

METABOLIC SYNDROME: CURRENT ISSUES, THE CHARACTERISTICS OF MANIFESTATIONS IN DIFFERENT ETHNIC GROUPS**G. H. Rajabova, K. Sh. Djumayev**

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Key words: metabolic syndrome, ethnic characteristics, abdominal obesity, hypertension, dyslipidemia, hyperglycemia.

Таянч сўзлар: метаболик синдром, этник хусусиятлар, абдоминал семизлик, артериал гипертензия, дислипидемия, гипергликемия.

Ключевые слова: метаболический синдром, этнические особенности, абдоминальное ожирение, артериальная гипертензия, дислипидемия, гипергликемия.

Metabolic syndrome is a polyetiologic pathological state, promoting the development of many diseases that are the major causes of morbidity and mortality of the population today. Problems of pathogenesis, diagnosis, and treatment of metabolic syndrome are actively discussed. The annual increase in the incidence requires improved approaches to prevention, diagnosis, and drug-free treatment of this pathological condition. According to epidemiological studies, about 300 million people in the world have a metabolic syndrome and according to WHO experts, an increase in the number of patients by 50% is expected in the next 20 years.

**МЕТАБОЛИК СИНДРОМНИНГ ДОЛЗАРЬ МУАММОЛАРИ,
ТУРЛИ ХИЛ ЭТНИК ГУРУХЛАРДА ХОС ХУСУСИЯТЛАРИ****Г. Х. Ражабова, К. Ш. Джумаев**

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Метаболик синдром – бугунги кунда ногиронлик ва юкори ўлимнинг асосий сабаби бўлган кўплаб касалликларнинг ривожланишига ҳисса қўшадиган полиэтиологик патологик ҳолат. Метаболик синдромнинг патогенези, ташҳиси ва даволаш муаммолари фаол муҳокама қилинмоқда. Касалликнинг ҳар йили кўпайиши ушбу патологик ҳолатнинг олдини олиш, ташҳис қўйиш ва номедикаментоз даволаш усуллари тақомиллаштиришни талаб қилади. Эпидемиологик изланишларга кўра, дунёда 300 миллионга яқин одам метаболик синдромга эга ва ЖССТ экспертларининг фикрига кўра, кейинги 20 йил ичида беморларнинг сони 50 %га кўпайиши кутилмоқда.

**МЕТАБОЛИЧЕСКИЙ СИНДРОМ: АКТУАЛЬНЫЕ ВОПРОСЫ,
ОСОБЕННОСТИ ПРОЯВЛЕНИЙ В РАЗНЫХ ЭТНИЧЕСКИХ ГРУППАХ****Г. Х. Ражабова, К. Ш. Джумаев**

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Метаболический синдром – полиэтиологическое патологическое состояние, способствующее развитию многих заболеваний, являющихся основной причиной инвалидизации и высокой смертности населения на сегодняшний день. Проблемы патогенеза, диагностики и лечения метаболического синдрома активно дискутируются. Ежегодный рост заболеваемости требует совершенствования подходов в профилактике, диагностике, и немедикаментозном лечении данного патологического состояния. Согласно данным эпидемиологических исследований, около 300 миллионов людей в мире имеют метаболический синдром, и, по мнению экспертов ВОЗ, в ближайшие 20 лет ожидается увеличение числа больных на 50%.

Metabolic syndrome (MS) is a complex of metabolic disorders (abdominal obesity, arterial hypertension, dyslipidemia, impaired carbohydrate tolerance, impaired system hemostasis, chronic subclinical inflammation), etiopathogenetically interconnected and accelerating the development and progression of atherosclerotic cardiovascular diseases, type 2 diabetes. According to WHO experts, "... we are facing a new pandemic of the 21st century, covering industrialized countries. This could be a demographic disaster for developing countries. The prevalence of the metabolic syndrome is 2 times higher than the prevalence of diabetes mellitus, and its growth rate is expected to increase by 50% in the next 25 years." The concept of metabolic syndrome X appeared in 1966 in the work of J. Camus. The final definition of metabolic syndrome was presented in a well-known Bunting lecture given by G. Reaven and published in the journal Diabetes in 1988. At his suggestion, this syndrome complex includes: insulin resistance (IR), impaired glucose tolerance (NTG), hyperinsulinemia, elevated levels low density lipoproteins (LDL) and triglycerides (TG),

