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Analysis of the State of Treatment of Individual Components of the Metabolic Syndrome

Yazmuradov F. A. [1], **Adizova N. D** [2]

[1, 2] Bukhara State Medical Institute, Uzbekistan

Abstract: The article presents the results of the state of coverage of the treatment of the main components of the metabolic syndrome among the population. An unfavorable epidemiological situation has emerged among the population surveyed regarding the coverage of the main components of the metabolic syndrome. The situation is a very important risk factor and predictor of premature mortality.

Keywords: dyslipidemia, arterial hypertension, hyperilipidemia, obesity.

Relevance

Metabolic syndrome (MS) is one of the most important problems of modern medicine. This is explained by the fact that MS has a high risk of mortality [5,6]. Among people with MS, mortality is 20 or more times higher than without MS [3,7]. The main components of MS include non-insulin-dependent diabetes mellitus (or impaired glucose tolerance), arterial hypertension, obesity, and dyslipidemia. The prevalence of MS among the population in different regions is quite high (10-24%), and in economically developed countries, the frequency of MS among the population reaches 35-40% [1,4].

In the pathogenesis of MS, insulin resistance plays an important role, in which pancreatic beta cells increase insulin secretion, resulting in hyperinlinemia. Excessive production of insulin increases the activity of the SNS, causes vasoconstriction and an increase in the minute volume of blood circulation, increases the synthesis of VLDL, atherogenic dyslipidemia and obesity are formed. At the initial stages of the pathological process, hyperinsulinemia compensates for the negative effects of insulin resistance. However, with increased insulin production, there is a further increase in the degree of insulin resistance. As a result of these processes, a violation of glucose tolerance is formed and, subsequently, overt diabetes mellitus develops[1,8].

It should be noted that there is a close pathogenetic relationship between various MS components. Therefore, the recommendations proposed by the International Diabetes Federation (IDF) in 2006 indicated that in the treatment of MS, lipid-lowering drugs, antihypertensive drugs, as well as drugs to reduce insulin resistance and hyperglycemia should be used. It is also necessary to normalize the increased body weight. Therefore, in the treatment, in the primary and secondary prevention of MS, as well as associated mortality, adequate pharmacotherapy of the main components of MS is of great importance. Taking into account the fact that in modern conditions the majority of MS patients receive treatment on an outpatient basis, it is of particular interest to study pharmacotherapy and its effectiveness in primary health care [2].

Material and Research Methods

The analysis includes the results of a population study among the unorganized population of Bukhara, numbering 797 people (242 men and 555 women).

When assessing blood pressure (BP), the average values of 2 measurements taken at least 2 minutes apart were taken into account. For the purpose of a comparative study of various criteria for hypertension, the study used both the "old" classification of hypertension, used in epidemiological studies, and the latest WHO classification. According to the criteria for classifying hypertension for epidemiological studies (Rose G.A., Blackburn H., 1968), the following values were taken for hypertension (in mm Hg): systolic blood pressure (SBP) > 160 and / or / diastolic blood pressure (DBP) ≥ 95. According to the latest WHO classification for hypertension (WHO, 1999), the following categories are distinguished (in mmHg): optimal blood pressure (SBP - <120; DBP <80); normal blood pressure (SBP < 130; DBP < 85); high normal blood pressure (SBP 130-139; DBP 85-89); 1 degree AH (SBP 140-159; DBP 90-99); 2 degree AH (SBP 160-179; DBP 100-109); 3 degree AH (SBP ≥ 180; DBP ≥ 110). Given the population nature of this study, these categories were grouped as follows: normal BP: SBP ≤ 139; DBP ≤ 89, AH - SBP ≥140; DBP ≥ 90. At the same time, hypertension was recorded regardless of blood pressure indicators if the patient took antihypertensive drugs within 2 weeks prior to the examination.

