

METABOLITE SYNDROME AND COGNITIVE IMPAIRMENT

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Umarova Malika Pulatjonovna

*Fergana Public Health Medical Institute
Department of "Neurology and Psychiatry".
(Fergana, Uzbekistan)*

Abstract: *The problem of improper metabolism in childhood is especially relevant. Scientists associate metabolic syndrome in obese children with early initiation of complementary feeding and refusal to breastfeed. Formulas contain too much protein, which causes weight gain in babies. In addition, artificial feeding slightly increases the level of insulin, which provokes fat accumulation.*

Key words: *Carbohydrate, syndrome, nutrition, insulin, pathological, nervousness, diet*

Metabolic syndrome is a complex of metabolic diseases based on insulin resistance - a decrease in the sensitivity of insulin-dependent cells to the effects of insulin. This disrupts glucose metabolism and its entry into cells. This threatens the development of type 2 diabetes.

Doctors say that previously metabolic syndrome was detected mainly in patients over sixty years old. In the last twenty years, the pathology is often detected in young people. In some countries, the number of adults suffering from its manifestation is about 25%.

Symptoms of metabolic syndrome

- visceral type of obesity, where there is excess fat accumulation near the internal organs;
- decreased sensitivity of peripheral tissues to insulin;
- hyperinsulinemia is a condition in which insulin levels are higher than blood glucose levels.

As a result of metabolic syndrome, carbohydrate, purine and lipid metabolism is disturbed, arterial hypertension appears.

With the development of metabolic syndrome, a person may experience the following:

- excessive fatigue;
- regular mood swings;
- nervousness;
- apathy and fatigue;
- the desire to eat fast carbohydrates, for example, sweets.

Later, other manifestations of the disease appear: chest pain, shortness of breath, increased pulse. Due to obesity and a sharp increase in insulin, the digestive system is disrupted, resulting in constipation. Under the influence of the metabolic syndrome on the nervous system, tremors of the limbs appear.

As visceral fat accumulates in the abdomen and waist, it begins to accumulate near the internal organs. There is a sharp increase in weight, as a result of which stretch marks appear on the skin.

Due to arterial hypertension, a person experiences headache, nausea, vomiting and dizziness. Increased sweating also occurs due to impaired functioning of the vegetative system.

Half of patients with metabolic syndrome and obesity experience obstructive sleep apnea - short-term pauses in breathing. It inhibits the release of growth hormone, which contributes to insulin resistance.

In women, metabolic syndrome can accompany PCOS and subsequently lead to infertility.

The problem of improper metabolism in childhood is especially relevant. Scientists associate metabolic syndrome in obese children with early initiation of complementary feeding and refusal to breastfeed. Formulas contain too much protein, which causes weight gain in babies. In addition, artificial feeding slightly increases the level of insulin, which provokes fat accumulation.

Causes of metabolic syndrome

According to modern studies, the pathogenesis of metabolic syndrome consists of primary insulin resistance and concomitant hyperinsulinemia.

The main cause of pathology is genetic predisposition. However, there are the following factors that encourage its development:

1. Malnutrition. Excessive consumption of fatty and carbohydrate foods, as well as overeating and, as a result, obesity.

2. Sedentary lifestyle. It leads to slower metabolism, weight gain and increased risk of insulin resistance.

3. Chronic diseases of blood vessels and heart. With hypertension, blood circulation is disturbed, which causes spasm of vessels and metabolic diseases.

4. Hormonal changes. The imbalance of estrogen and progesterone adversely affects metabolic processes in women. In men, metabolic syndrome often develops after forty-five years, which is caused by a decrease in testosterone levels.

Diagnosis of metabolic syndrome

There are signs to suspect pathology, as well as laboratory and instrumental diagnostic methods.

Diagnostic criteria for metabolic syndrome

According to the recommendations of the All-Russian scientific society of cardiologists, the main symptom of metabolic syndrome is obesity in the abdominal cavity,

which means that the waist circumference exceeds 80 centimeters for women and 94 centimeters for men. Other manifestations that indicate pathology:

- blood pressure indicators - higher than 140/90 mmHg;
- increase in triglycerides (more than 1.7 mmol / l);
- Decreased HDL level (less than 1.0 mmol / l in men and 1.2 mmol / l in women);
- increase in LDL (more than 3.0 mmol / l);
- hyperglycemia on an empty stomach (glucose indicator more than 6.1 mmol / l);
- impaired glucose tolerance (glucose level 2 hours after exercise - 7.8-11.1 mmol / l).

To be diagnosed with metabolic syndrome, a patient must have abdominal obesity and at least two of the listed manifestations.

Laboratory and instrumental diagnostics

Different methods are used to determine the pathology, but first of all, the doctor evaluates abdominal obesity. He also measures the patient's blood pressure and orders tests to determine:

- level of glucose or glycosylated hemoglobin (gives a more complete picture);
- indicators of lipid profile;
- homocysteine level;
- insulin content;
- C-reactive protein index.

The doctor may recommend a glucose tolerance test to the patient, as well as instrumental examinations, such as an EKG, to detect disorders accompanying metabolic syndrome.

Treatment of metabolic syndrome

Treatment of metabolic diseases is complicated. It is important for the patient to normalize carbohydrate and lipid metabolism, as well as to follow a proper lifestyle.

- General recommendations for the treatment of metabolic syndrome are as follows:
- normalization of body weight;
- giving up bad habits;
- drink enough water;
- eat small amounts;
- control the amount of fat in the diet (they should not be more than 30% of the total amount of dietary fat);
- avoid high-calorie foods, eat more low-calorie foods.

If the patient has a mild form of the disease, significant improvements will appear after the weight is normalized. If lifestyle changes do not help, metabolic syndrome is treated with drugs. Drug therapy is prescribed to patients with a BMI of more than 27-30, who have lost less than 5 kg. For 3-5 months, despite the use of non-narcotic measures.

To fight obesity, endocrinologists usually prescribe:

- Orlistat;
- Incretin analogues.

Stronger drugs are prescribed only after further investigations.

Treatment is also aimed at eliminating hypertension. The following are used for this: ACE inhibitors, AT-1 receptor antagonists, diuretics, beta blockers, calcium antagonists or calcium channel blockers.

If the patient is diagnosed with prediabetes, then Metformin or its analogues (Siofor, Glucophage) are indicated. This drug keeps blood sugar at a normal level and prevents the development of type 2 diabetes. It also reduces insulin resistance. The use of metformin allows you to restore the lipid balance, as well as reduce weight.

Regular physical activity and proper nutrition are the basis for the prevention of metabolic diseases. If they appear, contact the rehabilitation clinic in Khamovniki. Doctors conduct examinations, after which they develop individual recommendations for weight loss and treatment of Metabolic syndrome. The sooner the therapy is started, the easier it is to restore body functions.

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