arterial hypertension (AH). Kaplan coined the term “deadly quartet” and first introduced obesity into the insulin resistance syndrome. Over the past 3 years, more than 3,600 articles on various aspects of the metabolic syndrome have been published. In the adult population (30-69 years), metabolic syndrome is detected in 15-25% of cases, in people older than 70 years - detectability 40-45% in the age group from 20 to 30 years in 5-10%. As you know, metabolic syndrome increases the risk of type 2 diabetes, atherosclerosis, arterial hypertension and other diseases. In patients with metabolic syndrome, the frequency of development of life-threatening cardiovascular diseases increases by about 4 times. At scientific sessions of the American College of Cardiology (2007) it became known that the losses of the world community from cardiovascular diseases amount to more than 400 million a year. The main diagnostic criterion for the metabolic syndrome is insulin resistance, which is not included in the classifications proposed later (ATR III, ACE, etc.). In addition to identifying insulin resistance for the diagnosis of metabolic syndrome, according to WHO criteria, two or more of the following symptoms are necessary: arterial hypertension (blood pressure level $\geq 140 / 90$ mm Hg, and / or taking antihypertensive drugs); hypertriglyceridemia > 1.7 mmol/l (150 mg/dl); low HDL cholesterol < 0.9 mmol/L (35 mg/dl) in men and < 1 (39 mg/dl) in women); a body mass index of more than 30 kg/m^2 or a ratio of waist circumference to hip circumference > 0.9 in men and > 0.85 in women; urinary albumin excretion of more than $20 \mu\text{g/min}$ or albumin to creatinine ratio of more than 30. These criteria are not widely used in practical medicine due to the difficulty of conducting special studies of the state of carbohydrate metabolism. According to the authors, to identify metabolic in practical conditions, it is advisable to use the criteria adopted by experts of the US National Cholesterol Committee with some amendments in 2001: abdominal obesity (waist circumference for men > 102 cm, for women > 88 cm); hypertriglyceridemia (triglycerides > 1.69 mmol/l); low HDL cholesterol (< 1.04 mmol/L for men and < 1.29 for women); arterial hypertension (blood pressure $> 130/85$ mm Hg); hyperglycemia (plasma sugar > 6.1 mmol/L). Metabolic syndrome is diagnosed in the presence of any three or more of the five symptoms. In 2005, the International Diabetes Federation changed the criteria for the metabolic syndrome: abdominal obesity with rather rigid cut-off points (waist circumference in Europeans > 94 cm for men and > 80 cm for women) is considered as the main component in combination with two or more other factors - hyperglycemia $> 5, 6$ mmol/L, hypertriglyceridemia > 1.7 mmol/L, HDL cholesterol < 1 mmol/L for men and < 1.3 for women, arterial hypertension $> 130/85$ mm Hg. Today scientific literature offers various options of the pathogenesis of the metabolic syndrome. According to most authors, the key link in the metabolic syndrome is abdominal obesity, followed by the development of insulin resistance in individuals with a genetic predisposition to the disease. Moreover, a decrease in the activity of lipolytic processes, i.e. a decrease in the activity of hormone-sensitive lipase, which is activated by the action of catecholamines through cyclic adenosine monophosphate - dependent phosphorylation (cAMP). Insulin, causing hydrolysis of cAMP, increases the activity of lipogenic processes. However, it has been proven that obesity is not caused by insulin resistance and hyperinsulinemia. Environmental and genetic factors seem to play a leading role in the development of nutritional obesity: eating disorders with a predominance of animal fats and easily digestible carbohydrates, a sedentary lifestyle, frequent psycho-emotional stresses, depression, combined dysfunction of the nutritional nerve center and secondary dysfunctions endocrine glands. In visceral obesity, predominantly hypertrophy of fat cells and the distribution of fat in the abdominal region are observed. Abdominal fat includes visceral, intraperitoneal (omental and mesenteric) fat and retroperitoneal fat masses, which are deposited along the dorsal surface of the intestine and ventral surface of the kidneys. In this case, there is an increase in the degree of insulin resistance, which is compensated by hyperinsulinemia.

