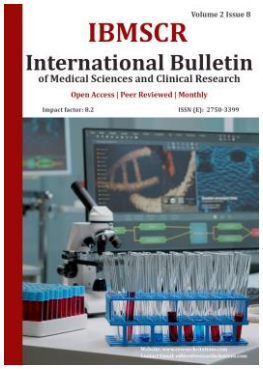

EFFICIENCY HYPOGLYCEMIC DRUGS IN COMBINED THERAPY OF HYPERTENSION WITH METABOLIC SYNDROME

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In recent years, metabolic syndrome (MS) has attracted increasing attention from doctors around the world, which is associated with its widespread prevalence, reaching 25-30% in the adult population, and increasing with age [1, 2, 7].

More than 70–80% of patients with type 2 diabetes experience premature disability and early death from cardiovascular complications. Increase in diastolic blood pressure for every 6 mm Hg . increases the risk of developing IHD by 25%, and the risk of developing stroke–by 40%.

The risk of developing coronary artery disease and stroke without type 2 diabetes increases by 2–3 times, renal failure by 15–20 times, blindness by 10–20 times, and gangrene by 20 times. When diabetes and arterial hypertension (AH) are combined, the risk of these complications increases by another 2–3 times, even with satisfactory compensation of carbohydrate metabolism [3].

The key element of MS that triggers pathological mechanisms of metabolic processes is insulin resistance [4, 8]. Insulin resistance, even before the development of clinical manifestations of diabetes mellitus and hypertension, leads to damage to the vascular wall. The stiffness of the vascular wall is a predictor of the development of arterial hypertension: with a decrease in the elasticity of the vascular wall by one standard deviation, the risk of developing arterial hypertension increases by 15%.

Normally, insulin, through the vascular wall receptor IRS-1, activates phosphatidylinositol 3-kinase, protein kinase B, which ultimately initiates endothelial NO synthase and leads to NO synthesis and, accordingly, vasodilation . On the other hand, insulin stimulates the synthesis of endothelin-1 through its effect on mitogen -activated protein kinase MAPK, i.e. causes vasoconstriction .

Thus, the effects of insulin on the endothelium create a balance between vasodilating , antithrombotic , and anti-inflammatory effects and vasoconstrictor , inflammatory, and thrombotic effects.

With insulin resistance, due to phosphorylation of IRS-1, NO synthesis decreases, i.e., the process of vasodilation is disrupted . At the same time, the vasoconstrictor effects of insulin are preserved. Thus, insulin resistance provokes an increase in the rigidity and stiffness of the vascular wall, which leads to the development of arterial hypertension [5, 6] .

of a superselective β-blocker in this group of patients, which is a donor of nitric oxide with a

drug from the biguanide group, is of interest. metformin , which reduces the degree of insulin resistance and has a positive effect on carbohydrate and lipid metabolism.

Purpose of the study: to study the clinical and biochemical effectiveness of the drug metformin in combination with a superselective β-blocker - nebivalol in the treatment of hypertensive patients with MS.

Methods and material: 145 men were examined, of which 105 were patients aged from 25 to 60 years with a duration of hypertension of 2-4.5 years. Body mass index in the group of the examined sick patients was more than 25.0 kg/m2, the average body weight was 93.6 kg. The study did not include patients with secondary hypertension, a history of strokes and heart attacks, respiratory, cardiac, hepatic and renal failure.

The control group of healthy individuals consisted of 40 men of the same age.

Patients were collected from family history, smoking status, alcohol consumption, and a survey about the characteristics of the course of hypertension and concomitant diseases.

Anthropometric data (height, weight, body mass index , waist circumference , hip circumference) were determined for all studied individuals . BMI was calculated using the - Ketlekak formula , body weight (kg) divided by height (m) squared.

According to the study, it is clear that the majority of patients suffered from stage II hypertension, among them 45 patients (42.85%) with a BMI of 25-30, and 24 patients (22.8%) with a BMI of more than 30. Grade 1 hypertension was observed in 14 (13.3%) patients with a BMI of 25-30, grade III hypertension in 7 (6.7%) patients in both cases, both with a BMI of 25-30 and with a BMI of more than 30.

, patients with a disease duration of 2-5 years prevailed . Thus, in 11 (10.47%) patients the duration of the disease was up to 2 years, in 59 (56.2%) - from 2 to 5 years, and in 35 (33.4%) patients - over 5 years.

Laboratory studies were carried out with venous blood serum taken in the morning on an empty stomach after a 12-hour fast. The blood lipid spectrum was determined: total cholesterol, α-lipoproteins, β-lipoproteins, triglycerides. The state of carbohydrate metabolism was determined by gender indicators: glycated hemoglobin , the level of basal blood insulin , etc. and glucose tolerance. After that, the patients were randomly divided into 2 groups (15 people each), which, against the background of a low-calorie diet, were taken for 3 months: Group 1 - a superselective β-blocker - nebivalol at a dose of 5-10 mg per day. Group 2 - metformin (the drug from the group of bi guanides) in a daily dose of 500 mg and nebivalol in a dose of 5 - 10 mg.

After a 3-month course of treatment, repeated instrumental and laboratory studies were performed. The effectiveness of treatment was assessed by the dynamics of clinical manifestations of the disease, blood pressure values using the Korotkov method, as well as biochemical blood parameters.

In group 1, it was possible to achieve a significant reduction in the level of SBP (daily, daytime and night - by 12.1, 13.0 and 8.0%, respectively) and DBP (by 13.2: 13.5 and 14.7%, respectively). No significant decrease in heart rate was obtained.

The absence in group 1 of the typical for nebulol therapy is significantly significant; the decrease in heart rate can be explained; for several reasons. Firstly, antipertensive therapy did not affect the severity of insulin resistance in this group of patients, and secondly, a decrease in blood pressure could itself cause a compensatory increase in heart rate, which was additionally stimulated by chronic hyperinsulinemia (the persistence of the latter at

night helps explain the absence of a decrease in blood pressure). changes in night heart rate, while during the day there is a tendency towards its decrease).

When analyzing biochemical results; In hormonal studies in group 1, no statistically significant differences were noted during the therapy.

In group 2, there was a significant decrease in blood insulin levels by 27.8%. glycated - hemoglobin by 13.8%. A decrease in the concentration of triglycerides by 18.1%, cholesterol by 12.1% and β-lipoproteins by 35%, an increase in the level of α-lipoproteins by 22%.

Conclusions **:** Thus , therapy with a drug of the biguanide group (metformin 500 mg/ day) in patients with metabolic syndrome is associated with a significant decrease in glycated hemoglobin and insulin in the blood, a significant, significant decrease in the level of cholesterol, triglycerides, β-lipoproteins and an increase in the concentration antiatherogenic α-lipoproteins, in contrast to the standard monotherapy for arterial hypertension with Corvitol .

The inclusion of medformin in the complex therapy of patients with metabolic syndrome leads to an additional more pronounced decrease in night-time values of systolic and diastolic blood pressure and heart rate and contributed to an improvement in the performance of the oral glucose tolerance test.

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