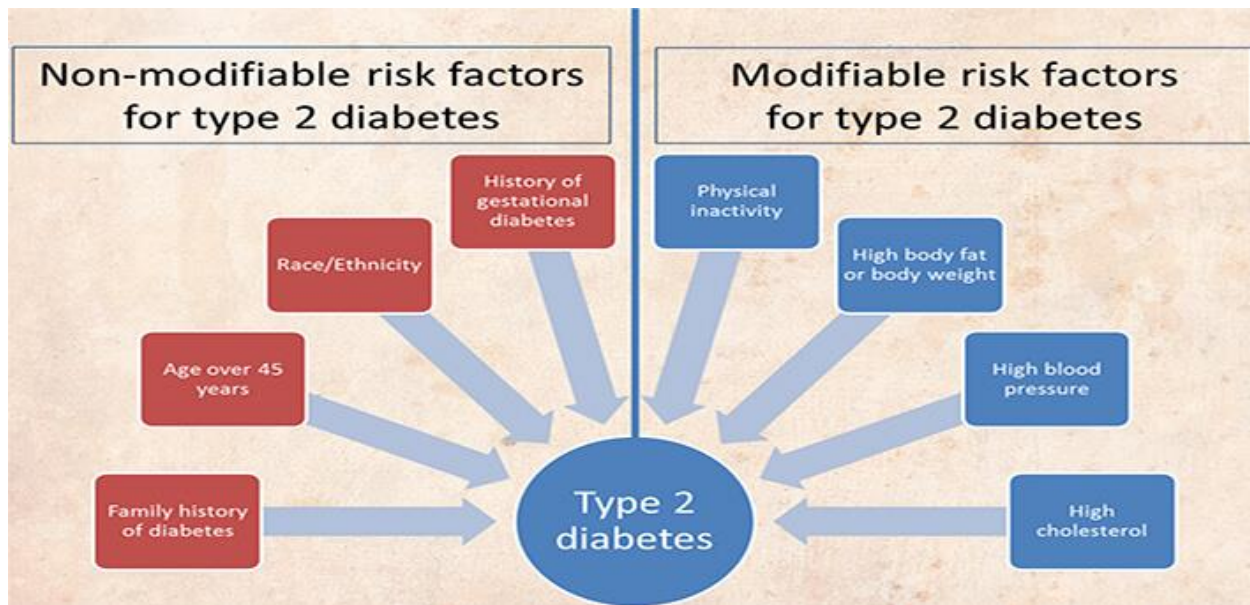
Family H/O T2DM	Diabetics	Non diabetics
Yes	72	20
No	28	55
Total	100	75

$$\chi^2 = 7.28, p = 0.007, d = 1$$

**DISCUSSION:**

This study demonstrated the relationship between T2DM frequency and T2DM family history. The relationship between family history and disease risk

has been documented in some other scientific evidence. Compared to non-diabetics, normoglycemic youth and type 2 diabetics even have insulin resistance in the first-degree thin section.



Valdez, et al. According to the Nutrition Examination Survey report and National Health survey (2007) Family diabetes history has an important, independent and gradual relationship with the incidence of diabetes. According to the family history, the risk of diabetes was increased to three levels high risk: In at least two relatives of first-line or first-degree and second-degree relatives of diabetes with the same lineage. Moderate: only a 2nd-degree relative with a

1st-degree relative and diabetes, or second-degree relatives with the same paternal and maternal diabetes. Mean: No family history, or second-degree relative with diabetes. Although the family history of diabetes in this study could not be compared with the above, the results of this study also reveal the importance of genetic predisposition for the type 2 diabetes mellitus development.

# RISK FACTORS FOR TYPE 2 DIABETES



Have a family history of diabetes



Have a BMI  $\geq 23.0$  kg/m<sup>2</sup>



Lead an inactive lifestyle



Have high blood pressure



Have abnormal blood cholesterol/lipid levels



Have a history of gestational diabetes



Are  $\geq 40$  years old



Have impaired glucose tolerance or impaired fasting glucose

## CONCLUSION:

The family history of T2DM should be used as a predictive tool in T2DM diagnosis and prevention programs.