- Overweight, according to the recommendations of the International Group on Obesity (1997), is fixed at the indicators of the Quetelet index, calculated by the formula: weight (kg) / height (m)², ≥ 25, and IC levels ≥ 30 are taken for obesity. At the same time, in population studies, it is recommended to take IC values > 29 for BMI (Rose G.A., Blackburn H., 1968). Therefore, in this work, IC ≥ 30 was taken as the criteria for BMI, since this level of IC differs little from the BMI criteria recommended for population studies and, at the same time, meets the obesity criteria recommended by the International Obesity Group.
- The content of lipids in venous blood was determined on the analyzer "Hospitex". The levels of cholesterol (CS) and triglycerides (TG) were studied. Hypercholesterolemia (HC) was taken as cholesterol > 6.1 mmol/l, and hypertriglyceridemia (HTG) - TG level > 1.7 mmol/l.
- The state of glucose tolerance was assessed on the basis of the indicators of the standard glucose tolerance test (TSH) with the determination of fasting glycemia, as well as 1 and 2 hours after taking 75 g by the subject. Glucose. During the examination, an automatic glucose analyzer "AMES" (Japan) was used. Evaluation of glycemia indicators and detection of cases of NTG were carried out according to the Methodological recommendations of the Institute of Experimental Endocrinology and Chemistry of Hormones of the USSR Academy of Medical Sciences (1976), taking into account the recommendations of WHO experts (1981). In accordance with these recommendations, the evaluation of the obtained data was carried out according to the following criteria (in mg%): normal glucose tolerance: at the level of fasting glycemia < 100, 1 hour after glucose loading < 160 and 2 hours after < 100; impaired glucose tolerance: fasting glycemia < 100; 1 hour after glucose load > 160 and (or) 2 hours > 100; diabetes mellitus: fasting glycemia > 100, 1 hour after glucose loading > 180, 2 hours > 130. At the same time, modern WHO recommendations (WHO, 1996) were also used in the work, according to which cases of glycemia after 2 hours are accepted as IGT after glucose loading ≥140 mg% with normal fasting glucose (<100 mg%).

Results and Discussion

According to the data obtained, 80.7% of women and 71.9% of men with hypertension reported that they receive treatment for this disease (Fig. 1). As can be seen from the presented data, the female contingent is significantly more likely to seek treatment for hypertension. It should be noted that these figures alone indicate fairly wide treatment coverage of patients with hypertension. However, 5.22% of women and 5.14% of men without hypertension reported being treated for hypertension. It should be noted that one in five women and more than one in four men do not receive treatment for hypertension.

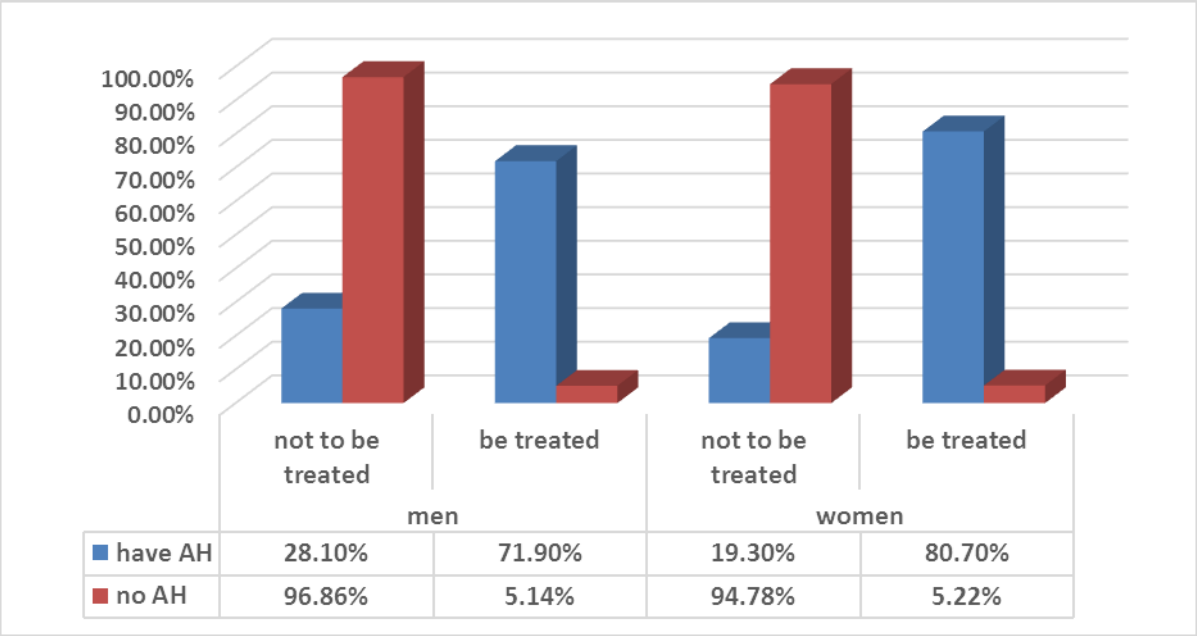


Figure 1. Status of treatment coverage for hypertension among women and men

Further, the status of treatment coverage of persons with hypercholesterolemia was analyzed (Fig. 2). As it turned out, 96.67% of women and 92.86% of men suffering from hypercholesterolemia (HC) do not receive drug treatment to lower cholesterol levels.

