

THYROID DYSFUNCTION ATHEROSCLEROSIS**Saidullayev Toirjon**Head of the Department of Medical Biology and
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Abstract:Subclinical hypothyroidism (SH) is a common occurrence in the elderly population. Even a slight thyroid dysfunction can contribute to the advancement of heart ischemic disease. The findings from coronary angiography (CG) indicate the presence of significant coronary atherosclerosis. Therefore, it is crucial to compare the CG results with the TSH levels of patients with heart ischemic disease.

Keywords:Subclinical hypothyroidism, treatment, method, ischemic heart disease.

INTRODUCTION:In recent years, much attention has been paid in the medical literature to thyroid dysfunction in patients with coronary heart disease (CHD).

It has been established that thyroid hormones regulate the most important stages of all metabolic processes in the body. The effects of thyroid hormones in myocardial cells and the vascular wall have been well studied [1–3]. It is known that triiodothyronine (T3) regulates gene expression and Ca-ATPase activity of the sarcoplasmic reticulum of myocytes and vascular smooth muscle cells, mediates the processes of contraction and relaxation of the heart muscle, and affects peripheral vascular resistance. Thyroid hormones also regulate the expression of genes for myocardial structural proteins [4].

MATERIALS AND METHODS:To assess the functional state of the thyroid gland, the level of thyroid-stimulating hormone of the pituitary gland (TSH) in the serum of patients is determined. A decrease in TSH level indicates thyrotoxicosis, and an increase in TSH concentration indicates the presence of hypothyroidism in the patient. Subclinical dysfunction of the thyroid gland is understood as a deviation from the norm in the level of TSH with normal values of T3 and T4. Thus, in subclinical hypothyroidism, TSH is increased to 1–12 mIU/l, and the level of free thyroxine remains within normal limits.

The study included 863 patients with coronary artery disease.

All patients underwent coronary angiography according to the method of M. Judkins et al. (1993) with diagnostic catheters 7F (USCI Cordis). A contrast agent (Omnipaque) was injected in an amount of 5 to 10 ml into the coronary arteries. The coronary arteries were photographed at a frequency of 25 frames per second using a HICOR digital installation (Siemens, Germany). The gender, age of patients, the presence of arterial hypertension and diabetes mellitus were taken into account. Anamnesis was studied regarding heredity, smoking, and the number of heart attacks. Body mass index (BMI) was calculated using the formula: weight (kg)/height (m²). To assess the functional state of the thyroid gland, the TSH level was determined in 451 patients using enzyme immunoassay using 3rd generation reagents.

RESULTS AND DISCUSSION:In the group of examined patients with coronary artery disease, there were 77.6% men and 22.4% women. The average age of the patients was 56.85±0.29 years. The groups of examined men and women differed significantly in a number of clinical signs. The groups of men and women were comparable in age. As can be seen from the presented data, women had a significantly higher BMI and TSH level; in addition, women had less smoking experience and the number of cigarettes smoked per day.

The groups of men and women also differed in the incidence of hemodynamically significant stenoses of the main coronary arteries (Table 1). The presented results indicate clear differences in

the incidence of hemodynamically significant stenoses between men and women. In the group of examined men and women of comparable age, the frequency and degree of damage to the coronary vessels differed significantly: in men, hemodynamically significant stenoses were detected significantly more often and the degree of vascular narrowing was significantly greater.

Table 1

Occurrence (in%) of hemodynamically significant stenoses in men and women with coronary artery disease

Vessel (artery basin)	Men (n = 664)	Women (n = 195)	p
LKA barrel	17,8	9,2	0,005
permanent residence	77,1	54,9	0,000
OB	61,0	38,0	0,000
PKA	64,6	43,6	0,028

We identified positive correlations between such an indicator as stenosis of the main coronary arteries and a number of factors: smoking, gender, age, history of myocardial infarction, arterial hypertension and diabetes mellitus. Damage to the main coronary arteries was more often detected in men than in women ($p < 0.0001$), depending on age ($r = 0.2$; $p = 0.000$). In addition, in smoking patients, lesions of the main coronary arteries were detected more often than in non-smokers ($p = 0.0000$).

In patients with a TSH level greater than 4.0 mIU/l (i.e., in patients with subclinical hypothyroidism), multivessel lesions of the coronary arteries were observed significantly more often than in patients with a normal TSH value ($p < 0.04$).

Among the examined men, 74.3% of patients had suffered an MI, and among women, 42.6% had a history of MI. Patients with diabetes mellitus and hypertension mostly had multi-vessel lesions of the coronary arteries ($p=0.02$ and $p=0.008$, respectively).

CONCLUSION:As the TSH level increased, the incidence of lesions of the main trunk of the left coronary artery and multivessel lesions of the coronary bed increased. In this regard, it seems advisable to determine the level of thyroid-stimulating hormone of the pituitary gland in all patients with coronary heart disease.

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