

## THE IMPACT OF ARTERIAL HYPERTENSION ON THE ONSET OF STRUCTURAL AND FUNCTIONAL CHANGES OF THE HEART ASSOCIATED WITH GRAVES DISEASE

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The aim of the study was to study the role of hypertension in the occurrence of thyrotoxic changes in the heart and their regression against the background of long-term drug therapy.

Material and research methods. 62 patients with DTG were examined after long-term thyreostatic therapy. The diagnosis of DTG was verified by the correspondence of clinical data to changes in the level of TH (TTH, T4f, T3f) and ultrasound examination of the thyroid gland. For various reasons, all patients did not undergo radical treatment within the established timeframe (12-18 months), but continued conservative therapy with thiamazole for more than 2 years. The examined group included 53 (85.5%) women and 9 (14.5%) men, mean age was  $39.9 \pm 1.3$  years. All patients underwent echocardiography in the first year after the disease was diagnosed and after the completion of drug therapy according to the standard protocol (on average, after  $3.2 \pm 0.2$  years).

Indicators for which significant differences were obtained ( $p < 0.05$ ): LVMM (left ventricular myocardial mass), LVMI (left ventricular myocardial mass index), LVEDV (left ventricular end-diastolic size), LVEDV (left ventricular end-diastolic volume), TIVS and ExTIVS (thickness of the interventricular septum and its excursion), TPLV (thickness of the posterior wall of the left ventricle). The data were compared by groups, taking into account the presence or absence of AH. Mean values (M) and standard deviation (m) were calculated. A paired test was used to assess the dynamics of indicators. The critical level of significance in testing hypotheses is  $p < 0.05$ .

Results of the study and their discussion. All patients were divided into 4 groups according to the presence or absence of hypertension at the onset of the disease and after treatment: group 1 - there was no hypertension at the onset and not after treatment - 24 patients; group 2 - AH was not at the onset, but was detected after treatment - 17 patients; group 3 - AH was detected at the onset and it persisted after treatment - 20 patients; Group 4 - AH was observed at the onset, but was not detected after treatment - 1 patient. 6 patients (9.6%) reported a periodic increase in blood pressure before the onset of DTG.

In groups with AH and normal BP, there were significant differences in age, respectively  $45.7 \pm 1.05$  and  $32.4 \pm 1.62$  years ( $p = 0.006$ ). Next, we evaluated the main EchoCG parameters at the onset of the disease in patients with hypertension and with normal blood pressure (groups 1 and 3), given that in the first year of the disease, the patient's heart was affected by overt thyrotoxicosis before the start of therapy.

Comparing the data, we can conclude that arterial hypertension and thyrotoxicosis had a similar effect on the myocardium, but in patients with hypertension, there was an increase in EDV, the lumen of the aortic root, and the size of the left atrium. A decrease in ExVZHP within the normal range was found only in patients with normal blood pressure.

In this case, a moderate decrease in ExTIVS without signs of pronounced hypertrophy and a decrease in ExZLV should probably be considered a consequence of the elimination of myocardial hyperfunction against the background of thyrotoxicosis. An increase in LVML was found both in patients with AH and with normal pressure, but it was more significant in patients with AH. Signs of myocardial hypertrophy were detected in patients already in the first year of the disease.

Thus, with long-term thyrostatic treatment of DTG, there was no reverse development of myocardial hypertrophy and dilatation of the heart cavities. Tendencies towards an increase in LVMM were observed in all patients with continuous thyreostatic therapy. In the development of thyrotoxic changes in the myocardium, an important role was played by disorders that occurred before the start of treatment, as well as concomitant hypertension. Hypertension in thyrotoxicosis should be actively detected and corrected throughout the entire period of treatment.

