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The Occurrence of Metabolic Syndrome in Women of Childbearing Age Frequency

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Annotation: Metabolic syndrome is a set of pathological processes in the form of insulin resistance, abdominal obesity, dyslipidemia, and arterial hypertension, and which is linked to an increased risk of cardiovascular disease, diabetes, nonalcoholic liver disease, and chronic kidney disease. The presence of each component of the metabolic syndrome increases the risk of cardiovascular disease and the presence of several components in one patient increases this risk even more.

Keywords: *body mass index, young women of fertile age, risks, anthropometric status, nutrition, reproductive health.*

INTRODUCTION

According to the World Health Organization (WHO), 30% of the planet's population is overweight. Obesity is one of the diseases of the world civilization. Obesity is characterized by excessive accumulation of fat tissue in the body (more than 20% of body weight in men, more than 25% of body weight in women, body mass index from 25-30 kg/m 2 is more).

Today, obesity is considered the most important risk factor not only for cardiovascular diseases and type 2 diabetes (according to the World Health Organization, overweight and obesity account for 44-57% of type 2 diabetes up to 17-23%, ischemic heart disease up to 17-23%, arterial hypertension up to 17%, cholecystitis up to 30%, arthrosis up to 14%, low-grade tumor up to 11%, as well as predicts the development of an increased risk of developing tumors and reproductive diseases .

Based on the etiopathogenesis of obesity, according to modern views, the main pathogenetic mechanism that causes the disease is energy imbalance, that is, the imbalance of energy expenditure with

the calories of food products entering the body. Basically, this is an eating disorder, that is, overeating (the energy input to the body exceeds the expenditure);

- structural disorder of food products (excessive fatty food);

- violation of eating habits (the main daily calorie intake falls in the evening). Excess energy, triglycerides contained in food products accumulate in fat cells - adipocytes, causing their size to increase and body weight to increase.

In urban areas of China, the rate of overweight is 12%, and obesity is 11% of children aged 7-17. A similar situation is developing in most countries of the world. However, it is known that 15% of children under the age of 2 are overweight. 25% of preschool children and 80% of children between 10 and 14 years of age are obese, and children with hereditary obesity have been found to become obese after adulthood.

According to the WHO, obesity is a non-communicable disease, because of its wide spread among the population, the risk of developing cardiovascular diseases, early disability and early death of patients.

According to WHO, ~30% of the world's population is overweight, of which 16.8% are women and 14.9% are men. The number of obese people is increasing by 10% every 10 years.

Insulin resistance plays an important role in the pathogenesis of MS, in which pancreatic beta cells increase insulin secretion, as a result of which hyperinsulemia develops. Excess insulin production increases MNS activity, increases vasoconstriction and minute volume of blood circulation, increases VLDL synthesis, causes atherogenic dyslipidemia and obesity.In the early stages of the pathological process, hyperinsulinemia is neutralized due to insulin resistance. As a result of these processes, glucose tolerance is broken and diabetes develops later [10].

The death rate among people with MS is 20 or more times higher than among people without MS [6].

Type 2 diabetes, arterial hypertension, cardiovascular diseases, cancer and other diseases reduce the quality of life and cause an increase in the death rate among the working population [4].

Currently, more than 320,000 deaths from obesity-related diseases are recorded in Europe. Obesity, especially abdominal obesity, is a leading factor for the development of cardiovascular diseases and non-insulin dependent diabetes [2, 6]. Investigations show that the development of cardiovascular diseases and the occurrence of mortality42directly depends on the ratio of the circumference of the leg [5]. In addition, waist-to-bust ratio is more predictive of cardiovascular disease risk and mortality than body mass index (BMI). The relationship between the accumulation of adipose tissue, cardiovascular disease and diabetes was established more than half a century ago[7].

Normally, waist circumference should be up to 94 cm for men and 82 cm for women. Waist circumference exceeding these values is considered a dangerous criterion[9]. In patients with abdominal-visceral obesity, a waist circumference of 94-101 cm in men and 82-90 cm in women is considered a risk indicator, taking into account the comparison with waist circumference and examination using computer tomography. A high waist circumference increases the risk of developing cardiovascular disease and type 2 diabetes.

There are two types of diabetes, the alternative names of which describe their main difference: type 1 - insulin-dependent and type 2 - non-insulin-dependent. In the late stages of type 2 diabetes, insulin therapy is prescribed to patients with the ineffectiveness of drug therapy; in this case, an additional instruction appears in the diagnosis. Despite the uniqueness of some clinical signs, they develop according to a different scenario. The cause of type 1 diabetes (QD-1) is severe damage to β-cells of the pancreas, which is associated with a sharp decrease in insulin synthesis. QD-2 develops gradually with several mechanisms - insulin resistance (IR), increased glucose synthesis in the liver and slow development of insulin synthesis deficiency in pancreatic β cells. Type 2 diabetes mellitus develops after the age of 40 and accounts for 80-90% of diabetes patients. [3]

Results and its discussion. The analysis first examined the prevalence of the main components of

metabolic syndrome (MS).

Table 3.1.1.