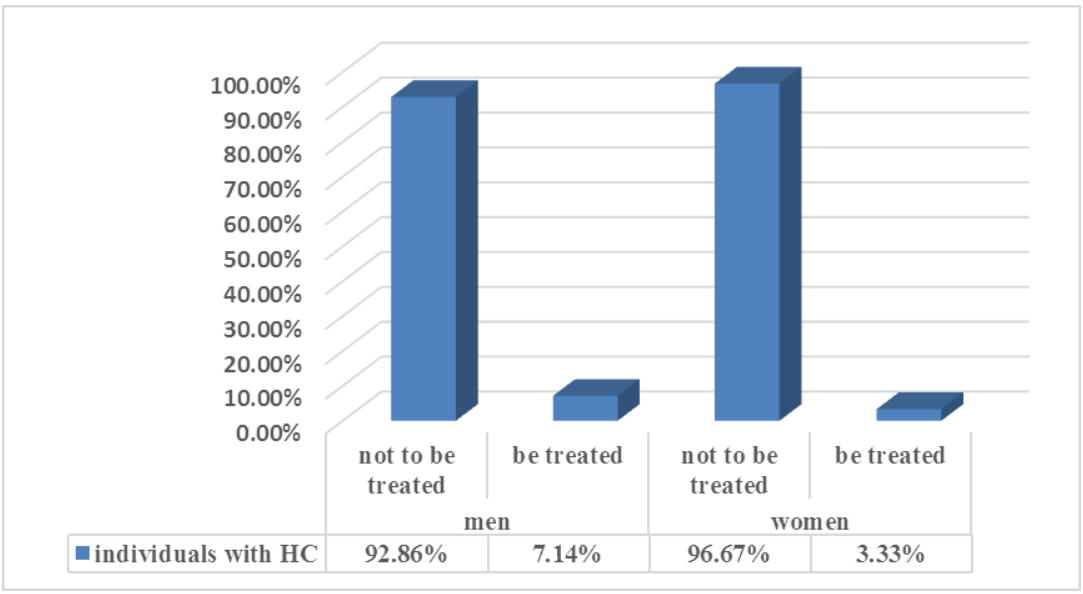
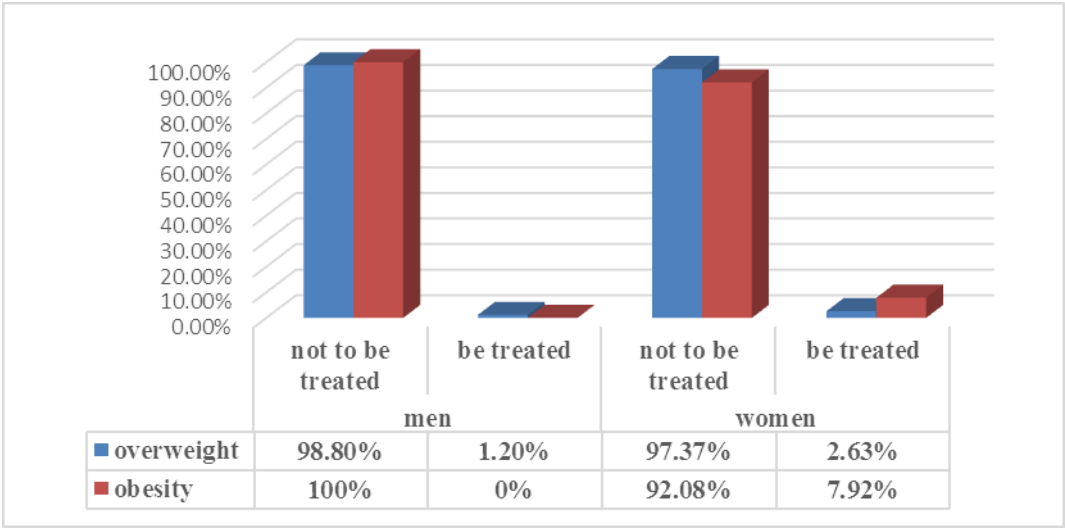


Figure 2. Status of HC treatment coverage among women and men

Only 3.33% of women and 7.14% of men attempt to lower their cholesterol levels.

A depressing picture was found in terms of treatment coverage for obese and overweight patients (Fig. 3). As follows from the data obtained, only 2.63% of overweight women and 1.2% of men receive treatment for weight loss.



