

diagnosed with grade I-III systemic hypertension. We evaluated general data, history of disease, physical examination, laboratory and instrumental results, including ECG and echocardiography.

**Results:** In the study group was observed the prevalence of women, the rate women: man being 1.9:1, with mean age  $59.3 \pm 0.02$ . General data indicated that most patients originate from urban areas – 19 (82.60%) versus 4(17.40%) from the village. Family history of hypertension was present in 2 (9%) patients. Among the cardiovascular risk factors were identified type II diabetes in 5(21.7%) and obesity in 5(21%) patients. The distribution according stages of hypertension demonstrated that most patients had stage II – 18 (78.2%), followed by 5 (21.8%) patients – stage III and only one patient had stage I of hypertension. Clinical spectrum of complains showed fatigue in 11, dyspnea – 16, reduced exercise tolerance and peripheral edema – 6 patients from study group. By NYHA classification predominated the III functional class – 14(60, 86%), followed by II class – 6 (26%) and only 3 (13, 04%) patients had I NYHA class. ACC/AHA stages of HF indicated that most of patients were included in stage C – 20 patients, 2 patients – stage A and only 1 patient had sage B of HF. Analyzing ECG was established left ventricular hypertrophy in 14 (56.6%). By echocardiography were appreciated concentric hypertrophy in 16 (69.6%), cardiomegaly was determined by dilatation of left atrium in 19 (82.6%) patients, left ventricle – 3(13.04%) and decreased EF <50% in only 4(17.39%) cases.

**Conclusion:** Patients with hypertension and clinical diagnosis of heart failure presented left ventricular hypertrophy and impaired diastolic filling without systolic dysfunction.

**Keywords:** hypertension, hypertensive heart disease, chronic heart failure

## 60. NEBIVOLOL TREATMENT INFLUENCE ON CARBOHYDRATE AND LIPID METABOLISM IN PATIENTS WITH METABOLIC SYNDROME

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**Introductoin:** Metabolic syndrome is a cluster of the most dangerous cardiovascular risk factors: diabetes mellitus, abdominal obesity, dyslipidemia and arterial hypertension. According to the International Diabetes Federation from 2006, about 25 % of the world's population presents the metabolic syndrome, with a two-fold higher risk of death, and three times more frequently myocardial infarction and/or cerebral stroke occurrence.

**Purpose of the study:** To assess the influence of Nebivolol 5 mg, on carbohydrate and lipid metabolism in patients with metabolic syndrome.

**Material and methods:** The metabolic syndrome diagnosis was established according to the criteria proposed in the recommendations of the International Diabetes Federation (2005). In our study were included 90 patients (divided into two groups: with metabolic syndrome - 45 patients and without metabolic syndrome - 45 patients), who received a third generation selective  $\beta$ -blocker with vasodilator action – Nebivolol, 5 mg/day. Indices of glucose metabolism, insulin resistance, lipids and apoproteins spectrum were evaluated initially and after 2 months of treatment with nebivolol.

**Results and discussions:** Comparative analysis of studied indices in patients according to the presence of metabolic syndrome after treatment with Nebivolol, revealed no changes in carbohydrates spectrum (basal glycemia, F. Caro index, HbA1c, glycated albumin, glycemic profile) in both groups. However, the monotherapy with Nebivolol 5 mg single dose daily for 2 months, was associated with significant reduction of total cholesterol in patients with metabolic syndrome ( $p < 0.01$ ) and no reduction of it in patients without metabolic syndrome ( $p > 0.05$ ).

Analysis of LDL cholesterol has proved essential reduction compared to the initial values in the group of metabolic syndrome patients ( $p < 0.05$ ) and their slight diminution in the group without metabolic syndrome ( $p > 0.05$ ). Similar changes were observed in the dynamics of triglycerides by important reducing of their level in patients with metabolic syndrome ( $p < 0.001$ ) and minor decrease in patients without metabolic syndrome ( $p > 0.05$ ). Regarding HDL cholesterol did not change

significantly in both groups. The atherogenic indices presented the following modifications: CoAt diminished in patients with metabolic syndrome ( $p < 0.001$ ) and had an unimportant change in patients without metabolic syndrome ( $p > 0.05$ ). Some changes were noted in the dynamic of total cholesterol/HDL cholesterol and LDL cholesterol/HDL cholesterol interaction. Thus, in patients with metabolic syndrome was observed the reduction of the ratio total cholesterol/HDL cholesterol ( $p < 0.001$ ), and of the ratio LDL cholesterol/HDL cholesterol ( $p < 0.01$ ), while in the group without metabolic syndrome was noted insignificant change in the ratio total cholesterol/HDL cholesterol ( $p > 0.05$ ) and the ratio LDL cholesterol/HDL cholesterol ( $p > 0.05$ ).

