ISSN 2181-3187

RISK FACTORS FOR DEVELOPING TYPE 2 DIABETES MELLITUS

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Abstract: Diabetes mellitus (DM) is a group of metabolic diseases characterized by chronic hyperglycemia, which results from impaired insulin secretion, insulin action, or both. Chronic hyperglycemia in diabetes is accompanied by damage, dysfunction and failure of various organs, especially the eyes, kidneys, nerves, heart and blood vessels.

Diabetes mellitus type 2 (DM 2) is a disorder of carbohydrate metabolism caused by predominant insulin resistance and relative insulin deficiency or a predominant disorder of insulin secretion with or without insulin resistance.

Key words: type 2 diabetes mellitus, risk factors, clinical recommendations.

Type 2 diabetes is a disease with a complex multifactorial pathogenesis. The main pathogenetic mechanisms are considered to be impaired insulin secretion and insulin resistance, however, the number of new defects causing chronic hyperglycemia in type 2 diabetes is constantly increasing:

- Impaired insulin secretion;
- Insulin resistance (insulin resistance of muscles, liver, adipose tissue is of greatest importance);
- Reduced incretin effect (incretins are gastrointestinal hormones produced in response to food intake and causing stimulation of insulin secretion; glucagon-like peptide-1 (GLP-1) and glucose-dependent insulinotropic polypeptide are of greatest importance);
- Impaired secretion of glucagon, a hormone synthesized in the α-cells of the pancreas and whose effects oppose the action of insulin;
- Increased reabsorption of glucose in the kidneys (due to increased activity of sodium-glucose cotransporter type 2 (SGLT-2), localized mainly in the proximal renal tubules).

In recent years, the role of immune dysregulation/chronic inflammation, changes in the intestinal microbiota and other factors in the pathogenesis has also been discussed.

Risk factors for developing type 2 diabetes:

- Age ≥45 years;

ISSN 2181-3187

- Overweight and obesity (BMI ≥25 kg/m2 for Caucasians (23 kg/m2 for Asians));
- Family history of diabetes (parents or siblings with type 2 diabetes);
- Habitually low physical activity;
- A history of impaired fasting glucose or impaired glucose tolerance;
- Gestational diabetes or a history of the birth of a large fetus;
- Arterial hypertension (≥140/90 mm Hg or drug antihypertensive therapy);
- HDL cholesterol ≤0.9 mmol/L and/or triglyceride level ≥2.82 mmol/L;
- Polycystic ovary syndrome;
- Presence of cardiovascular diseases (CVD).

Abdominal obesity is a major risk factor for type 2 diabetes and is largely responsible for the observed insulin resistance. However, the clinical manifestation of type 2 diabetes occurs when β-cell dysfunction is added to existing insulin resistance. There are no β-cell autoantibodies in type 2 diabetes. Insulin resistance in type 2 diabetes manifests itself in relation to both endogenous and exogenous insulin. Endogenous insulin is usually produced in normal or increased quantities. This is usually enough to prevent diabetic ketoacidosis, and patients with type 2 diabetes are not susceptible to it, except in cases of acute conditions accompanied by an increased need for insulin (acute inflammatory conditions, surgery, acute myocardial infarction (MI), stroke, etc.). Patients with type 2 diabetes typically respond well to oral glucose-lowering drugs.

As a rule, patients with type 2 diabetes, along with overweight (or obesity), have various manifestations of the so-called metabolic syndrome: hypertension, atherogenic dyslipidemia, hyperuricemia, microalbuminuria, blood clotting disorders.

In 20–30% of patients, the first manifestation of type 2 diabetes may be myocardial infarction, stroke, vision loss and other complications.

An unfavorable prognosis in patients with type 2 diabetes is determined by the development of macro- and microvascular complications.

Conclusion: To diagnose patients with type 2 diabetes, it is first necessary to determine the patient's risk factors. The patient should be asked about his entire life history and the above-mentioned risk factors. After identifying risk factors, the patient should undergo clinical and laboratory tests and make a diagnosis of the patient. After a diagnosis of type 2 diabetes mellitus is made, the patient should be prescribed treatment measures taking into ac count risk factors.

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