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Diabetes classification

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ABSTRACT

The therapeutic approach established for diabetes control varies according to its classification. Understanding the differences between each type is possible a complete and distinct treatment for the individual. This chapter will address the classification of diabetes types as well as their main differences.

Keywords: LADA, MODY, Other types of diabetes

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Introduction

Diabetes mellitus includes a group of metabolic diseases characterized by hyperglycemia, resulting from defects in insulin secretion or its action. Hyperglycemia is manifested by symptoms such as polyuria, polydipsia, weight loss, polyphagia and blurred vision¹, chronic complications that include nephropathy, retinopathy, neuropathy, amputations, Charcot arthropathy and manifestations of autonomic dysfunction, in addition to sexual dysfunction² or acute complications such as diabetic ketoacidosis and non-ketotic hyperglycemic hyperosmolar syndrome^{3,4}.

The National Diabetes Data Group (NDDG) defines DM as primary or secondary and according to Pereira et al.⁵ (2005) this nomenclature was adopted in 1999 by the World

Health Organization (WHO). In April 1997, the American Diabetes Association (ADA) proposed new criteria for the classification of DM (Table I), based on the etiology of the disease and not on its treatment. Among the types of diabetes, type I, type II and gestational diabetes stand out, in addition to other types of diabetes^{6,7}.

Type 1 Diabetes Mellitus

Type I DM is referred to as juvenile diabetes because there is a high incidence of diagnoses in children between 10 and 14 years of age, but at any age it can be developed⁹. Generally, its manifestation is attributed to insulin deficiency due to the destruction of β -pancreatic cells, the patient may become autoimmune, being called Type IA DM and in case of destruction of these cells, type IB^{10,11}.

Table I - Classification and characteristics of diabetes types.

1) Type I diabetes	β	<ul style="list-style-type: none"> DM immuno mediata DM idiopatic
<ul style="list-style-type: none"> • cell destruction 		
2) Type II diabetes-		
<ul style="list-style-type: none"> • progressive defect in insulin secretion associated with underlying insulin resistance 		
3) Other types of diabetes - genetic defects of β -cell function		
- genetic defects of insulin action		
- diseases of the exocrine pancreas		
- endocrinopias		
-drug-induced or chemical-induced		
- infections		
- unusual forms of diabetes		
- immuno - related		
- other genetic syndromes associated with Diabetes		
4) Gestational diabetes		

Adapted from^{6,7,8}

Type 2 Diabetes Mellitus

Type II is characterized by being a heterogeneous inheritance, more common than type I, estimated in 90% of cases and is the result of insulin secretion and action disorders. Most of those affected have obesity and autoimmune destruction is not involved. Age of onset is variable, although they are more frequent after 40 years of age^{12,13}.

Diabetes pré-gestacional e gestacional

Pre-gestational diabetes, influenced by the nutritive state of the pregnant woman¹⁴, determines an increased risk of maternal adverse outcomes, worsening of chronic complications of diabetes, and fetal complications such as abortion, intrauterine death, congenital malformations, prematurity, neonatal respiratory dysfunction and macrosomia, in addition to other injuries¹⁵.

Gestational diabetes is diagnosed in the first trimester of pregnancy, perhaps due to insulin

resistance or decreased β -cellfunction; as well as high incidence in various populations and ethnic groups¹⁶.

There are some differences between gestational diabetes and previous diabetes, in this case the patient already had DM and became pregnant, and may have previously had primary or secondary diabetes. Diabetic patients who wish to become pregnant should schedule pregnancy preferably for adulthood, between 25 and 35 years and start treatment at least six months before, adopting an appropriate surveillance and therapeutic regimen in order to improve metabolic control^{17,18}.

The surveillance and treatment of patients with pre-gestational diabetes and MGD are similar, but in the latter case it is less intensive. Treatment can be performed with insulin or only diet and physical exercise, and should have greater vigilance. Hospitalization and schedule of delivery should be performed up to the 40th week of gestation¹⁹.

Other types of diabetes

There are other types of diabetes, in which defects or causative processes can be identified²⁰ (MAINA, 2018). Included in this group are genetic defects in β -cell function β and insulin action, exocrine pancreas diseases, other conditions that may induce diabetes such as endocrinopathy (acromegaly and Cushing's syndrome), infections (congenital rubella and cytomegalovirus) and/or induction of medications or chemical agents (glycocorticoids and nicotinic acid)²¹.

LADA Diabetes

Latent autoimmune diabetes in adults (LADA) is a mild classification of autoimmune diabetes, type 1, being diagnosed between 2 and 12% of adults with positive diagnosis for type 2 diabetes²². is the second most common form of diabetes, but data related to its clinical course and prognosis are few²³. this form of diabetes exhibits phenotypic characteristics that differentiate it from other forms of diabetes,

being misdiagnosed when only compared with its phenotypic characteristics in the clinic^{24,25}.

MODY Diabetes

Diabetes of the MODY type or of the onset of maturity of the young, is a varied group of disorders of autosomal dominant genetic transmission²⁶. This classification of diabetes usually does not require treatment, but its clinical and spectrum characteristics overlap those of type 1 and 2 diabetes and its diagnosis is a challenge²⁷, and can be misdiagnosed as type 1 diabetes in children²⁸.

Diabetes induzida por esteróides

The global diabetes community classifies that steroid-induced diabetes is a pathological condition due to prolonged corticosteroid use, where these medications increase insulin resistance and allow glycemic levels to remain high²⁹.

Conclusion

The emergence regarding the types of diabetes and its classification criteria comprises resources that enable dynamic and up-to-date therapeutic approaches to this global public health problem of multivariate causes and their prevention and/or treatment measures.

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