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Diabetes Case Reports

Commentary

Assessments in Maturity-Onset Diabetes of the Young and Monogenic Diabetes

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DESCRIPTION

Type 1 and Type 2 diabetes are not the same condition, and the unusual form of diabetes known as MODY runs strongly in families. A single gene mutation (or alteration) is what leads to MODY. Any child born to parents who carry this gene mutation has a 50% chance of inheriting it. Regardless of weight, lifestyle, ethnicity, or other factors, if a child does inherit the mutation, they will typically go on to develop MODY before the age of 25.

Type 1 diabetes, an autoimmune condition, and Type 2 diabetes, a polygenic disorder impacted by both heredity and environment, are the two most widely recognized types of diabetes mellitus. It is now recognised that there are more than simply two types of diabetes, however hybrid variants are significantly less common. Maturity-onset diabetes of the young (MODY) is a kind of monogenic diabetes that was initially identified in non-obese children, adolescents, and young adults as a mild and asymptomatic form of the disease. Treatment with sulfonylurea has been shown to lower blood sugar levels. Being overweight is typically linked to Type 2 diabetes. Diabetes symptoms may appear sooner in an obese individual with a MODY gene mutation than in a person of normal weight.

Causes and symptoms of MODY

A mutation, also known as a change in the gene, causes MODY. This is distinct from type 1 and Type 2 diabetes, which are brought on by a combination of many genes and additional factors like obesity. The MODY-related genetic changes prevents the pancreas from producing enough insulin, a hormone that aids in regulating blood sugar levels. Teenagers and young adults under the age of 35 are most commonly affected. However, it can strike at any age. MODY is not associated with obesity or high blood pressure, unlike Type 2 diabetes. Most MODY patients maintain a healthy weight.

MODY patients may account for up to 5% of suspected cases of type 1 and Type 2 diabetes in a large clinic population. Although all types of diabetes therapy have the same objectives, verifying a diagnosis of MODY has two main benefits. It could be feasible to stop using insulin altogether and move from insulin injections to oral medications without losing glycemic control. About 70% of MODY instances are due to the gene HNF1-alpha. It results in diabetes by decreasing the quantity of insulin the pancreas produces. People with HNF1-alpha MODY typically don't need to take insulin, and diabetes typically develops in adolescence or the early 20s.

In HNF4-alpha this type of MODY is less frequent than the others. A birth weight of 9 lbs. or more is likely for those who acquired a variation in this gene (around 4 kg). Additionally, they might have required therapy for low blood sugar at the time of their birth or shortly thereafter.

CONCLUSION

Patients with MODY typically do not require long-term insulin therapy, whereas those with type 1 diabetes require it for survival and metabolic control. Therefore, incorrect treatment may result from misdiagnosis. In patients who are typically nonobese and have a significant family history of diabetes, mild to moderate hyperglycemia that is not ketosis-prone should raise suspicion for MODY. The impact of a general rise in obesity rates, which may muddle the differential diagnosis of Type 2 diabetes and MODY, emphasises the significance of genetic testing. Correct MODY diagnosis is crucial for genetic counseling and for preventing the disease from developing.

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