

COMPARATIVE ASSESSMENT OF THE PREVALENCE OF THE MAIN COMPONENTS OF THE METABOLIC SYNDROME IN DIFFERENT AGE GROUP

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✓ Resume,

1193 men aged 20-69 years from the unorganized population were examined. Among them, the frequency of occurrence of the main components of the metabolic syndrome (MetS) was studied: arterial hypertension, obesity and overweight, impaired glucose tolerance (IGT), and hyperlipidemia. It was found that age makes a significant contribution to the increase in MetS components. At the same time, as the age increases, the number of MetS components also increases. The decrease in the frequency of MetS components at the age of 60-69 years may be associated with a more intensive dropout of persons with c from the population due to mortality. At a young age, people without or with a small number of MetS components are most often found. As the age increases, there is an increase in MetS components and, above all, such components as AH and IGT.

Keywords: metabolic syndrome, age, aging, impaired glucose tolerance, arterial hypertension, overweight, obesity, dyslipidemia.

СРАВНИТЕЛЬНАЯ ОЦЕНКА РАСПРОСТРАНЁННОСТИ ОСНОВНЫХ КОМПОНЕНТОВ МЕТАБОЛИЧЕСКОГО СИНДРОМА В РАЗЛИЧНЫХ ВОЗРАСТНЫХ ГРУППАХ

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Обследовано 1193 мужчин в возрасте 20-69 лет из неорганизованной популяции. Среди них была изучена частота встречаемости основных компонентов метаболического синдрома: артериальная гипертензия, ожирение и избыточная масса тела, нарушение толерантности к глюкозе и гиперлипидемия. Установлено, что возраст вносит существенный вклад в увеличение компонентов МС. При этом, по мере увеличения возраста растёт и количество компонентов МС. Снижение частоты компонентов МС в возрасте 60-69 лет, возможно, связано с более интенсивным выбыванием лиц с из популяции в связи со смертностью. В молодом возрасте чаще всего встречаются люди без или с малым количеством компонентов МС. По мере увеличения возраста наблюдается рост количества компонентов МС и, прежде всего, таких компонентов как АГ и НТГ.

Ключевые слова: метаболический синдром, возраст, старение, нарушение толерантности к глюкозе, артериальная гипертензия, избыточная масса тела, ожирение, дислипидемия.

METOBOLIK SINDROMNING ASOSIY TARKIBIY QISIMLARINING TURLI YOSH GURUHLARIDA TARQALISHINI QIYOSIY BAHOLASH

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Uyushmagan aholi orasidan 20-69 yoshdagi 1193 nafar yerkak tibbiy ko'rikdan o'tkazildi. Ular orasida metabolik sindromning asosiy tarkibiy qismlarining paydo bo'lish chastotasi o'rganildi: arterial gipertenziya, semizlik va ortiqcha tana vazni, glyukozaga tolerantlikni buzilishi (GTB) va giperlipidemiya. Inson yoshi MS komponentlarining ko'payishiga salmoqli hissa qo'shayotgani aniqlandi. Shu bilan birga yosh oshgan sari MS komponentalari soni ham ortib boradi. MS komponentalarining chastotasi 60-69 yoshlarda pasayishi, bu guruhda o'limning ortishi bilan bog'liq bo'lishi mumkin. Yoshlarda MS komponentalari kam bo'lgan yoki bo'lmagan odamlar yeng ko'p topildi. Yosh oshgan sari MS komponentlarida va, yeng avvalo, AG va GTB kabi komponentlarda o'sish kuzatiladi.

Kalit so'zlar: metabolik sindrom, yosh, qarish, buzilgan glyukoza bardoshlik, arterial gipertenziya, og'ir, semizlik, dislipidemiya.

Relevance

Over the past few decades, metabolic syndrome (MetS) has become one of the most important problems of modern health care [1]. MS includes obesity, hypertension, and insulin resistance [2]. MetS contributes to the development of many diseases, as well as their more severe clinical course and premature mortality of patients. Therefore, in order to prevent the development of comorbid diseases, as well as to reduce the morbidity and mortality of the population, primary and secondary prevention should be carried out [3]. To do this, it is necessary to identify various risk factors. Among the most important risk factors are the main components of MetS, as well as the age of patients.

The role of age as an independent risk factor for many diseases is well known. However, questions about the state of the main components of MetS, depending on the categories of hyperglycemia in people of different ages, remain insufficiently studied. It is important to study the clinical course of MetS and related diseases in different age periods. This information is necessary for the development of programs for the early diagnosis and prevention of both MetS and related diseases in people of different ages.

For successful implementation of preventive measures, it is important to have data on the prevalence of factors [4]. To do this, it is necessary to conduct screening examinations among the population [5, 6]. Previously, it was shown that age acts as an independent risk factor for many diseases. Its relationship with blood pressure, body weight, hyperuricemia, and the hemostatic system has been established [7, 8, 9], and its importance in the mortality of the population has been shown [10, 11, 12, 13, 14]

The purpose of the study. To study the frequency of occurrence of the main components of MetS among people of different ages.

