METABOLIC SYNDROME AND OBESITY: DIAGNOSTIC CRITERIA

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The article presents a brief scientific review of the literature on one of the current medical and social problems. An analysis of studies of metabolic syndrome, which is a symptom complex and is characterized by abdominal obesity, arterial hypertension, and a combination of disorders of carbohydrate, lipid, and purine metabolism, is carried out

Keywords: *metabolic syndrome; obesity; diagnostic criteria; overweight; complications; body mass index, prevention*

МЕТАБОЛИЧЕСКИЙ СИНДРОМ И ОЖИРЕНИЕ: ДИАГНОСТИЧЕСКИЕ КРИТЕРИИ

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В статье представлен краткий научный обзор литературы об одной из актуальных медицинских и социальных проблем. Прово-

дится анализ исследований метаболического синдрома, который является симптомокомплексом и характеризуется абдоминальным ожирением, артериальной гипертензией, сочетанием нарушений углеводного, липидного, пуринового обменов.

Ключевые слова: метаболический синдром; ожирение; критерии диагностики; избыточный вес; осложнения; индекс массы тела, профилактика

Metabolic syndrome (MS) or insulin resistance syndrome is a serious socially significant, medical and economic problem. According to WHO data, the prevalence of MS in the world among adults varies from 20% to 25% [16, p. 2261]. In Russia, MS occurs in 41.2% to 50.0% of the adult population [1, p. 10-32; 2, p. 10-28; 3, p. 26-46] and prevalence rates vary depending on the diagnostic criteria used and are more often recorded in patients of the older and middle age groups 32-41% [4, p. 50-54; 7, p. 15; 9, p. 134].

In addition, it is worth noting that obesity is the basis of metabolic syndrome. The etiology of obesity is based on the interaction of predisposing endo- and exogenous factors. Thus, MS is a risk factor for the development of type II diabetes mellitus (DM), cardiovascular diseases (CVD), changes in immune status, the development of hyperuricemia, non-alcoholic fatty liver disease (NAFLD), osteoarthritis, but is also a predictor of the risk of carcinogenesis [5, p. . 19; 7, p. 15; 10, p. 90]. A study by the World Cancer Research Fund (WCRF, 2019) notes that excess body fat increases the risk of developing 12 types of cancer of various locations. It has been established that the presence of MS increases the risk of developing type II diabetes and arterial hypertension (AH) by 3-5 times.

Today, there is an increase in overall morbidity and mortality from complications such as MS, type II diabetes, liver steatosis (stage I fatty liver disease), hypertension, coronary artery disease, etc.) [9, p. 134]. The number of patients with MS is 2 times higher than the number of patients with type II diabetes. Also, it is important to note that the majority of patients with MS are people of active working age [9, p. 134].

Obesity is a chronic metabolic disease that occurs at any age and is one of the most common chronic diseases in Russia: in 2017, 28.1% of

men and 32.1% of women had obesity; and in 2021 this figure increased and amounted to 30.2% for men and 36.7% for women. In most European countries, about 20.0% of the population suffers from obesity, the smallest number is observed in Japan - 4.3% and in South Asian countries - in India 3.9%. According to various authors, the most common in the countries of North America and Western Europe and the leader is the United States - 36.2% of the adult population is overweight, and 27% is obese [13, p. 93-98; 15, p. 1118836; 16, p. 2261].

According to WHO, there is an increase in the prevalence of obesity and the tendency for physical inactivity to predominate continues.

It is important to note that risk factors for the development of MS are: genetic predisposition, old age, postmenopause in women, emotional fatigue and frequent stress, behavioral factors (sedentary lifestyle, predominance of fatty foods in the diet, etc.), low socio-economic level.

The diagnostic criteria for MS are presented in clinical recommendations for the management of patients with MS [4, p. 50-54; 6, p. 382-390; 19, p. 47-63]:

Various medical associations (communities): WHO; EGIR; NCEP ATP III, USA; AACE; IDF; VNOK has developed alternative criteria for diagnosing MS depending on the territorial (regional) factor; ethnicity or race; gender and age:

Diagnostic criteria for MS need to be adapted for the Russian Federation and take into account ethnic and genetic differences, national nutritional characteristics, lifestyle (standard of living, lifestyle, quality of life) and socio-economic status of the population.

In the diagnosis of MS, there are a main criterion and additional ones, and it is considered reliable if there are 3 criteria (1 main and 2 additional). The main criterion for MS is the "abdominal (central) type of obesity" (AO) with a waist circumference (WC) <80 cm in women and <94 cm in men.

Additional criteria include: blood pressure level >140 and 90 mmHg; ↑ triglyceride level, ↓ HDL cholesterol level, impaired glucose tolerance and impaired fasting glycemia, combined disorder of NGN/IGT.

Next, anthropometric indicators are assessed: body length (cm); body weight (kg); waist circumference (cm); hip circumference (cm);

OT/OB ratio. The degree of obesity is calculated using the body mass index formula (BMI, kg/m2) and, depending on BMI, an assessment is given: 1) body mass deficiency <18.5 kg/m2 (the risk of concomitant diseases is "low", but the risk of other diseases is increased: menstrual irregularities in women; decreased immunity; loss of libido in men; trophic changes in hair and nails, etc.; 2) normal - 18.5-24.9 kg/m2; 3) excess body weight (risk of concomitant diseases - "increased") - 25-29.9 kg/m2; 4) stage I obesity. - 30-34.9 kg/m2 (risk of concomitant diseases - "high"); 5) stage II obesity. - 35-39.9 kg/m2 (the risk of concomitant diseases is "very high"); 6) stage III obesity. - 40 kg/m2 and ↑ ('very high' risk of concomitant diseases).

It should be noted that only assessing body mass index will not be informative enough to predict the risk of developing cardiovascular diseases (CVD) and metabolic disorders [14, p. 2526-2528]. The development of MS is gradual and occurs without clinical symptoms for a long time.

There is no diagnosis of MS in ICD-10, and the conclusions describe all components of the symptom complex [1, p. 10-32; 2, p. 10-28; 3, p. 26-46]. Such patients may experience various metabolic disorders (single increases in TG levels, decreases in HDL cholesterol levels to primary and/or secondary type IIa hypercholesterolemia [8, pp. 10-34; 9, p. 134; 10, p. 90].

In a number of studies [4, p. 50-54; 5, p. 15; 6, p. 382-390; 7, p. 19; 12, p. 5] notes that the main goals of treatment for patients with MS are to reduce body weight, achieve metabolic control, optimal blood pressure levels and prevent cardiovascular complications [11, p. 530-538; 15, p.1118836; 16, p. 2261].

In men over 40 years of age and in women over 50 years of age, it is recommended to conduct a screening assessment of risk factors, including determination of lipid spectrum indicators in the blood (total cholesterol - total cholesterol, LDL cholesterol, HDL cholesterol and TG).

Late detection and inadequate correction of the main components of MS (carbohydrate metabolism disorders, "abdominal obesity", dyslipidemia and hypertension) are considered the main reason for the increased risk of developing various diseases.

Thus, timely diagnosis and well-chosen correction of individual components of MS will prevent the development and progression of cardiovascular diseases, type II diabetes and their complications. Normalization of body weight in patients with MS will lead to a decrease in blood pressure, and correction of carbohydrate metabolism disorders will further improve the lipid profile and reduce blood pressure.

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