Prifysgol Cymru
Y Drindod Dewi Sant
University of Wales
Trinity Saint David

BSc (Hons) Health and Social Care Level 5

Module: Introduction to Physiology {BMHP5003}

Poster Presentation: Diabetes

Student Name: **Jainaba Jum**

Student number: 1917571

Lecturer: Eleni Koutsogeorgou

Date: 29/07/2021

Diabetes

1 Definitions

According to WHO, Diabetes is a chronic metabolic illness that is defined by high blood glucose (or blood sugar) levels. Over time, diabetes may cause severe damage to the heart, blood vessels, eyes, kidneys, and nerves. (WHO, 2021) Blood glucose at times denoted as blood sugar is a primary energy source that humans extract from the types of food we consume. For our bodies to access this energy insulin is used as an agent for aiding glucose for entering our bodies. Therefore, the pancreas must be healthy for ensuring that this hormone can be created.
Pancreatic deficiencies will lead to patients acquiring either type 1 or type 2 forms of diabetes (there are other forms).

There are no known, cures but with the right health regime, one can manage diabetes and maintain a healthy life balance. (WHO, 2021)

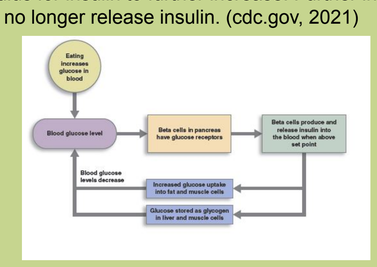
2 Physiology

Not being able to control blood sugar will creates a negative feedback loop that will aid in diabetes being created.

At the end of each meal, glucose is ingested via food digested and results in an immediate increase in blood glucose levels. Thus leading to pancreatic beta cells becoming stimulated and the production of insulin being initiated.

Voluminosity of insulin causes both muscle and liver in culmination with fat tissue cells to begin absorbing glucose from its fat deposits.

This sustained absorption , blood glucose levels decrease until there is a fairly lower stimulus for insulin to further increase. Further indicating that beta cells will no longer release insulin. (cdc.gov, 2021)



3 Physiology II

Extremely high level of blood glucose can lead to a disease known as Diabetes. Therefore, being able to control you ones blood glucose levels is easiest, if we are able to control the types of food we intake. If this can be achieved, a regulated food intake will create a control energy displacement in our cells. All of this can only be achieved, providing that we are able to also regulate the amount of insulin created and transmitted via the body's pancreas.
When there are instances of a glucose building up in ones blood stream, complications are created in the form of associated health problems being created. A primary disease exhibited in these circumstances is diabetes.
The are two fundamental forms of diabetes and they are as follows:
Diabetes type 1, type 2 and gestational diabetes.

Type 1 Diabetics

Humans possessing this form of diabetes suffer from an inability to make insulin. In other words, ones own immune system battles and destroys cells located within the pancreas that are normally used to create insulin. In order to live, anyone who has been diagnosed with this type would need to take insulin a few times per day to live.

Type 2 Diabetics
Considered the most common form of diabetes and can be developed at any age. However it is traditionally diagnosed in mid to older age members of society.
Gestational Diabetes
This form of diabetes is normally diagnosed in a few women when they are pregnant. After pregnancy, this form disappears. Even though, it may disappear, there is a possibility of it re-emerging in later life. (cdc.gov, 2021)

4 Risk Factors

Diabetes Type one is perceived to be as a result of an immune reaction. This said to be as a result of the body literally attacking itself. However , these factors are not as clear cut as those, lets say in the case of pre-diabetes and or type two forms.

Factors to consider are as follows:

Patient familial history: Does patient have a sibling, parent, grandparent or other family family suffering from (or have suffered from) type 1 diabetes?
Age: This form of diabetes can be detected at any age but can be discovered at a young age (child or teen).

According to the case study, patient A's father had a heart attack at the age of 68, and the patient herself suffers from high blood pressure of 180/90, lacks time for regular exercise, and absorbs a lot of junk food fried chips. She is also a smoker and consumes 3-6 pints of beer per day. As a result, all of these risk factors may raise the likelihood of developing diabetes and other health problems. She has a family history of heart disease and high cholesterol and a significant risk of becoming diabetic. (NIDDK.NIH 2021)

5 Recommendations

To ensure that diabetes can be treated in an efficient manner, a patient specific plan must created. Therefore suggesting that this will take the form of an individual approach to each persons diabetic needs.

Eating more vegetables and engaging in regular physical activity may help her reduce her chance of developing diabetes.
In order to treat diabetic patients suffering from the type 2 symptoms then we will need to consider the risk exhibited in each patients ability to benefit from long term interventions, risks from poly pharmacy and each associated comorbidities. Therefore suggesting a limited life expectancy owing to each associated risk.

And as such patients need to be re-assessed periodically to delimit multi-morbidity and to ensure that this form of assessment can aid in the improvement the overall treatment per patient.

Another for of treatment should take the form of structured education with patients and or family members (or carers). This should be undertaken the moment patients are diagnosed and continue periodically. Hence ensuring that patients and respective carers (or family members) are aware of the key role they play in monitoring and maintaining as normal a quality of life as is possibly (especially if complications are developed over time). (NHS,2021)

* References

Centers for Disease Control and Prevention (2019). *Diabetes Risk Factors*. [online] Centers for Disease Control and Prevention. Available at: https://www.cdc.gov/diabetes/basics/risk-factors.html.
Centers for Disease Control and Prevention (2020). *National Diabetes Statistics Report, 2017 Estimates of Diabetes and Its Burden in the United States Background*. [online] . Available at: https://www.cdc.gov/diabetes/pdfs/data/statistics/national-diabetes-statistics-report.pdf.
courses.lumenlearning.com. (n.d.). *Diabetes: Type 1 and Type 2 | Anatomy and Physiology I*. [online] Available at: https://courses.lumenlearning.com/cuny-csi-ap-1/chapter/diabetes-type-1-and-type-2/.
National Institute of Diabetes and Digestive and Kidney Diseases (2018). *What is Diabetes? | NIDDK*. [online] National Institute of Diabetes and Digestive and Kidney Diseases. Available at: https://www.niddk.nih.gov/health-information/diabetes/overview/what-is-diabetes.

WHO, 2021. *www.who.int.* [Online]
Available at: https://www.who.int/health-topics/diabetes#tab=tab_1
[Accessed 28 JULY 2021].