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Commentary

Note on cause and prevention of diabetes

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DESCRIPTION

Diabetes is caused by either a shortage of insulin synthesis by the pancreas or an inability of the body's cells to respond to insulin. Insulin is a hormone that helps glucose from food enter cells and be used as energy. There have been three forms of diabetes mellitus:

The loss of beta cells in the pancreas causes Type 1 diabetes, preventing the pancreas from making sufficient insulin and this disorder used to be referred to as insulin-dependent diabetes mellitus. The loss of beta cells is caused by an autoimmune reaction and the cause of this autoimmune response is uncertain. Type 1 diabetes usually appears in infancy or adolescence; however it can also appear in adults.

Insulin resistance, or the inability of cells to respond adequately to insulin, is the basic foundation for Type 2 diabetes. As the situation worsens, a shortage of insulin may result. This illness was previously termed as "adult-onset diabetes" or "non-insulin-dependent diabetes mellitus." Although Type 2 diabetes is more common in older persons, an increase in the incidence of obesity among youngsters has resulted in an increase in the number of instances of Type 2 diabetes in children. A combination of excessive body weight and insufficient exercise is the most typical cause.

Gestational diabetes is the third most common kind of diabetes, and it develops when pregnant women who have never had diabetes develop high blood sugar levels. Women with gestational diabetes frequently see their blood sugar levels return to normal shortly after giving delivery.

Diabetes mellitus is diagnosed using a blood test for glucose levels and by displaying any of the following symptoms:

1. 7.0 mmol/L (126 mg/dL) fasting plasma glucose level Blood is drawn after a period of fasting, for as before breakfast in the morning after the patient has had enough time to fast overnight.

2. Two hours following a 75 gramme oral glucose load in a glucose tolerance test, plasma glucose was 11.1 mmol/L (200 mg/dL) (OGTT).

3. Symptoms of high blood sugar and plasma glucose of 11.1 mmol/L (200 mg/dL) while fasting or not fasting Glycated haemoglobin (HbA1C) of 48 mmol/mol (6.5 DCCT percent) Glycated haemoglobin (HbA1C) of 48 mmol/mol (6.5 DCCT%) Glycated haemoglobin (HbA1C) of 48 mmol/mol (6.5 DCCT%).

In the absence of clear elevated blood sugar, a positive result should be validated by repeating any of the following methods on another day. Because of the ease of measurement and the significant time commitment of formal glucose tolerance testing, which takes two hours to complete and has no predictive advantage over the fasting test, it is preferred to assess a fasting glucose level. Two fasting glucose levels above 7.0 mmol/L are considered diagnostic for diabetes mellitus, according to the current definition.

Prevention

Type 2 diabetes, which accounts for 85%–90% of all cases worldwide, can be avoided or delayed by maintaining a healthy body weight, staying active, and consuming a balanced diet. Longer periods of physical activity reduce the risk of diabetes by 28%. Choosing good fats like the unsaturated fats found in nuts, vegetable oils, and fish, as well as maintaining a diet high in whole grains and fibre, are proven to help avoid diabetes. Sugary beverages should be avoided, and eating less red meat and other saturated fat sources can help prevent diabetes. Tobacco use has also been linked to an increased risk of diabetes and its consequences, thus quitting smoking can be a valuable preventive intervention.

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