Frontiers in Health Informatics
2023; 12: 129
www.ijmi.ir
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An introduction to diabetes

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Article Info

Article type:
Short Communication

Article History:
Received: 2023-02-08
Accepted: 2023-02-08
Published: 2023-02-12

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Keywords:
Diabetes
Blood Sugar
Pancreas

A B S T R A C T

Diabetes is a whole group of diseases in the body regulating blood sugar levels. There is a lack of response to the insulin produced by the pancreas. Until now, there is no definite cause to uncover the disease. If left untreated, other complications may occur so as damage to the organs in the body. The cells are not functioning very well as there is a lack of energy inside the body.

Cite this paper as:
Nur Aifiah Binti Ibrahim. An introduction to diabetes. Front Health Inform. 2023; 12: 129. DOI: 10.30699/fhi.v12i0.405

INTRODUCTION

Diabetes was categorized as one of the non-communicable diseases (NCDs) that cause concern for people by WHO [1]. However, WHO [2] stated that treating diabetes may be a part of the program to tackle the other NCDs at any moment. Diabetes can also be reversible and controllable when lifestyle changes are worthwhile [3]. The rising blood glucose levels may cause damage and deterioration within the internal organs and ailments, such as cardiovascular diseases (CVDs), poor eyesight, renal failure, loss of limbs, and fatality [2, 3]. In Europe, WHO reported that 60 million people were diagnosed with diabetes have challenges in economic and health systems. In the European region, around 10 to 12% of the population in some Member States [2]. Then, Reddy found 95% of total cases of diabetes as being inherited. Besides that, it also discovered monogenic is used to describe a single gene that causes diabetes. According to Reddy, about 1% to 5% of all diabetes cases are monogenic and occur in young people [3].

Diabetes is one of the most prevalent among NCDs. Globally, the prevalence of diabetes ranged from 2.8% in 2000 to 4.4% in 2030 [3]. According to Reddy [3], Wild et al. [4], All Answers Ltd. [5], and International Diabetes Federation (IDF) [6], there was a rapid increase in diabetes from 171 million to 366 million worldwide in 2030.

Based on Gaia Health Malaysia [7], 49% of Malaysians with diabetes had never been examined or diagnosed with chronic disease. In 2018, Gaia Health Malaysia [7] announced that diabetes is among the ten principal causes of death. Then, Gaia Health Malaysia reported from the Ministry of Health (MOH) that the prevalence rate of diabetes in adults has increased in Malaysia from 13.4% in 2015 to 18.3% in 2019. Further, it causes a global concern about diabetes as one of the most prevalent diseases in Malaysia. Henceforth, the prevalence of type 2 diabetes has soared up to 20.8% in adults above 30 years old, infecting 2.8 million individuals [7].

Two main types of diabetes called Type 1 and Type 2

diabetes were mentioned by Prasanna [8]. However, Reddy discovered that the age of diabetes onset determined the types of diabetes. Reddy detected Type 1, Type 2, and Type 3, neonatal and gestational diabetes [3]. Prasanna [8] and Reddy [3] explained that Type 1 diabetes is an inherited disorder. According to Reddy, Type 1 diabetes was relevant for people aged 30 years old or younger [3]. Prasanna [8] found Type 2 diabetes is more related to lifestyle changes, whereas Reddy [3] included some non-modifiable factors as well. Type 3 diabetes is another form of Alzheimer's disease [3, 9, 10].

Besides that, Prasanna [8] and American Diabetes Association [11] had found other types of diabetes, such as prediabetes and gestational diabetes. Then, Reddy [3] added neonatal to the types of diabetes. Prediabetes can be referred to by Prasanna as having a higher borderline blood glucose level as compared to diabetes. Then, in a sand of time, the development of diabetes took place [8]. Neonatal diabetes is another type of diabetes within the first six months of life [3]. Reddy considered the condition for being monogenic. Further, reported that one in 100000 and 500000 live births were diagnosed with neonatal diabetes. Infants have not produced enough insulin and are often confused with Type 1 diabetes [3]. Prasanna described gestational diabetes happened during the pregnancy at the gestational phase. However, he added that gestational diabetes is reversible once the fetus is delivered. Prediabetes and gestational diabetes are reversible. As for Type 1 and Type 2 diabetes, Prasanna referred to them as a more serious health condition [8].

According to Prasanna, prediabetes paved the way for the beginning of Type 2 diabetes. However, Prasanna mentioned the reversibility of prediabetes by having proper nourishment and physical exercise. Gestational diabetes during pregnancy is stabilized and brings a far better condition for the mother once the infant is born [8]. Prasanna added that gestational diabetes develops into Type 2 diabetes as life progresses later on. It is hard to imagine that diabetes can precede a more serious condition. Chronic diabetes occurs due to a scarcity of insulin hormone production or the body's resistance to insulin production [8]. Prasanna also found insulin produced by the beta cells of Islets of Langerhans of the pancreas dedicated to regulating blood glucose levels [8]. Reddy mentioned that monogenic diabetes resulted in the reduced production of the hormone insulin in the beta cells of the pancreas [3].

Reddy explained that diabetes is a collection of metabolic disorders in which the blood glucose levels are higher than before [3]. Then, Reddy [3] and Boles et al. [9] stated that most diabetic cases remained undetectable during the early diagnosis. Reddy also reported that in most cases, diabetic persons had high blood glucose levels due to an increase with age, leading to heart disease, stroke, chronic renal failure, foot ulcers, and eyesight problems. High glucose levels are associated with frequent urination and increased thirst and hunger [3].

Modifiable risk factors are dietary plans and physical activity for diabetes. Hence, Reddy recommended foods with low sugar levels that may prevent and or delay diabetes onset. In addition, Reddy found that normal cholesterol and blood pressure levels may reduce prediabetes symptoms and diabetes onset. Reddy added that physical exercise played a huge role in monitoring body weight and blood sugar levels in reducing prediabetes symptoms [3]. Exercise will improve the skeletal muscles in removing the glucose from the blood [3, 12]. Reddy included gender, age, ethnicity, and genetic mutations as major non-modifiable risk factors for diabetes. People aged 65 years old or older are most likely to develop prediabetes, and most with type 1 and type 2 diabetes are unaware of their pre-diabetic conditions [3].

Reddy [3] and Boles et al. [9] studied that people may also develop a prediabetes condition after reaching 40 years old. In terms of ethnicity, the development of prediabetes condition is rested assured. Thus, the ethnic groups with a higher risk of developing diabetes are Africans, Alaskan Natives, American Indians, Asians, Latinos, and individuals of Pacific Islander descent [3].

CONCLUSION

In conclusion, diabetes can either be reversed or prolonged depending on lifestyle changes. Hence, a proper dietary plan and physical workout are needed to monitor a healthy body and mind. Living a happy life is worthwhile.

AUTHOR'S CONTRIBUTION

The author contributed to the literature review, design, data collection and analysis, drafting the manuscript, read and approved the final manuscript.

CONFLICTS OF INTEREST

The author declares no conflicts of interest regarding the publication of this study.

FINANCIAL DISCLOSURE

No financial interests related to the material of this manuscript have been declared.

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