UDC 616.127:616.12-005.4

FEATURES OF THE MYOCARDIUM REMODELING IN PATIENTS WITH HYPOTHYROIDISM, CORONARY HEART DISEASE AND PROVIDED COMORBIDITY

MD, PhD, prof. Bobyrova L., Horodynska O.

Ukrainian Medical Stomatological Academy, Poltava

Introduction. In modern medical science the thyroid gland dysfunction is one of the risk factors for cardiovascular disease. Many studies, devoted to the mechanisms of the influence of reduced function of the thyroid gland on the cardiovascular system, have been organized. Slight disorders of the thyroid function may be accompanied by an increasing of cardiometabolic risk This leads to the search for additional influence on the pathogenetic mechanisms of the hypothyroidism in order to treat effectively these threatening manifestations and consequences of the disease.

Objective. To study features of myocardial remodeling in patients with hypothyroidism, coronary heart disease and in terms of combined pathology.

Materials and Methods. 160 patients aged from 38 to 82 years were examined, who were treated in the endocrinological and cardiology departments of Poltava Regional Hospital named after MV Sklifosovsky. The patients were divided into 3 groups: Group I - patients with hypothyroidism (n=61), disease duration 7,87±1,98 years, group II - patients with coronary heart disease (n=47), disease duration 9,83±2,42 years, group III - patients with hypothyroidism in combination with coronary heart disease (n=32), disease duration 11,31±3,09 years, 20 persons - control group.

The diagnosis of the disease was verified on the basis of clinical manifestations of the disease, data from generally clinical, biochemical, instrumental research methods. The data processed by variation statistics using the program «Microsoft

Excel». The difference was considered significant at $p<0.05$.

Results. Structural and functional status of the myocardium was determined using the mean values of Echocardiograms of intracardiac hemodynamics in the examined patients and healthy people. The calculation of the left ventricular myocardial mass index showed a significant increase in the group of patients with hypothyroidism 104,04 ± 10,89 g/m^2 ($p<0,05$). The relative thickness of the wall of the left ventricle is also characterized by a significant increase with decreased thyroid function to 0,41 ± 0,05 cm ($p<0,05$), compared with the group of healthy individuals. The index of the mass of the left ventricular myocardium in group of patients with coronary heart disease is 128,25 ± 5,19 g/m^2 ($p<0,05$), the relative wall thickness of the left ventricle is also characterized by a significant increase up to 0,47 ± 0,05 cm ($p<0,05$), compared with the group of healthy individuals. The left ventricular myocardial mass index was significantly increased in the group of patients with hypothyroidism in combination with coronary heart disease – 120,4 ± 5,0 g/m^2 ($p<0,05$), the relative thickness of the left ventricular wall was significantly increased with decreased thyroid function to 0,42 ± 0,07 cm ($p<0,05$), compared with the healthy subjects group.

According to the indexes of the mass of the myocardium and the relative thickness of the wall of the myocardium of the left ventricle were determined types of geometry of the heart. In patients with hypothyroidism, the following types of heart geometry were established: 38 people (46,92%) had normal heart geometry, 31 people (38,27%) had eccentric hypertrophy, and 11 people (13.58%) had concentric hypertrophy. and 1 person (1,23%) had concentric remodeling. In patients with coronary heart disease: in 13 people (19,4%) - normal geometry of the heart, in 13 people (19,4%) - eccentric hypertrophy, in 38 people (56,7%) - concentric hypertrophy and in 3 people (4,5%) - concentric remodeling. In patients with hypothyroidism in combination with coronary artery disease: 6 people (10,7%) have normal heart geometry, 30 people (63,8%) have eccentric hypertrophy, 10 people (21,3%) have concentric hypertrophy and in 2 people (4,2%) - concentric remodeling.

Conclusion. The data obtained indicate that in patients with hypothyroidism and with combined pathology marked thickening of the walls of the myocardium of the left ventricle, leading to the development of eccentric hypertrophy of the left ventricular myocardium. In patients with coronary heart disease on the background of disorders of central hemodynamics, the development of concentric hypertrophy of the left ventricle is noted. Thus, the presence of a patient with eccentric left ventricular myocardial hypertrophy can be considered a marker of "hypothyroid" heart, which can determine the severity of hypothyroidism.

Відомості про авторів

Бобирьова Людмила Єгорівна – доктор мед. наук, професор, Українська медична стоматологічна академія, завідувач кафедри ендокринології з дитячими інфекційними хворобами, телефон: +380955614138, e-mail: bobyreva@ua.fm.

Городинська Олена Юріївна – Українська медична стоматологічна академія, асистент кафедр внутрішньої медицини №1, тел. +380668423022, e-mail: lena.gorodinskaya@gmail.com