INTERNATIONAL JOURNAL OF COGNITIVE NEUROSCIENCE AND PSYCHOLOGY

CORRELATION ANALYSIS OF THE MAIN COMPONENTS OF THE METABOLIC SYNDROME WITH THE AGE OF WOMEN OF FERTILE AGE

Kayumov U. K., Ibragimov A. Y., Khatamova D. T., Saipova M. L., Musaeva Sh. Z.

Center for the development of professional qualifications of medical workers, Uzbekistan

Abstract: Evaluating the expediency of preventive measures in women of childbearing age is an urgent problem of modern medicine. There is still insufficient data on the role of metabolic syndrome and its main components in the formation and clinical course of extragenital diseases in women. At the same time, it is important not only to identify risk factors for the formation and development of diseases, but also to develop a forecast of chronic non-communicable diseases among the female population. It is necessary to study not only the presence of MS components, but also their categories, and it is also advisable to develop new methods for assessing and preventing MS in women of fertile age in order to determine the formation and prognosis of extragenital diseases.

Key words: fertile age, metabolic syndrome.

Purpose of research. Development of suggestions and recommendations for reducing the risk of metabolic syndrome among women of fertile age

Research objectives. To study the risk factors for metabolic syndrome among women of fertile age

Materials and methods of research.

169 women aged from 15 to 49 years were under observation. At the same time, data obtained from a study of a representative sample (929 people) of the unorganized female population of fertile age (from 15 to 49 years), conducted in Tashkent, were analyzed.

The following methods were used: epidemiological survey, biochemical and instrumental.

Many countries around the world are conducting research on the effects of metabolic syndrome (MS) during pregnancy. These studies showed that 40% of the female population was overweight and 15% was obese. However, it has been shown that arterial hypertension, dyslipidemia, diabetes mellitus-2 (DM-2type) and impaired glucose tolerance (IGT) are common among women. Early detection and prevention of key components of the metabolic syndrome can normalize metabolic disorders and reduce the risk of maternal mortality, obstetric complications, and cardiovascular diseases (CVD). Early detection of MS and its components, as well as the effectiveness of preventive measures, are inextricably linked to the active participation of women in this process. Therefore, it is of particular importance to study the features of the metabolic syndrome, as well as the need to develop measures for the prevention of this syndrome in women of childbearing age.

According to the data obtained, there is a correlation between all components of MS and the age of women. These results support the well-known view that age is an independent risk factor.
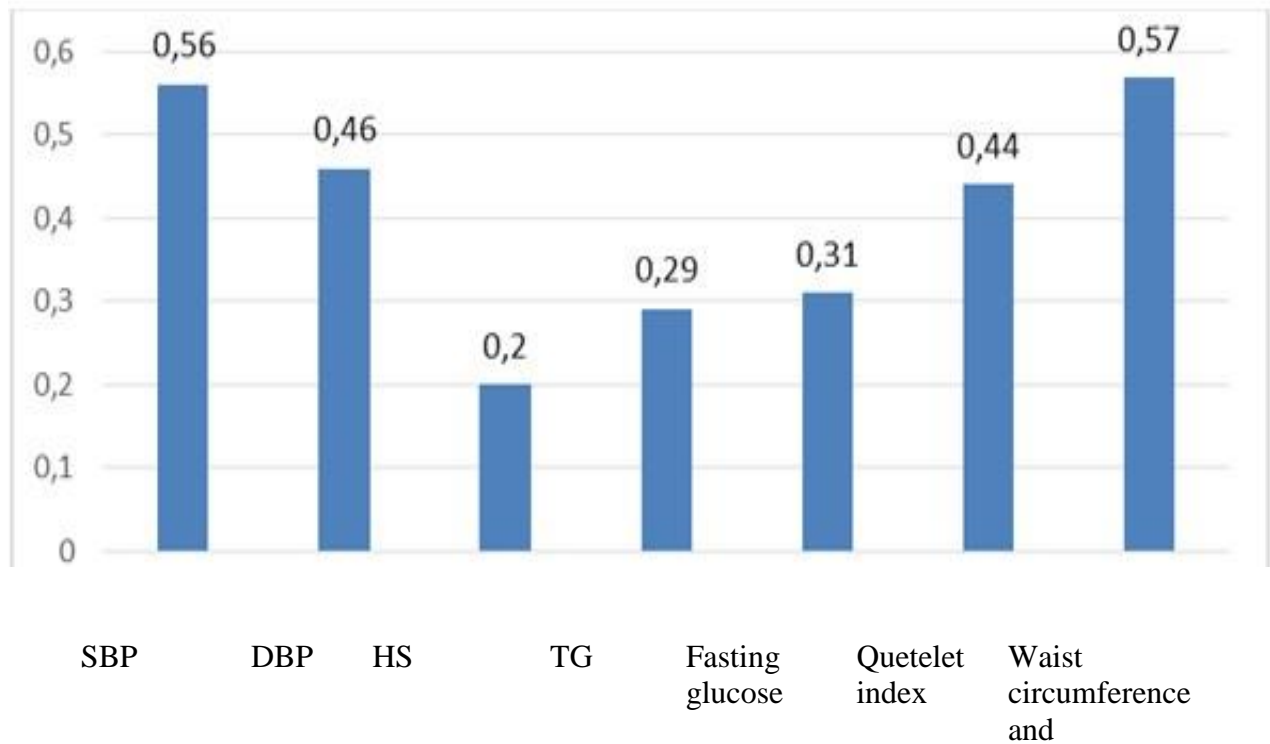
Figure 1. Correlation coefficients between age and major components of metabolic syndrome (all correlation indicators are significant, p<0.05).