## REFERENCES:

- Huang, Tianyi, Brian M. Lin, Meir J. Stampfer, Shelley S. Tworoger, Frank B. Hu, and Susan Redline. "A population-based study of the bidirectional association between obstructive sleep apnea and type 2 diabetes in three prospective US Cohorts." *Diabetes care* 41, no. 10 (2018): 2111-2119.
- Nino, Antonio, Inaha Okuda, Timothy H. Wilson, Lynn Yue, Hiromu Nakajima, Maho Tsuboi, Molly C. Carr, and Yutaka Seino. "Weekly glucagon-like peptide-1 receptor agonist albiglutide as monotherapy improves glycemic parameters in Japanese patients with type 2 diabetes mellitus: A randomized, double-blind, placebo-controlled study." *Journal of diabetes investigation* 9, no. 3 (2018): 558-566.
- Hwang, Y.C., Morrow, D.A., Cannon, C.P., Liu, Y., Bergenstal, R., Heller, S., Mehta, C., Cushman, W., Bakris, G.L., Zannad, F. and White, W.B., 2018. High-sensitivity C-reactive protein, low-density lipoprotein cholesterol and cardiovascular outcomes in patients with type 2 diabetes in the EXAMINE (Examination of Cardiovascular Outcomes with Alogliptin versus Standard of Care) trial. *Diabetes, Obesity and Metabolism*, 20(3), pp.654-659.
- Gandhi, H., Sarvaia, A., Malhotra, A., Acharya, H., Shah, K. and Rajavat, J., 2018. Effects of glargine insulin on glycemic control in patients with diabetes mellitus type II undergoing off-pump coronary artery bypass graft. *Annals of cardiac anaesthesia*, 21(2), p.167.
- Wod, Mette, Reimar W. Thomsen, Lars Pedersen, Knud B. Yderstraede, Henning Beck-Nielsen, and Kurt Højlund. "Lower mortality and cardiovascular event rates in patients with Latent Autoimmune Diabetes In Adults (LADA) as compared with type 2 diabetes and insulin deficient diabetes: A cohort study of 4368 patients." *Diabetes research and clinical practice* 139 (2018): 107-113.

6. Lloyd, C.E., Nouwen, A., Sartorius, N., Ahmed, H.U., Alvarez, A., Bahendeka, S., Basangwa, D., Bobrov, A.E., Boden, S., Bulgari, V. and Burti, L., 2018. Prevalence and correlates of depressive disorders in people with Type 2 diabetes: results from the International Prevalence and Treatment of Diabetes and Depression (INTERPRET-DD) study, a collaborative study carried out in 14 countries. *Diabetic Medicine*, 35(6), pp.760-769.
7. Alramadan, Mohammed J., Afsana Afroz, Sultana Monira Hussain, Mohammed Ali Batais, Turkey H. Almigbal, Hassan Ahmad Al-Humrani, Ahmed Albaloshi, Lorena Romero, Dianna J. Magliano, and Baki Billah. "Patient-Related Determinants of Glycaemic Control in People with Type 2 Diabetes in the Gulf Cooperation Council Countries: A Systematic Review." *Journal of diabetes research* 2018 (2018).
8. Ripley, Erika M., Geoffrey D. Clarke, Vala Hamidi, Robert A. Martinez, Floyd D. Settles, Carolina Solis, Shengwen Deng, Muhammad Abdul-Ghani, Devjit Tripathy, and Ralph A. DeFronzo. "Reduced Skeletal Muscle Phosphocreatine Concentration in Type 2 Diabetic Patients: A Quantitative Image-Based Phosphorus-31 MR Spectroscopy Study." *American Journal of Physiology-Endocrinology and Metabolism* (2018).
9. Eshak, Ehab S., Hiroyasu Iso, Koutatsu Maruyama, Isao Muraki, and Akiko Tamakoshi. "Associations between dietary intakes of iron, copper and zinc with risk of type 2 diabetes mellitus: A large population-based prospective cohort study." *Clinical Nutrition* 37, no. 2 (2018): 667-674.
10. Sarma, D., Chauhan, V.S., Saikia, K.K., Sarma, P. and Nath, S., 2018. Prevalence pattern of key polymorphisms in the Vitamin D receptor gene among patients of Type 2 diabetes mellitus in Northeast India. *Indian journal of endocrinology and metabolism*, 22(2), p.229.
11. Iloh, G. U. P., Collins, P. I., & Amadi, A. N. (2018). Family functionality, medication adherence, and blood glucose control among ambulatory type 2 diabetic patients in a primary care clinic in Nigeria. *International Journal of Health & Allied Sciences*, 7(1), 23.
12. Green, J.B., Hernandez, A.F., D'Agostino, R.B., Granger, C.B., Janmohamed, S., Jones, N.P., Leiter, L.A., Noronha, D., Russell, R., Sigmon, K. and Del Prato, S., 2018. Harmony Outcomes: A randomized, double blind, placebo-controlled trial of the effect of albiglutide on major cardiovascular events in patients with type 2 diabetes mellitus—rationale, design, and baseline characteristics. *American Heart Journal*.
13. Astiarraga, Brenno, Valéria B. Chueire, Aglécio L. Souza, Ricardo Pereira-Moreira, Sarah Monte Alegre, Andrea Natali, Andrea Tura, Andrea Mari, Ele Ferrannini, and Elza Muscelli. "Effects of acute NEFA manipulation on incretin-induced insulin secretion in participants with and without type 2 diabetes." *Diabetologia* (2018): 1-9.
14. Triches, Cristina B., Marie Quinto, Saurus Mayer, Marcelo Batista, and Maria Teresa Zanella. "Relation of asymmetrical dimethylarginine levels with renal outcomes in hypertensive patients with and without type 2 diabetes mellitus." *Journal of diabetes and its complications* 32, no. 3 (2018): 316-320.
15. Wong CK, Fung CS, Yu EY, Wan EY, Chan AK, Lam CL. Temporal trends in quality of primary care for patients with type 2 diabetes mellitus: A population-based retrospective cohort study after implementation of a quality improvement initiative. *Diabetes/metabolism research and reviews*. 2018 Feb;34(2):e2952.