Material and methods

The study included 1,193 men aged 20 to 69 years, representing a representative sample of the unorganized population. Arterial hypertension was diagnosed when the following blood pressure indicators (in mmHg) were detected: systolic blood pressure (SBP) is equal to, or more than 140 and (or) diastolic blood pressure (DBP) is equal to or more than 90.

Overweight and obesity were detected according to the criteria of the International Group on Obesity (1997): in persons with the level of the Quetelet index (weight (kg)/height(m)²) ≥ 25 but < 30 BMI was recorded, and Quetelet index levels ≥ 30 were taken for obesity.

Criteria for the diagnosis of hyperlipidemia: hypercholesterolemia (HC) was detected at a level of CS more than 6.1 mmol/l, hypertriglyceridemia (HTH) was recorded at a level of TG more than 1.7 mmol/l, for hyperbetalipoproteinemia (H β LIP), beta-LIP values of more than 55 opt. Units were taken.

The state of glucose metabolism was assessed by the standard glucose tolerance test (GTT). To do this, blood glucose levels were analyzed on an empty stomach, as well as one and two hours after the sugar load (75 g of glucose dissolved in 250 ml of water). Criteria used (mmol/l): normal glucose tolerance: fasting < 6.1 and glycemia < 7.8 after 2 hours; fasting hyperglycemia < 6.1 , but < 7.0 and glycemia after 2 hours < 7.0 ; IGT - fasting glycemia < 7.0 and glycemia after 2 hours < 7.8 , but < 11.1 ; diabetes mellitus: fasting glycemia < 7.0 and glycemia after 2 hours > 11.1 . The violation of the activity of the sympathoadrenal phase of the glycemic curve was judged by the level of glycemia one hour after the sugar load (glucose ≤ 8.8).

Result and discussion

According to the data obtained (Figure 1), the largest number of people without the main components of MetS is among young people. As the age increases, the number of individuals without MetS components decreases. In men of different age groups, the incidence of having only one component increases with increasing age. However, among the elderly (60-69 years old), the number of such cases decreases. The number of cases of a combination of 2 and 3 components of MetS also increases with age. But even in this case – in the elderly, the number of such cases decreases. However, about the combination of the 4 components of the MetS, the situation is somewhat different. This combination occurs only after 40 years old, increases to 60 years old, and then decreases.

The findings suggest that age contributes to the increase in MetS components. At the same time, a lower number of different combinations in the oldest age group may indicate a higher mortality rate among these men. And this, in turn, leads to the elimination of the risk with a large number of MetS components from the observation.

Further, specific combinations of the main components of MetS in different age groups were studied. As it turned out (table. 1), the frequency of the combination of different components of MetS differs significantly by age group. As the age increases, the frequency of occurrence of most MetS components increases. However, it should be noted that such components of MetS as IGT and AH are more common.

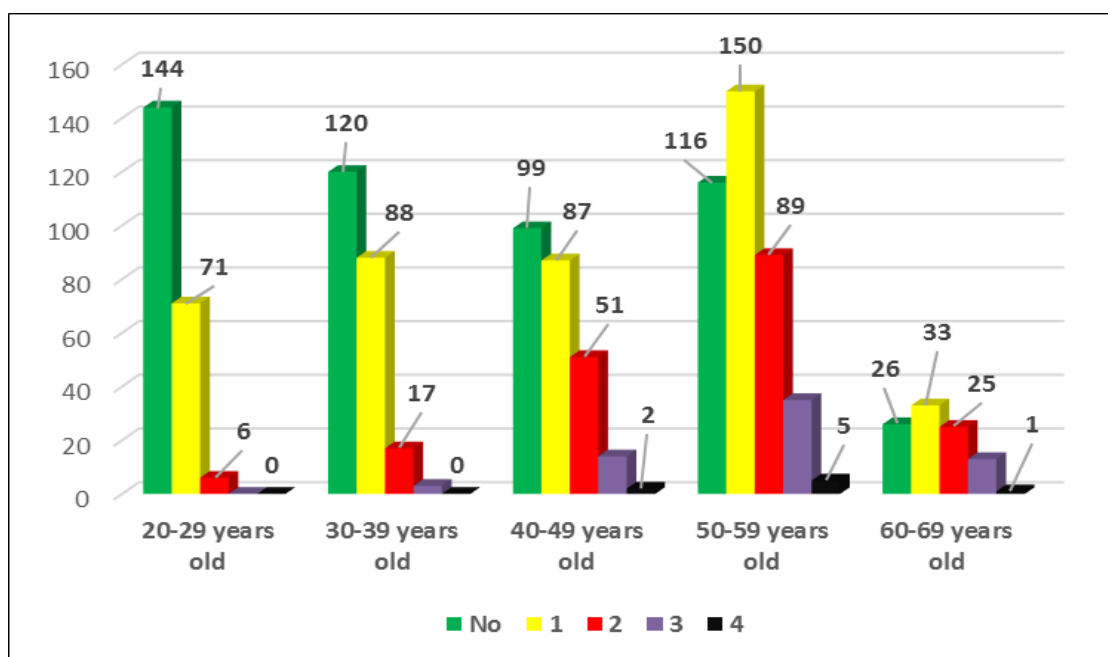


Figure 1. The number of different combinations of the main components of MetS in individual age groups

The findings suggest that age contributes to the increase in MetS components. Simultaneously, a lower number of different combinations in the oldest age group may indicate a higher mortality rate among these men. And this, in turn, leads to the elimination of the risk with many MetS components from the observation.