However, it should be noted that the correlation is more pronounced for blood pressure, Quetelet index and waist circumference. The least specific connection is with lipids.

One of the leading components of metabolic syndrome is insulin resistance, which manifests itself as type 2 diabetes or impaired glucose tolerance. In population studies and mass preventive examinations, these conditions are mainly detected by laboratory blood tests. To study the distribution of DM-2 and IGT, taking into account that they were detected during the examination of glucose, carried out by studying the glucose tolerance test. According to the data obtained (Fig. 2), 84.1% of women had normal glucose tolerance.

At the same time, IGT occurred in 11.6% of women, and type 2 diabetes mellitus - in 2.7%. In addition, 1.5% of women were diagnosed for the first time during this study. The data obtained show that IGT and type 2 diabetes mellitus and their prevalence in the world differ according to epidemiological data. However, it should be noted that these data refer to women of childbearing age (15-49 years).
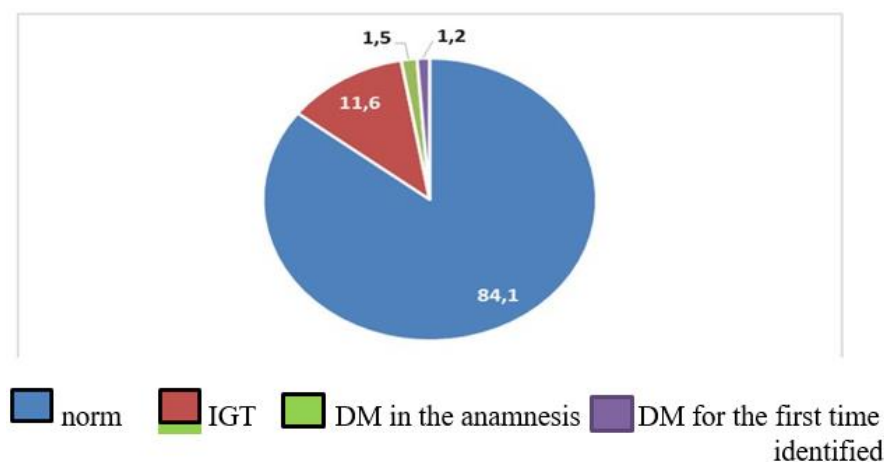

Figure 2. Incidence of IGT and type 2 diabetes among women of childbearing age (in%).

Maintaining and strengthening women's health are among the priorities of modern science and healthcare practice. The WHO report on gender equality identifies six key areas of women's health. According to WHO, women spend an average of 10 years of their lives sick, and 15.6% of women aged 18 years and over are in poor or unsatisfactory health. One of the important factors in the deterioration of women's health is the presence and high levels of key components of metabolic syndrome. Therefore, blood pressure levels and body weight indicators were studied in women differing in the number of births. At the same time, pregnancy and childbirth ending in the birth of a living child are taken into account. During the examination, the women were not pregnant. Termination of pregnancy for various reasons and stillbirths were not taken into account. Cases with severe arterial hypertension (AH), obesity of 2 and 3 degrees, decompensated diabetes mellitus, and heart disease were studied.

According to the data obtained, there is a certain connection between some of the studied indicators. Thus, systolic blood pressure levels increase in proportion to the increase in the number of births (Table 1).

Table 1. Mean systolic blood pressure in women

Statistical indicators	Number			
	of roads 1	2	3	4
n	82	107	151	120
M	106, 171	105, 196	105, 603	109, 000 *
WithAnd	103, 485	102 ,667	103, 670	106, 665
QD	12.2210	13, 1948	12.0200	12.9173,9173
RQD	0.1151	0.1254	0.1138	0.1185
SEM	1.3496	1.2756	0.9782	1.1792

Note: M-cf. a quantitative indicator. Qd is thestandard deviation. RQD-relative standard deviation.SAM-cf. standard error.

