Review Article

Type 1 - Diabetes Mellitus: Etiology and epidemiology

Abstract

According to the first point of view about the physiopathology and management of type 1diabetes, it seems to be easy but as we go deep into its study the less it seems to be known. Koch's postulates are not followed in all the cases of type 1 diabetes mellitus and this is concluded after knowing more about the disease's pathogenesis. The main cause of disease nowadays is the surroundings, environmental factors, genome, metabolism, and immune system that varies in different individuals. But according to ancient researches, it was considered like a localized autoimmune disorder in which beta cells producing insulin are destroyed

During ancient times before giving type 1 diabetes recognition of a complaint, people linked the symptoms of the complaint like inordinate urination, inordinate thirst, and the agreeableness of the urine that attract the ants, and also it was noted on by the croakers and latterly it was nominated Type 1 Diabetes. Since it was a new term for the people of ancient times they assumed type 1 diabetes to be a fatal complaint as they had no idea about the history and cause of the disease and because of this partial knowledge the cases suffering from the complaint failed from acute complications. The involvement of the pancreas in type 1 diabetes was proved in the time 1889. After the time when the pancreas part was proved the scientists plant out that beast insulin can be utilized in the treatment of complaint of the subject and they concluded that diabetes is not fatal it is just a bare issue of life.

Keywords: Insulin, Glycosuria, Hyperglycaemia, Polydypsia

Introduction

The physiopathology and management of type 1 diabetes appear to be simple at first glance, but as we delve deeper into its study, the less it appears to be known. Koch's postulates are not followed in all cases of type 1 diabetes mellitus, and this is concluded after learning more about the disease's pathogenesis. The main cause of disease nowadays is the environment,

environmental factors, genome, metabolism, and immune system, which varies between individuals. However, ancient research considered it to be a localized autoimmune disorder in which beta cells producing insulin are destroyed. [1]

Primary disease prevention is difficult because the patients who are diagnosed with the disease have no connection to the disease and do not have the fatal combination of HLA alleles. The cure for the subject's complaint is still unknown, but the complaint is less common, affecting only 5-10% of the population.

Even with advances in medical technology, the blood sugar levels [glycemic control] of the majority of type 1 diabetes mellitus patients are not improved, and advanced therapies are out of reach for the majority of them due to high costs. given to understand the cause and treatment of the patient's complaint One model that was introduced and is still used today was developed by George Eisenberth in 1984. Not only have new types of insulin been developed, but so have new methods of administering it.

These are just a few examples. These and other inventions helped people to manage their conditions themselves indeed increased mindfulness about the complaint in them.

In the 1980s to check the insulin situations of the cases, they were handed to blood glucose observers in which they determine the demand of insulin and its normal position. In 1986, the insulin pen delivery system appeared. These were the safe and accessible ways of delivering the needed cure for insulin. [1]

The station of academy scholars towards diabetic children needs to change and preceptors can play a pivotal part in bringing about this change. As a part of the mindfulness drive to educate people about the complaint, the mindfulness program was specially designed to keep preceptors in mind as they deal with kids and they must know what to do when a child is suffering from this condition.

We have had cases where classmates ignore diabetic children to an extent where no bone indeed wants to sit with them. This kind of gesture not only depresses the child but also makes them feel else about the condition and preceptors can play an important part in this. [1]

Children with insulin-dependent diabetes need redundant care, especially at the academy. They need to drink water and urinate constantly so preceptors should be made apprehensive of their condition. Preceptors should be trained to handle the situations like the child fainting or suddenly collapsing when blood sugar drops.

According to the first point of view about the physiopathology and management of type 1 diabetes, it seems to be easy but as we go deep into its study the less it seems to be known. Koch's postulates are not followed in all the cases of type 1 diabetes mellitus and this is concluded after knowing more about the disease's pathogenesis. The main cause of disease nowadays is the surroundings, environmental factors, genome, metabolism, and immune system that varies in

different individuals. But according to ancient researches, it was considered like a localized autoimmune disorder in which beta cells producing insulin are destroyed.

