ARTERIAL HYPERTENSION AND THYROID STATUS IN PATIENTS OF DIFFERENT AGES

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Abstract: *174 patients of different genders and ages with arterial hypertension were examined. Among women under the age of 54, the incidence of combination of arterial hypertension with diffuse changes in the structure of the thyroid gland was higher than among men of the same age group (64.1% and 47.1%, respectively). Among women in The age group after 54 years saw an increase in the frequency of thyroid echostructure disorders to 72.5%, among men this figure was 42.4%. The incidence of nodular goiter among women under the age of 54 was 10.3%, after 54 years – 23.5%; among men - 5.9 and 6.1%, respectively. In the age groups up to 54 years, the frequency of hormonal signs of hypothyroidism among women with diffuse thyroid changes was 32.0 %, among men – 16.7%; in the groups after 54 years, these figures were 21.6 and 21.4%, respectively. A decrease in the functional activity of the thyroid gland in individuals with its diffuse changes led to an increase in the frequency and severity of cardiovascular pathology.*

Keywords: *arterial hypertension, thyroid status, gender and age of patients*

INTRODUCTION

In recent years, there has been a steady increase in the number of diseases of the cardiovascular system. First of all, this applies to arterial hypertension (AH) and its complications. Epidemiological studies have provided data confirming the effect of hypertension on the incidence of atherosclerosis and associated coronary artery disease, the occurrence of coronary heart disease and heart failure. The main risk factors for hypertension include age, smoking, hypercholesterolemia and dyslipidemia, and a family history of early cardiovascular disease diseases, abdominal obesity, etc. Information has

also been obtained on the aggravating role of disorders of the functional state of the pituitary-thyroid system in the development and progression AH. Parameters such as cardiac output, heart rate, and total peripheral vascular resistance depend to a certain extent on the function of the thyroid gland. A decrease in the level of thyroid hormones in the body contributes to the development of atherosclerosis, sodium and water retention in the body, accumulation of proteoglycans and glycoproteins, swelling of the vascular wall, impaired endothelial function, which eventually leads to an increase in blood pressure (BP). Against the background of latent, erased forms of thyroid pathology, in which the symptoms of endocrine disease may be unexpressed, and elevated blood pressure comes first, hypotensive therapy often has only short-term success due to uncorrected subclinical hypo- or hyperthyroidism (thyroid gland). With thyroid dysfunction in combination with hypertension, other concomitant somatic diseases, usually chronic, worsen or form. Considering the information that the frequency of pathology Thyroid gland among therapeutic patients is growing and has increased more than 9 times in recent years, the study of the structure and function of thyroid gland in patients with cardiovascular diseases is relevant. The purpose of this work is to study the features of the functional state of the pituitary-thyroid system and the echostructure of the thyroid gland in patients with arterial hypertension, depending on gender and age.

MATERIALS AND METHODS OF RESEARCH

174 patients of the therapeutic clinic with hypertension of II, III degrees were examined, among whom there were 90 women and 84 men aged 24 to 66 years. All the examined persons gave informed consent to participate in the study, which meets ethical standards, and the general condition of all patients upon admission was regarded as relatively satisfactory. Patients with arterial hypertension syndrome were not included in the study. hypertension, in which the increase in blood pressure was secondary, as well as patients with severe concomitant pathology (acute myocardial infarctions, heart defects, rhythm disturbances, bronchial asthma, diabetes mellitus). All patients received basic antihypertensive therapy from the first day of hospitalization. The median age of the examined individuals was 54 years, on the basis of which all patients – men and women - were divided by age into two groups: before 54 and after 54 years. Ultrasound of the heart revealed signs characterizing the severity of hypertension: hypertrophy of the left ventricle (LV), hypertrophy of the interventricular septum (MP), dilation of cavities, diastolic dysfunction. The determination of hormones of the pituitary-thyroid system in blood serum was carried out by the radioimmune method using commercial kits: - thyroid-stimulating hormone (TSH): RIA TSH / CIS bio international, regulatory values 0.25-4.0 μed/ml; - thyroxine (T4): RIA-gnost T4 /CIC bio international, regulatory values 58-142 nmol/L; - free T4: RIA-gnost FT4 /CIC bio international, standard values 9.0-

23.2 pmol/L; - triiodothyronine (T3): RIA-gnost T3 /CIC bio international, regulatory values 0.9-2.9 nmol/L; - free T3: RIA-gnost FT3 /CIC bio international, regulatory values 3.1-6.5 pmol/L.

