

ANALYSIS BASED ON SYMPTOMS, LONG-TERM COMPLICATIONS AND PREVENTIONS IN DIABETES MELLITUS

S.R.Surya M.Sc.,MCA.,M.Phil.,
Assistant Professor,
Department of Computer Applications
Faculty of Science and Humanities
SRM Institute of Science and Technology
Kattankulathur, Chennai-603 203.

Abstract: Diabetes mellitus (DM) commonly known as diabetes, is a group of metabolic disorders . While the health care providers do not yet know what causes diabetes, some certain factors can increase a person's chance of getting diabetes. The Symptoms of diabetes include frequent urination, increased thirst, and increased hunger. The Serious long-term complications of diabetes include foot ulcers, cardiovascular disease, stroke, and damage to the eyes. In this paper mainly focus to predict diabetes mellitus type, symptoms and complications depends upon their type of mellitus.

Index Term: Diabetes mellitus type, symptoms, long-term complications.

I. INTRODUCTION:

Diabetes mellitus is a disease that prevents our body from properly using the energy from the food we eat. It is a disease of pancreas that the organ produces the hormone insulin [1]. Here they define three classification of diabetes as type 1, type 2 and gestational diabetes. These three diabetes mellitus are mostly in common way. Type 1 diabetes is commonly known as insulin-dependent. Type 2 diabetes is known as non-insulin dependent and gestational diabetes is defined as "any degree of glucose intolerance with onset or first recognition during pregnancy". In generally the symptoms like Disproportionate thirst, intense hunger, unusual weight loss, increased fatigue, Blurred vision...depends upon that some long-term complication can occur during diabetes.

The rest of the paper derived about types, symptoms and some complication upon the diabetes mellitus and finally we discuss the conclusion and future work.

II. CLASSIFICATION OF DIABETES MELLITUS (DM)

Diabetes Mellitus is disease in which the hormone insulin is impaired, the resulting in abnormal metabolism of carbohydrates and finally elevated levels of glucose in the blood. The diabetes mellitus are classified into three levels. That is type 1 diabetes, type 2 diabetes, and gestational diabetes.

2.1 Type 1 Diabetes:

It is also known as insulin-dependent diabetes. This type of diabetes may cause due to genetic predisposition. It result will comes as faulty beta cells in the pancreas that normally produce insulin. In most of the people have type 1 diabetes, they damaged pancreas doesn't make insulin.



Figure 1: Type 1 diabetes -pancreas can't make insulin.

2.1.1 Symptom occurs in Type1 Diabetes:

The symptoms tend to come on suddenly and may include that

- Feeling more thirsty than usual
- Dry mouth
- Weight loss
- Fruity breath
- Blur vision

Depends on these symptoms the Type 1 diabetes can cause more serious complications like:

2.1.2 Complication:

Sugar builds up in our blood and can reach dangerous levels. If sugar level remains high, the type 1 diabetes often leads to

- Bigger appetite
- Chest pain
- Passing out
- Drowsiness
- Weight loss
- Kidney failure

Many people get uncomfortable skin conditions such as Bacterial infections, fungal infections, itching, dry skin. Finally, if blood sugar gets too high/low, the people will go into a diabetic coma, so, we will need to get emergency treatment.

2.1.3 Prevention:

Those people were affected in type 1 diabetes must take insulin for their entire lives.

2.2 Type 2 Diabetes:

It is classified by insulin resistance so, the pancreas isn't under attack. In early stage of type 2 mellitus, abnormality is reducing insulin sensitivity. It primarily due to lifestyle factors and genetic of the people.

2.2.1. Symptom occurs in Type 2 Diabetes:

The Symptoms of type 2 diabetes the people does not notice them. In fact, the 8 million people who have it don't know it. The symptoms may include that

- Peeing a lot
- Blurry vision
- Wound don't heal
- Being very thirsty
- Feeling worn out
- Tingling or numbness in your hands or feet
- Yeast infections that keep coming back.

2.2.2 Long –term complications:

The dangerous complication of high blood sugar can damage and cause problems on

- Heart and blood vessels
- Kidney
- Eye problem
- Nerves, which can be lead to trouble with digestion

2.2.3.Prevention:

The best way to avoid this complication is to manage the diabetes well such as

- Take our diabetes medications or insulin on time
- Check our blood glucose
- Take food at right time, an don't skip meal
- Consult your doctor regularly and to check for early signs of trouble.

2.3.Gestational diabetes :

This is the third form of diabetes. It occurs when pregnant women without a previous history of diabetes develop high blood sugar levels. It diagnosed often in middle or late pregnancy of women.

2.3.1 Symptom occurs in Gestational Diabetes:

Gestational diabetes symptoms can be subtle—or even nonexistent. Here are some possible signs of gestational diabetes that can be

- Blurred vision
- Tingling or numbness in the hands and/or feet
- Excessive thirst
- Frequent urination
- Sores that heal slowly
- Excessive fatigue

2.3.2. Long-term Complications:

The most dangerous complication of this diabetes is high blood pressure. Due to this

- Having a caesarean section.
- Newborn baby having low blood glucose levels (neonatal hypoglycemia).
- Perinatal death – your baby dying at around the time of the birth
- Baby having a higher risk of being overweight.

2.3.3.Prevention:

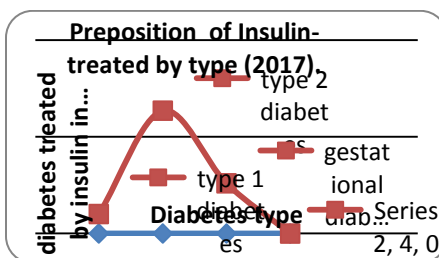
To avoid gestational diabetes completely, a few things can minimize the chances of developing the conditions

- Start before you're expecting. Make a point of eating healthy food and reaching a healthy weight before you even start trying to conceive.
- Go Mediterranean/ Get moving. "As little as 30 minutes of moderately intense exercise a day can improve your health."

Table: Shows in three different types of diabetes mellitus symptoms.

Type 1	Type 2	Gestational
Usually young	Usually older	First detected in pregnancy
Short history- acute-onset	Insidious onset	Routine testing
Not overweight	Often overweight	Often overweight
Insulin deficiency	Insulin resistance	Usually insulin resistance + placental hormones
Rare	Common	Becoming more common
Requires insulin from diagnosis	Diet and lifestyle change can reverse it. Then add oral medications. May require insulin	Diet and lifestyle plus medications to limit effects on the growing baby
Often random	Strong family history	Family history of T2DM

Here, we analyses that three types of diabetes mostly in the form of insulin deficiency/ resistance/ insulin resistance placental hormones.



Graph 1: Shows the preposition of insulin treated by types in the year 2017.

III. Conclusion:

This paper we clearly classifies the types of diabetes mellitus. Each type has different symptoms and long-term complications. To avoid that risk/complication, we analyze the prevention, that is the immediate remedies of diabetes mellitus. The most diabetes based on insulin deficiency. The type 2 diabetes is the higher rate of insulin-treated diabetes. In the future, we analyze the diabetes mellitus symptoms using big data analytics. This will make the result quite good and effective.

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