Systolic blood pressure levels were almost indistinguishable in women who gave birth one to three times. However, systolic blood pressure levels were higher in women who gave birth four times, and these differences were statistically significant.

As the number of births increased, so did diastolic blood pressure. However, diastolic blood pressure levels between groups of women who gave birth two or three times were more pronounced than those between groups who gave birth to systolic blood pressure (Table 2).

Table 2. The relationship between women's fertile function and the components of metabolic syndrome

Mean diastolic blood pressure in women with different numbers of births.

Statistical indicators	Numbe of births			
	of roads 1	2	3	4
n	82	107	151	120
M	69, 122	67, 813	69, 583	71, 300 *
95% DEE	66, 945	65, 954	68, 020	69, 449
QD	9, 9087	9, 6994	9,7210	10, 2429
RQD	0.1434	0.1430	0.1397	0.1437
SEM	1.0942	0.9377	0.7911	0.9350

Along with systolic blood pressure levels, diastolic blood pressure levels were statistically significantly different from those in the other groups.

The Quetelet index did not differ significantly between the groups of women who gave birth once and twice (Table 3).

Table 3. Average Quetelet index for women

Statistics k arrows	Number of births			
	1	2	3	4
n	82	107	151	120
M	23 174	23 292	25 106 *	25 274 *
95% WithAnd	22, 182	22, 502	24, 174	24, 415
QD	4,5177	4 1195	4,5177 4,1195 5,7978	4,7485
RQD	0.1949	0.1769	0.2309	0.1879
SEM	0.4989	0.3982	0.4718	0.4335

However, the levels of the Quetelet index were statistically significantly different from similar indicators in the previous groups: the levels of the Quetelet index were significantly higher in women who gave birth three to four times than in those who gave birth once or twice.

Thus, on the one hand, we can conclude that there is a certain positive relationship between the number of pregnancies and births and the level of blood pressure and body mass index. However, it is clear from the data that this relationship is typical when the number of births is more than two (three and four). Therefore, it is recommended to carry out preventive work on blood pressure and weight gain in women of reproductive age.

However, in this study, a univariate analysis was carried out and factors such as gestational age, the presence of a number of diseases, and age indicators were not taken into account. Therefore, the results obtained can only reflect the general situation. To further explore the relationship between blood pressure and body weight, additional studies should be conducted using multivariate analysis taking into account the above factors.

References.

1. Gorbachev, D. O. Characteristics of actual nutrition and eating behavior in persons with normal and excessive nutritional status / D. O. Gorbachev // Science of the Young – Eruditio Juvenium. – 2019. – T. 7. – No. 4. – P. 541–547.

2. Druzhilov, M. A. Visceral obesity as a risk factor for arterial hypertension / M. A. Druzhilov, T. Yu. Kuznetsova // Russian Journal of Cardiology. – 2019. – No. 4. – P. 7–12.

3. On the question of the criteria for metabolic syndrome, the importance of choosing a criterion for assessing the prevalence / E. V. Shlyakhto, A. O. Konradi, O. P. Rotar // Arterial hypertension. – 2019. – T. 15. – No. 4. – P. 409–412.

4. Concept of new national clinical recommendations on obesity / E. V. Shlyakhto, S. V. Nedogoda, A. O. Konradi [et al.] // Russian Journal of Cardiology. – 2016. – No. 4 (132). – P. 7–13.

5. Assessment of the prevalence of metabolic syndrome depending on the diagnostic criteria among workers in the mining industry of Yakutia / Yu. V. Lutov, V. G. Selyatitskaya, Yu. A. Nikolaev [et al.] // Arterial hypertension. – 2010. – T. 16. – No. 5. – pp. 474–478.

6. Perepech, N. B. Clinical recommendations. Diagnosis and treatment of arterial hypertension / N. B. Perepech, I. E. Chazova // Systemic hypertension. – 2019. – T. 16. – No. 1. – P. 6–31.

7. Prevalence of metabolic syndrome in residents of Novosibirsk aged 25 to 45 years / M. I. Voevoda, N. A. Kovalkova, Yu. I. Ragino [etc.] // Therapeutic archive. – 2016. – T. 88. – No. 10. – P. 51–56.

8. Roitberg, G. E. The influence of insulin resistance on the formation and progression of components of the metabolic syndrome (results of a five-year study) / G. E. Roitberg, Zh. V. Dorosh, O. O. Sharkhun // Rational pharmacotherapy in cardiology. – 2020. – T. 11. – No. 2. – P. 132–138.