Primary prevention of the disease is difficult because the patients that are diagnosed with the complaint do not have any relation with the disease and even they do not have the combination of HLA alleles that is fatal. The cure for type 1 diabetes is still unidentified but the complaint is less common, only 5-10% of people have it. Even after the advancement in medical technology the blood sugar levels [glycaemic control] of most of the patients suffering from the complaint of the disease is not enriched and for most of them, the advanced therapies are not approachable due to its high expenditure, given to understand the cause and cure of the complaint of the subject. One of the models that were introduced is still used nowadays that was developed by George Eisenberth in 1984. Since the time not only have we had new types of insulin but there are also new ways of delivering it. [2]

Etiology

The true etiology of type 1 diabetes is still unidentified but it's believed there is some kind of inheritable predilection with an association with HLA alleles. But the introductory cause of Type 1 diabetes mellitus is autoimmune destruction of beta cells producing insulin leading to insufficiency of insulin in the body. This process can continue for months or times before any symptoms appear.

Since type 1 diabetes involves an inherited vulnerability it's said that the threat of growing type 1 diabetes without any family ancestry is least. The presence of diabetes in a seed is determined by knowing if the parent is diseased or not. If both the parents are diagnosed with type 1 diabetes also the seed becomes further prone to disease. [2]

Other threat factors for the complaint of the subject involves:

It is said that numerous contagions may trigger the development of Type 1 diabetes in individualities by breeding the vulnerable system to turn to resist the body. In this case, the body becomes weak because the vulnerable system of the body harms itself rather than contributing to the prevention of infection and sickness. Some contagions that are said to detector type 1 include are Measles, Coxsackie, Enterovirus.

Some studies have linked that the Chinese people are less prone to type 1 diabetes mellitus while Caucasians living in the US are more susceptible to Type 1 diabetes. [3]

It has been suggested that people who live in northern countries are outdoors more so they're in close propinquity with each other so they are potentially leading to further viral infections. SO people who live in northern climates are at advanced threat for developing complaints. Conversely, people living in a southern zone are less likely to develop complaints.

Other autoimmune disease that increases the threat of type 1 includes Graves' Disease, Multiple Sclerosis, and Nocuous Anemia. Salutary sources can also lead to type 1, One of the illustrations is Children who are given cow's milk at an early stage can suffer from type 1. [3]

The physiopathology and management of type 1 diabetes appear to be simple at first glance, but as we delve deeper into its study, the less we appear to know. Koch's postulates are not followed in all cases of type 1 diabetes mellitus, and this conclusion is reached after learning more about the disease's pathogenesis. The main cause of disease nowadays is the environment, environmental factors, genome, metabolism, and immune system, which differs between individuals. However, according to ancient research, it was thought to be a localized autoimmune disorder in which beta cells producing insulin were destroyed.

Epidemiology

Type 1 diabetes preliminary known as juvenile or insulin-dependent diabetes is more seen in children but it can do in other age groups too. In recent times there is an increase in the number of cases suffering from type 1 diabetes. It has changed from 2% to 5-10% now. Due to the increase in the rise of several patients a survey was done in the United States to check the statistics of prevalence of type 1 diabetes mellitus. In that, it was seen that currently 1.24 million people are diagnosed with type 1 and this ratio may increase up to 5-6 million by 2050. T1DM is one of the most frequent habitual conditions in children but can happen at any stage of life. There has been the slightest increase in the prevalence and frequency of T1DM, constituting roughly 5% to 10% of people with diabetes. In the United States, there are an estimated 1.24 million that are diagnosed with type 1 and this rate may increase up to 5-6 million by 2050. The age group which is more receptive to type 1 diabetes is 4 to 6 times and early puberty. It is seen that geographical location also plays a vital role in determining the susceptibility of the disease. The lowest incidences of type 1 were found in China and Venezuela while higher incidences were seen in Finland and Northern Nations. Type 1 diabetes is more common in non- Hispanic whites in the United States, it affects both genders equally. [4]

Discussion

People linked the symptoms of the complaint like inordinate urination, inordinate thirst, and the agreeableness of the urine that attracts the ants during ancient times before giving type 1 diabetes recognition of a complaint, and it was also voted on by the croakers and later it was nominated Type 1 Diabetes. Because it was a new term for the people of ancient times, they assumed type 1 diabetes was a fatal complaint because they did not know the disease's history or cause, and as a result, cases suffering from the complaint died from acute complications.