**Conclusions:** In patients with metabolic syndrome Nebivolol improved lipid status by significantly reducing the total cholesterol, the LDL cholesterol, and the triglycerides. The treatment with Nebivolol had low influence on carbohydrates metabolism.

**Key words:** Nebivolol, carbohydrate, lipid metabolism, metabolic syndrome

## 61. HYPERLEPTINEMIA AND LEPTINO-RESISTANCE IN PATIENTS WITH HYPERTENSION IN CASE OF METABOLIC SYNDROME

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**Introduction:** Metabolic syndrome (MS) is found in 20-25% of the population, in 15% of Europeans and in 23% of Americans. High blood pressure (HBP) is often associated with anthropometric and metabolic disorders, including abdominal obesity (AO), insulin resistance (IR), and other disorders of the MS. The effect of leptin on blood pressure (BP) indicates that leptin plays an important role in the BP control, it reflects the body fat mass (FM), which produces the leptin and is importantly increased in case of obesity. Hyperleptinemia (HL) may be associated with leptino-resistance (LR), usually in case of obesity.

**Purpose of the study:** The purpose of the research was to assess the role of leptin metabolism, hyperleptinemia and leptino-resistance in hypertensive patients in case of metabolic syndrome.

**Material and methods:** The study included 294 patients. The main criterion for selection was the HBP of I<sup>st</sup> and II<sup>nd</sup> degree. The selection of the groups of patients with and without MS for further investigations was carried out according to the classification criteria of the NCEP/ATP III (2005). Leptin concentration was determined by immunoenzymatic method. The normal blood levels of leptin in women – from 4.1 to 25 ng/ml, in males – from 1.2 to 9.5 ng/ml.

**Results and discussions:** The men's average leptin levels in the analyzed group were found to be significantly lower than in women ( $17.51 \pm 1.36$  ng/ml vs.  $29.33 \pm 2.14$  ng/ml,  $p < 0.001$ ). Spearman correlation analysis showed a direct dependence in both groups of patients between leptin levels and BMI (Body Mass Index). We also observed that leptin level is higher in MS patients, presenting in all cases IR and disturbance of insulin sensitivity of the tissues.

After determining the secretory activity of adipose tissue (AT) by leptin level, and after the investigation of basal insulin (BI) in patients with MS, we obtained: 1) hyperleptinemia - 83.3 % of patients (average concentration of leptin in women -  $41.58 \pm 5.12$  ng/ml, and in men -  $29.02 \pm 3.68$  ng/ml with normal values from 4.1 to 25 ng/ml), which suggests the presence of a pronounced LR in patients with MS and 2) basal hyperinsulinemia in 67 % of patients ( the average BI was  $18.12 \pm 4.03$  IV  $\mu$ UI/ml). All the patients (100%) presented an increased HOMA<sub>IR</sub> index (the average index was  $4.04 \pm 0.95$  conventional unities, normal values  $< 2.5$ ), which corresponds to an elevated IR in these patients. Therefore, the patients that were included in our study, in addition to the MS signs, manifested important changes of AT secretory activity with associated LR and IR.

The Spearman correlation analysis showed a statistically significant positive correlation between leptin level in patient with MS and body weight ( $r = 0.31$ ,  $p < 0.01$ ), abdominal circumference ( $r = 0.38$ ,  $p < 0.001$ ), and BMI ( $r = 0.69$ ,  $p < 0.0001$ ). These correlations can be related to the HL, with secondary increased body weight.

**Conclusions:** Leptin and hyperleptinemia are crucial factors in the various interactions of metabolic