It should be noted that there are a number of methodological problems in the study of the epidemiology of MS, which are associated with the lack of a unified definition of this condition. Currently, at least 10 definitions (criteria) of MS have been proposed, but none of them are generally accepted today. The lack of consistency in the various definitions introduces controversy

in the interpretation of epidemiological studies. So, in the work of L. Guize et al., Where MS was determined by three criteria: NCEP (2001), revised criteria of NCEP-R (2005) and IDF (2005), its prevalence increased from 10.3% (NCEP) to 17.7% (NCEP-R) and 23.4% (IDF). At the same time, regardless of the criteria for assessing the metabolic syndrome, its prevalence increases significantly with age and has gender, ethnic and regional differences, with age and ethnicity playing a crucial role. The IDF Declaration (2005) emphasizes the relevance of the study of manifestations of MS in various ethnic groups in order to further complement and clarify the criteria for this condition. In addition to the high prevalence of MS, in contrast to the European population, the presence of insulin resistance is also characteristic of the Asian population with lower body mass index (BMI) and RT and a genetic predisposition to diabetes.

Results and discussion In Bishkek, a study was conducted to study the characteristics of MS in two ethnic groups: people of Russian (55 people) and Kyrgyz nationalities (59 people) aged 38 to 67 years. According to the frequency of occurrence of the criteria for MS, differences between the Kyrgyz and Russian ethnic groups were not identified. In Kyrgyz men, compared with Kyrgyz women, statistically significantly more common was hyperTG. There was no difference in the frequency of occurrence of MS components between Russian men and Russian women. According to the frequency of occurrence of the MS criteria, the first place is taken by the three-component, then the four-component and five-component MS. In Kyrgyz with a three-component MS, the combination of hypertension, low the level of HDL-C and obesity, with a four-component hyperTG joins, with a five-component - a violation of carbohydrate metabolism (NUO). In Russians with a three-component MS, with the same frequency of hypertension and low levels of HDL-C and HDT, with four-component obesity joins, with five-component - NUO. The main factors affecting the severity of atherosclerotic lesions of the extracranial carotid arteries in multivariate regression analysis taking into account the ethnic index among Russian patients are diabetes, the level of total cholesterol, BMI and aggravated heredity, and in the Kyrgyz people - obesity, apo-B, DBP, age and TG. So, from 2001 to 2004 in the city of Ulan-Ude M.N. Shedoeva conducted a one-stage study, which included 804 indigenous people (Buryats, Evenks) and 1,608 non-indigenous people (Russians, Tatars, Ukrainians) of Ulan-Ude ethnic groups aged 49 to 79 years. In the course of this study, it was found that the prevalence of GB in the population as a whole was equal among men and women (37.4%). Indigenous women had less frequent GB (28.3%) than men (41.1%), while non-indigenous women had GB more often (41.6%) than men (36.6%). When identifying ethnic subgroups, it turned out that the Buryats, Tatars, and Russians had a relatively equal frequency of GB, while the Evenks showed a lower incidence of the disease. The prevalence of dyslipoproteinemia (DLP) in the population as a whole was high (67%), equal among men and women. When studying the differences, it was found that women of indigenous ethnic groups, DLP is relatively less common than women of non-indigenous ethnic groups, with a relatively equal frequency of DLP among men. The level of atherogenic lipoproteins was significantly higher in the non-indigenous population, and the level of HDL cholesterol was found in the indigenous ethnic group, and among Buryat women, the level of HDL cholesterol was the highest. It was also revealed that representatives of the Tatar ethnic group showed a significant excess of fasting blood glucose compared with representatives of other ethnic groups. In addition, a significantly higher blood uric acid content was found in representatives of non-indigenous populations with a higher degree of reliability in Russians.

Conclusion Given that the metabolic syndrome underlies the diseases most often leading to disability and high mortality, the issue of optimizing the non-drug approach in the treatment of this condition remains relevant. Establishing the ethnic characteristics of MS will help to improve the treatment of patients and the prevention of severe complications of metabolic syndrome.

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