Various tests are used for the identification of diabetes mellitus. Usually, blood glucose levels are used to diagnose the disease but with time there is an advancement in medical technology so now various other tests are also done to diagnose the disease. [4]

Blood Sugar Level Tests:

1] Dieting Blood Sugar Test- In this blood sample is collected after 12-14 hours of fasting. The normal blood sugar position is 70-110mg/dl. If the fasting blood sugar position is lower than 100 mg/dl also sugar position is considered normal. If fasting blood sugar position lies in the range of

100-125 mg/dl also the person is in pre-diabetic stage and if the sugar position is 126 mg/dl or advanced person is diagnosed positive for diabetes.

2] Post Prandial Blood Sugar Test- This test is done after 2 hours of mess

3] Random Blood Sugar Test- In this blood sample is collected at any arbitrary time and can be verified by reprise. Irrespective of what you ate last the blood sugar level higher than 200 mg/dl or higher confirms the presence of diabetes particularly when coupled with any of the symptoms of diabetes mellitus. For example – polydipsia, polyuria, etc. [4]

Lately, utilization of the hemoglobin A1c [HbA1c] has been recommended for the opinion of diabetes.

Glycated Hemoglobin [A1c] Test- This blood test identifies the average blood sugar position for the history of 2-3 months. This test should be done according to the criteria given by National Glycohemoglobin Standardization Program. It checks for the chance of blood sugar that is connected to the carrier protein in red blood cells [hemoglobin]. If you have an advanced blood sugar position also furthermore hemoglobin you will have with sugar attached.

Hemoglobin A1c is used as a biomarker for glycemia that checks for the non-enzymatic glycation of hemoglobin. If the Hemoglobin A1c position is 6.5 % or advanced then it indicates diabetes but if the position is below that also the person has a normal blood sugar position. [5]

Advantages of Hemoglobin A1c Test

In this test, the case doesn't have to gormandize making the process much easier for the case and pathology labs. This test has lesser logical stability than blood sugar tests. There is also lower habitual friction during ages of illness and stress.

But the only disadvantage of this test is that its vacuity is limited to particular countries and it is more precious than blood sugar tests. Other than that cases suffering from Anaemia and Hemoglobinopathies cannot suffer this test because of the shorter life of red blood cells in these conditions. So people suffering from any of these problems must go with blood sugar tests as this test is not preferred for them.

The workshop of HbA1c evaluation is largely formalized through the National Glycohemoglobin Standardization Program (NGSP). Point-of-care A1C tests are not sufficiently accurate at this time to use for individual purposes. [6]

Although both glucose and HbA1c criteria are available for the opinion of diabetes, one of these is generally sufficient to make the opinion in the setting of the characteristic clinical picture of polyuria, polydipsia, weight loss, and fatigue. Both an HbA1c test and glucose results harmonious with diabetes may be needed to make the opinion if the clinical picture is not clear.- describes the current individual criteria for diabetes, acclimated from the American disabilities act bracket and opinion rules 3, and from Type 1 Diabetes Treatment and guideline.[7]

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The involvement of the pancreas in type 1 diabetes was proved in the time 1889.After the time when the pancreas part was proved the scientists plant out that beast insulin can be utilized in the treatment of complaint of the subject and they concluded that diabetes is not fatal it is just a bare issue of life.[9-19]

Conclusion

When the proper study about the complaint was done by the scientists when the causes and symptoms of the complaint were studied there was significant progress seen in the etiology of type 1 diabetes. It was seen that the main cause of the complaint of the subject is the inheritable factors, surroundings, and the vulnerable system of a person. But still, the study of the complaint is relatively confusing arising too numerous questions related to the complaint like why are there particular genes that are causing the complaint, what is the phenotypes and the environmental factors leading to the onset of complaint, and the factors leading to the growth and development of the complaint.

Answering these questions is a critical need because people suffering from the complaint have to go through numerous unidentified symptoms, demoralized lifestyle, hypoglycemia, and numerous other complications. Now the main target of the current exploration is to concentrate on the etiology of the complaint to help the croakers to find further treatments of the complaint to help it or target the slow progress of the complaint by new vaccines to help the onset of the complaint. Since it is a long handling race or the battle against the complaint but experimenters had made it easy for us to fight against the complaint to help its onset or its progression.

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