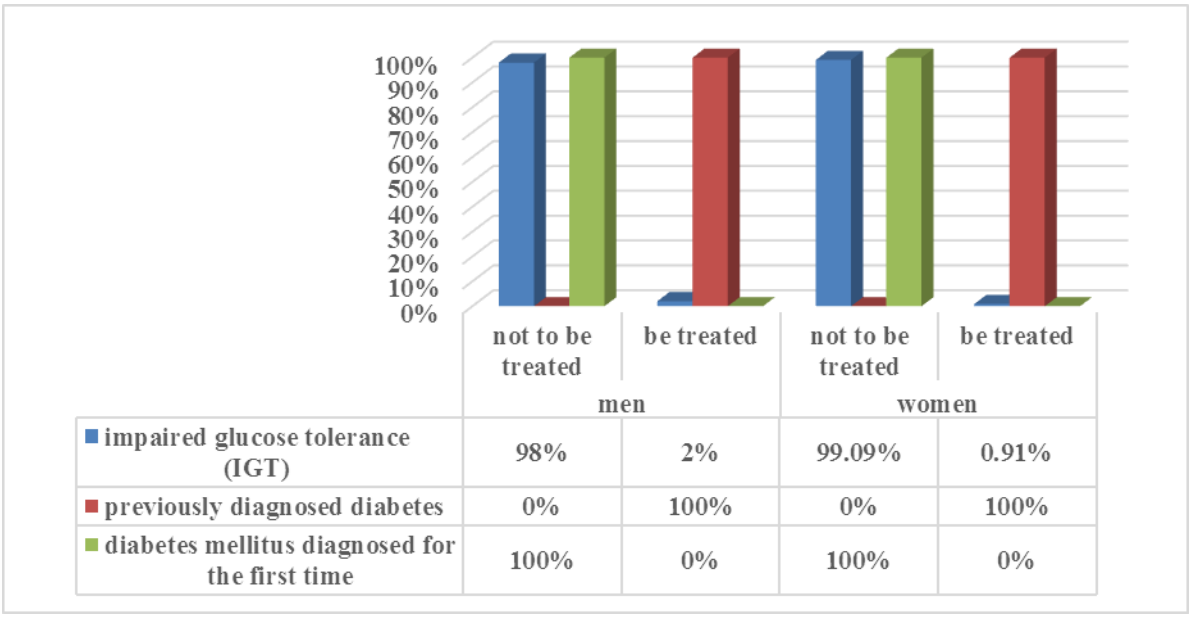
	men		women	
	not to be treated	be treated	not to be treated	be treated
overweight	98.80%	1.20%	97.37%	2.63%
obesity	100%	0%	92.08%	7.92%

Figure 3. Status of treatment coverage for obesity and BMI among women and men

A slightly different picture emerges for obesity treatment coverage. Obese women are 3 times more likely (7.92%) than overweight women to take treatment for weight loss. However, such treatment coverage among obese individuals cannot be considered not only sufficient, but also satisfactory. However, no obese man takes drug therapy for weight loss.

From the presented data, we can conclude that there is practically no fight against obesity and overweight in the population.

Considering that diabetes mellitus and impaired glucose tolerance (IGT) are the main components of the metabolic syndrome, the issue of drug treatment of these conditions has been of particular interest. According to the data obtained, there is an extremely unfavorable situation in terms of treatment coverage for IGT (Fig. 4). Less than one percent of women and only 2% of men with IGT receive drug therapy to lower their glycemic levels.



	men		women	
	not to be treated	be treated	not to be treated	be treated
impaired glucose tolerance (IGT)	98%	2%	99.09%	0.91%
previously diagnosed diabetes	0%	100%	0%	100%
diabetes mellitus diagnosed for the first time	100%	0%	100%	0%

Figure 4. Status of treatment coverage for diabetes mellitus and IGT among women and men

With regard to diabetes, everything is logical. All patients with previously diagnosed diabetes receive hypoglycemic therapy, and 100% of people with diabetes mellitus, diagnosed for the first time, do not receive any treatment.

The above treatment coverage rates assume drug therapy coverage. At the same time, in addition to drug therapy in the treatment of these diseases and pathological conditions, non-drug methods of prevention and treatment are also important.

Conclusions

1. The unorganized population is not sufficiently covered by treatment to correct the main components of the metabolic syndrome, such as hyperlipidemia, impaired glucose tolerance and overweight
2. In conditions of insufficient non-drug and pharmacological correction of MS components, a high risk of general mortality of the population is formed.

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