Disruption of glucose tolerance and prevalence of diabetes among women

Young	Normoglycemia n=59	Glucose intolerance disorder n=18	Secondary QD n=34	Default defined QD n=4	Total n=115
20-29 years old	87.5% (14)	-	12.5% (2)	-	100% (16)
30-39 years old	51.72% (14)	17.24% (5)	31.03% (9)	3.4% (1)	100% (29)
40-49 years old	51.42% (31)	18.57% (13)	32.85% (23)	4.28% (3)	100% (70)
Total women	51.3%	15.65%	29.56%	3.47%	100%

Figure 7

Carbohydrate metabolism was checked in all patients: glucose tolerance test and blood sugar levels were determined.

Normoglycemia was detected in 87.5% of women (16 people) aged 20-29 years, and impaired glucose tolerance was not detected. In the same category of patients with type 2 diabetes mellitus (previously detected diabetes), it was detected in 12.5% of patients. Primary diagnosed type 2 diabetes was not detected in this group of patients.

The next category is 29 women aged 30-39. Among them, normo-glycemia was detected in 51.72%, and impaired glucose tolerance was detected in 17.24%. In the same category of patients with secondary type 2 diabetes mellitus, 31.03%, primary type 2 diabetes mellitus was detected in 3.4% of patients in this group.

There are 70 women aged 40-49, normoglycemia was found in 51.42% of them, and impaired glucose tolerance was found in 18.57%. In the same category of patients with secondary type 2 diabetes mellitus, 32.85%, primary type 2 diabetes mellitus was detected in 4.28% of patients in this group.

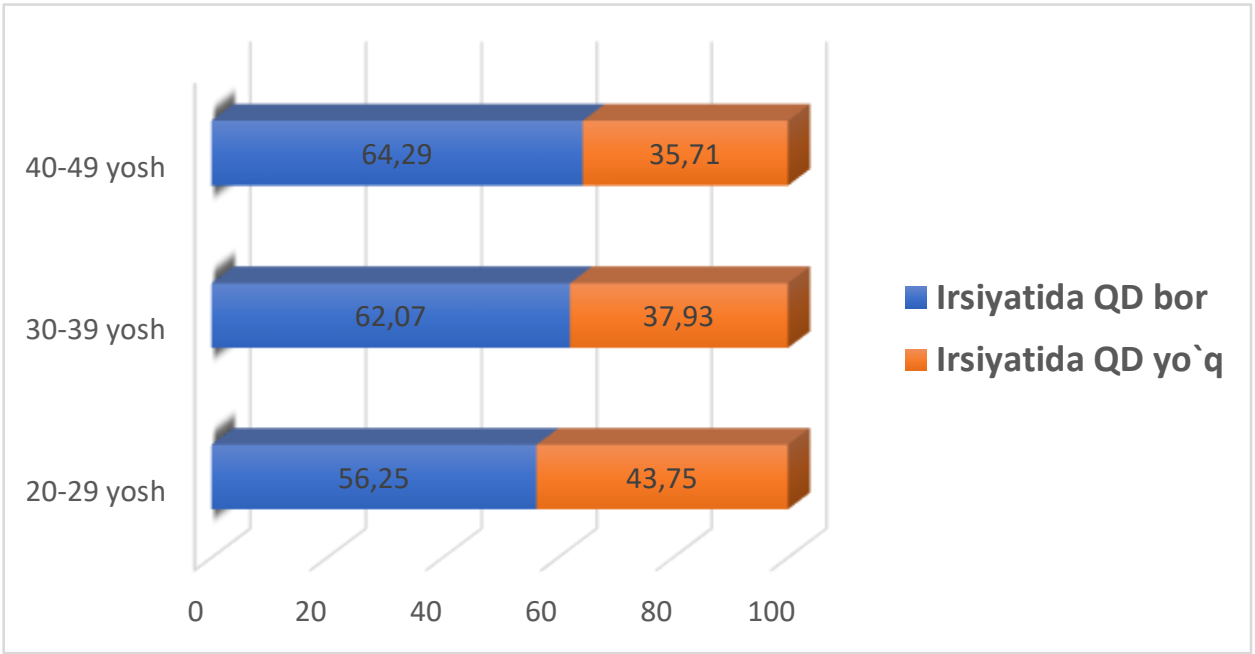

Figure 14

Thus, the results of the obtained data show a high prevalence of GTB and diabetes among women of fertile age.

Based on the questionnaire, it was determined what percentage of the examined women have a hereditary predisposition to diabetes, that is, whether diabetes is present in close relatives or not.

Based on the results of the survey, 56.25% of the 20-29-year-old women group have QD, and 43.75% have no predisposition.

62.07% of the 30-39-year-old group of women have ancestry, and 37.93% have no ancestry.

64.29% of the 40-49-year-old group of women have QD in their heredity, 35.71% have no QD in their heredity. So, 62.6% of 115 women have genetic predisposition to QD, and 37.4% have no genetic predisposition.

The next studied component of metabolic syndrome is weight gain. According to the obtained data, among women aged 20-29 years, normal body weight was 56.25%, overweight was 25%, and obesity was 18.75%.