Further, specific combinations of the main components of MetS in different age groups were studied. As it turned out (table. 1), the frequency of the combination of different components of MetS differs significantly by age group. As the age increases, the frequency of occurrence of most MetS components increases. However, it should be noted that such components of MetS as IGT and AH are more common.

Table 3.

Cases of combination of different components of MS in age groups

MetS components	20-29 years old	30-39 years old	40-49 years old	50-59 years old	60-69 years old	20-69 years old
No	102 27,3% RT 43,4% CT	104 24,4% RT 37,7% CT	81 19,3% RT 26,9% CT	111 23,6% RT 21,0% CT	24 5,4% RT 19,4% CT	421 (35,9%)
AH+GH	1 9,1% RT 0,5% CT	2 18,2% RT 0,9% CT	1 9,1% RT 0,4% CT	6 54,5% RT 1,5% CT	1 9,1% RT 1,0% CT	11 (0,9%)
AH+Overweight+GH	4 5,7% RT 1,8% CT	8 11,4% RT 3,5% CT	16 22,9% RT 6,3% CT	33 47,1% RT 8,4% CT	9 12,9% RT 9,2% CT	70 (5,9%)
AH+IGT	1 5,6% RT 0,5% CT	0 0,0% RT 0,0% CT	5 27,8% RT 2,0% CT	4 22,2% RT 1,0% CT	8 44,4% RT 8,2% CT	18 (1,5%)
AH+IGT+GH	0 0,0% RT 0,0% CT	0 0,0% RT 0,0% CT	5 29,4% RT 2,0% CT	7 41,2% RT 1,8% CT	5 29,4% RT 5,1% CT	17 (1,4%)
AH+IGT+Overweight	1 1,8% RT 0,5% CT	5 8,8% RT 2,2% CT	15 26,3% RT 5,9% CT	27 47,4% RT 6,8% CT	9 15,8% RT 9,2% CT	57 (4,8%)
GH	53 39,6% RT 24,0% CT	36 26,9% RT 15,8% CT	18 13,4% RT 7,1% CT	24 17,9% RT 6,1% CT	3 2,2% RT 3,1% CT	134 (11,2%)
Overweight+GH	17 14,8% RT 7,7% CT	23 20,0% RT 10,1% CT	30 26,1% RT 11,9% CT	38 33,0% RT 9,6% CT	7 6,1% RT 7,1% CT	115 (9,6%)
MetS	0 0,0% RT 0,0% CT	3 4,5% RT 1,3% CT	16 24,2% RT 6,3% CT	35 53,0% RT 8,9% CT	12 18,2% RT 12,2% CT	66 (5,5%)
IGT	17 22,1% RT 7,7% CT	17 22,1% RT 7,5% CT	18 23,4% RT 7,1% CT	20 26,0% RT 5,1% CT	5 6,5% RT 5,1% CT	77 (6,4%)
IGT+GH	19 30,6% RT 8,6% CT	11 17,7% RT 4,8% CT	6 9,7% RT 2,4% CT	22 35,5% RT 5,6% CT	4 6,5% RT 4,1% CT	62 (5,2%)
IGT+Overweight	5 7,0% RT 2,3% CT	7 9,9% RT 3,1% CT	21 29,6% RT 8,3% CT	33 46,5% RT 8,4% CT	5 7,0% RT 5,1% CT	71 (5,9%)
IGT+Overweight+GH	1 1,5% RT 0,5% CT	12 17,6% RT 5,3% CT	21 30,9% RT 8,3% CT	28 41,2% RT 7,1% CT	6 8,8% RT 6,1% CT	68 (5,7%)

There are more cases without MetS components and cases with one or two components at a young age, for example, only GH. But in the case of a combination of GH with IGT or AH, the frequency of such combinations increases significantly. The presence of IGT or AH significantly increases the combined course of these components in older age groups.

Conclusions

1. Age contributes significantly to the increase in MetS components. At the same time, as the

age increases, the number of MetS components also increases. The decrease in the frequency of MetS components at the age of 60-69 years may be associated with a more intensive dropout of persons with c from the population due to mortality.

2. At a young age, people without or with a small number of MetS components are most often found. As the age increases, there is an increase in MetS components and, above all, such components as AH and IGT.

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