THE RESULTS AND THEIR DISCUSSION

The ratio of women and men in the age groups of patients with hypertension before 54 years was 43.3 and 56.7%, and after 54 years – 60.7 and 39.3%, respectively ($p<0.05$). Consequently, in the age group up to 54 years, hypertension was more often registered in men than in women, and in the age group after 54 years, on the contrary,it was detected more frequently in women than in men, which is consistent with the literature data. Among women under the age of 54, the incidence of combination of hypertensionwith diabetes was higher than in men of the same age group (64.1 and 47.1 % accordingly). After the age of 54, an increase in the frequency of thyroid echostructure disorders was noted among women to

72.5%; in men, this figure was 42.4%. In the age groups up to 54 years, in women with hypertension, the thyroid volume was 6.49±0.15 ml, with hypertension and pancreas – 6.51±0.25 ml, in men, the values of this indicator were 7.25± 0.12 and 7.31± 0.16 ml, respectively. In the age groups after 54 years, in women with hypertension, the volume of thyroid was 6.54± 0.16 ml, with hypertension and pancreas – 7.04± 0.2 ml, in men, the values of this indicator were 7.10±0.13 and 7.27± 0.20 ml, respectively. There were no cases of excess of the thyroid gland volume above the standard values (more than 18 ml for women and 25 ml for

men). On the contrary, rather low volume values attract attention Thyroid in the examined patients. In people with dysphoria in the age groups up to 54 years, among women, the ratio of frequencies of UNO and NO structure of thyroid was 32.0 and 68.0%, among men - 58.3 and 41.7%; in the age groups after 54 age among women - 40.5 and 59.5%, among men – 35.7 and 64.3%, respectively. The incidence of ultrasound among women under the age of 54 was 10.3 %, after 54 years – 23.5%; among men under the age of 54 – 5.9%, after 54 years – 6.1%.

Thus, the frequency of ultrasound increased by more than 2 times among women with increasing age, and the frequency of cases of thyroid disorders increased by 1.5 times among men with diabetes. Among the examined women with hypertension and diabetes in both age groups were those who took L-thyroxine (3 people in each group). Data on the serum levels of thyroid hormones and TSH in these women were not used to calculate the average values of these indicators for

groups. The heterogeneous echostructure of the thyroid gland is a sign of tissue restructuring of the organ in response to pathological iodine deficiency or to the effects of

others . strumogens (food or ecopathogens). Inflammatory foci can also be visualized in the form of hypoechoic inclusions in the thyroid gland at the initial

stages of the formation of the autoimmune process. At the same time, all intermediate types of thyroid echostructure that do not correspond to the description of a completely homogeneous structure of thyroid tissue, according to experts, are a visual reflection of various thyroid pathology. Received in the work

The results indicate a high incidence of dysphoria among the examined patients with hypertension, not only women (68.9%), but also men (45.2%), which suggests a high prevalence of thyroid pathology among the population of Siberian territories, in which dysphoria, nodular forms of goiter and hypothyroidism occupy a significant place. What are the reasons for this phenomenon? As is known, one of the main reasons is iodine deficiency, but the data obtained in recent years indicate

that as a result of government decisions At the level of measures for the prevention of iodine deficiency conditions, the provision of iodine to the Uzbek population has become more adequate. However, a rapid transition from iodine deficiency to increased iodine intake may adversely affect the structure and function of the thyroid gland. Structural changes in Thyroid can also be formed under the action of other specific and non-specific strumogens that damage the thyroid tissue and disrupt its function. Since disorders of the echostructure of thyroid tissue are a reflection of the emerging pathology of the thyroid gland, there is a high incidence among patients with dysphoria the frequency of hormonal signs of hypothyroidism, it can be argued that in patients with hypertension and hypertension, the risk of severe cardiovascular pathology is higher than in patients with hypertension in combination with normal thyroid structure and function.

CONCLUSIONS:

It has been shown that even hypothyroidism itself can cause hypertension, which in some patients is reversible against the background of levothyroxine replacement therapy. It is known that the prevalence of thyroid pathology among women is several times higher than among men. In the study, the ratioof the incidence of the among men and women with hypertension turned out to be 1 : 1.5. Consequently, the frequency of thyroid pathology among men is increasing, and this allows to say that they have an increased risk of developing a more severe course of diseases of the cardiovascular system due to an increase in the frequency of disorders of the structure and function of the thyroid gland.

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