In the group of 30-39-year-old women, there were 29, of which 48.27% had normal body weight, 31.03% were overweight, and 20.68% were obese.

Prevalence of overweight and obesity among women

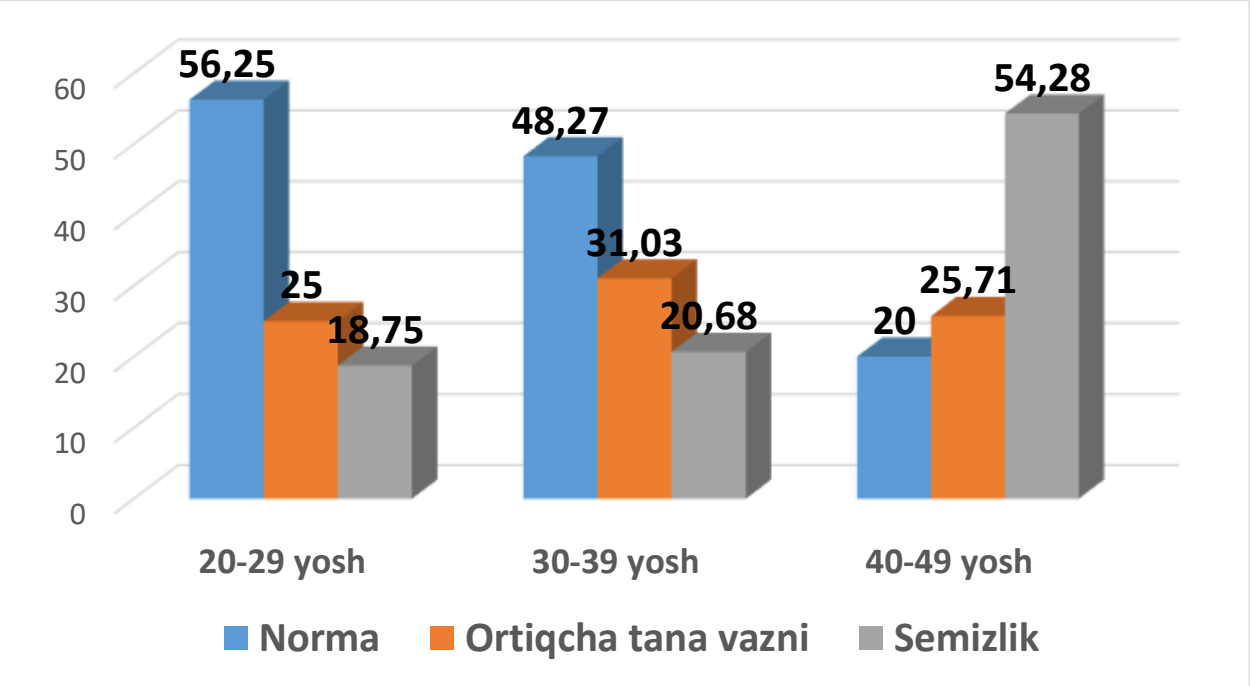

Figure 15

The group of women aged 40-49 is 70, of which 20.0% have normal body weight, 25.72% are overweight, and 54.28% are obese.

Thus, it was observed that the number of women with overweight and obesity increases with age.

We also studied the prevalence of arterial hypertension among women of fertile age.

Lipid spectrum, which is one of the components of metabolic syndrome, was studied and the following results were obtained. Hypercholesterolemia and hypertriglyceridemia were analyzed in this work.

Table3.1.2.

ARTERIAL BLOOD PRESSURE CHANGE INDICATORS

Young	20-29 years old	30-39 years old	40-49 years old	P
Systolic blood pressure	116.25 ± 3.75 (100-160)	130±2.80 (110-160)	141±2.56 (90-200)	p<0.05
Diastolic blood pressure	76.87±1.93 (70-90)	83.48±1.50 (100-70)	87.5±1.08 (60-100)	p<0.01

Statistical analysis of systolic and diastolic blood pressure was performed from the results of the analysis. The highest indicator corresponds to 40-49 years old and the lowest indicator corresponds to 20-29 years old. Confidence level is p<0.05 for SQB, p<0.01 for DQB.

Therefore, if preventive measures are taken from the age of 20-29, it is possible to prevent the level of blood pressure increase and complications with age.

CONCLUSIONS

1. Among 115 selected women of childbearing age, according to the results of an examination to determine the frequency of carbohydrate metabolism disorders, arterial hypertension and obesity, glucose tolerance disorders - 15.65%, secondary diabetes - 29.56%, primary diabetes - 3.47%, overweight - 26.95%, obesity - 40.86%, and arterial hypertension - 54.78%.

In this study, the frequency of occurrence of risk factors (metabolic syndrome) among women of childbearing age was studied. In the group of women aged 30-39, the highest percentage of combined risk factors was found to be impaired glucose tolerance + hypercholesterolemia in 66.7%. In the group of 40-49-year-old women, the combination of arterial hypertension + hypercholesterolemia 82.36%, arterial hypertension + excess body weight 83.33%, and arterial hypertension + impaired glucose tolerance + excess body weight 80% took high percentages.

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