Unfortunately, many production processes are still imperfect, and in some enterprises the concentration of dust, smoke, vapors and gases is not yet possible to significantly reduce.

Can we assume that every person who coughs for a long time, allocates sputum and notes shortness of breath, is sick with chronic bronchitis? No, no. Cough may occur not only as a result of irritation of the bronchi smoke, steam, gases, various microbes, but also as a result of the development of other diseases. Bronchi, which were in the focus of inflammation or malignant neoplasm, also involved in the process. The so-called chronic segmental bronchitis develops. So, any specific, characteristic only for chronic bronchitis signs do not exist. Despite this, the disease is diagnosed relatively easily. But sometimes, to say with full confidence that the patient has chronic bronchitis, the doctor has to conduct several diagnostic tests [2].

BIBLIOGRAPHY

1. *Potabshiy, V. A.* Systemic arterial hypertension and chronic obstructive bronchitis / V. A. Potabshiy.– Kyiv: Ministry of health of the USSR, Kiev state Institute of advanced medical 1990. – P. 21.

2. *Shershen, G. A.* Chronic bronchitis / G. A. Shershen. – Moscow: Medicine, 1984. – P. 17.

CHARACTERISTICS OF CORRECTION METHODS OF THE FUNCTION OF THE THYROID SYSTEM IN THE PATHOLOGY OF THE THYROID GLAND

T. Laptsinskaya

Belarusian State University, ISEI BSU,
Minsk, Republic of Belarus
tanya.shman@mail.ru

An analysis was made of the results of treatment of thyrotoxicosis, hypothyroidism and autoimmune thyroiditis by various methods. The most effective treatment regimens for these pathologies have been identified.

Keywords: incidence, hypothyroidism, hyperthyroidism, autoimmune thyroiditis, causes of onset, symptomatology.

Currently, thyroid disorders are one of the most common in the world. The incidence continues to grow, due to various factors, among which the most important are iodine deficiency, high radiation background and environmental pollution, therefore the pathologies of the thyroid system require special attention not only from medicine but also from ecology.

To solve the problem of evaluating the effectiveness of treatment of thyroid pathologies were used data on the determination by the immune-enzyme methods of blood free thyroxine (T4cv.), Thyroid-stimulating hormone and antibodies to thyreperoxidase.

In the treatment of thyrotoxicosis the following medicamental methods were used: after detection of pathology, patients were prescribed the drug "Mercazolil", which blocked the production of thyroid hormones in the thyroid gland, then surgical intervention was carried out, after that the patients were transferred to lifelong replacement therapy with "Eutirox" with synthetic analogue T4 thyroid hormone glands. With an increase in the dosage of the drug "Merkazolil" from 30 mcg to 100 mcg, the formation and secretion of thyroid-stimulating hormone into the blood and the decrease in the blood content (T4cv) were observed.

Based on the data obtained, it can be concluded that the treatment of diffuse toxic goiter through surgical intervention and lifelong replacement therapy with thyroid hormones demonstrates positive dynamics, has a high therapeutic effect and positively affects the health status of the patients under study.

The drug approach to the treatment of hypothyroidism is the replacement of the thyroid hormone deficiency to normal with synthetic medicinal analogues of T4 with preparations of "Eutirox" or "L-thyroxine". Analyzing the obtained data it should be noted that the treatment of hypothyroidism differs from the temporary hypothyroidism of the thyroid gland developing after resection to achieve a positive therapeutic effect. There were significant differences in the blood levels of thyroid hormones in patients after changing the dosage of the drug. With an increase in the dose of "L-thyroxine" from 100 mcg to 150 mcg, there was a pronounced increase in the thyroid-stimulating hormone content in blood and an increase in the blood T4cv content.

At the beginning of the development of chronic autoimmune thyroiditis, at the stage of manifestation of hyperthyroidism, drug therapy is not indicated because of its destructive nature and short duration of 1 to 6 months. At the stage of hypothyroidism, hormone replacement therapy with Eutirox and L-thyroxine is used, which, as a rule, is life-long.

The results obtained suggest that substitution therapy with thyroid hormones in the treatment of autoimmune thyroiditis has a significant effect on the improvement of indicators and stabilization of patients' health status. This method of treatment allowed to regulate thyroid hormone levels in the blood to physiological parameters and to lower the antibodies to thyroperoxidase level to a minimum level. When 50 μg of the drug "L-thyroxine" was taken, antibodies to thyroperoxidase were present in the blood, with an increase in the dose of up to 75 μg of these antibodies in the blood was not detected.

BIBLIOGRAPHY

1. *Валдина, Е. А.* Заболевания щитовидной железы / Е. А. Валдина – СПб.: Питер, 2006. –154 с.
2. *Волкова, Н. И.* Щитовидная железа / И. И. Волкова. – Эксмо-Пресс, 2016. – 128 с.

MITOGEN-INDUCED PROLIFERATION OF MEMORY T-CELLS IN PATIENTS WITH MULTIPLE SCLEROSIS AND PARKINSON'S DISEASE

N. Liaukouskaya[1], D. Nizheharodava[1,2], A. Boika[2], V. Ponomarev[2], M. Zafranskaya[1,2]

[1]Belarusian State University, ISEI BSU,
Minsk, Republic of Belarus
[2]Belarusian Medical Academy of Post-Graduate Education,
Minsk, Republic of Belarus
anastasiya.levkovskaya@inbox.ru

There have been active studies of memory T-cells and their subsets to determine the properties, functional activity and role in maintaining of autoimmune and neurodegenerative reactions in humans.

Keywords: Parkinson's disease, multiple sclerosis, neurodegeneration, neuroinflammation, memory T-cells, central nervous system.

Neurodegenerative diseases (NDD) are a group of the nervous system diseases characterized by neuronal loss that leads to severe neurological symptoms [1].Two most common NDD are the Parkinson's disease (PD), a progressing disease, characterized by the destruction and death of dopaminergic neurons; and multiple sclerosis (MS), a demyelinating disease driven by autoimmune inflammation [2]. In the formation of neurodegeneration the key role belongs to neuroinflammation and adaptive immune reactions, including memory T-cells, study the functions of which may lead to understanding of diseases' pathogenesis.

The aim. To characterize the functional potential of memory T-cells subsets in patients with MS and PD.

Materials and methods. The material was whole peripheral venous blood obtained from 21 MS patients (10 men and 11 women, 29.5 [23.0 ÷ 33.0] y.o.), 6PDpatients(4 men and 2 women, 61.2 [57.0 ÷ 65.0] y.o.) and 14 healthy donors (8 men and 6 women, 29.0 [24.0 ÷ 45.0] y.o.). The level of disability on EDSS scale in MS patients was 3.0 [2.0 ÷ 3.5]scoresand on the Hoehn and Yahr scale in PD patients – 2.5 [2.0 ÷ 3.0] scores. The proliferation of T-cells subpopulations was determined by flow cytometrymethod using monoclonal antibodies CD3-PC7, CD4-PC5, CD8-FITC, CD45RO-ECD, CCR7-PE and flow cytometer CytomicsFC500. Mitogen-induced proliferation of lymphocytes was assessed using CFSE-method and 2.5 μg/ml of phytohemagglutinin (PHA).The main subpopulations of memory T-cells were identified as central memory $CD3^+CCR7^+CD45RO^+$T-cells(TCM), effector memory $CD3^+CCR7^-CD45RO^+$T-cells (TEM) and terminally differentiated memory effector $CD3^+CCR7^-CD45RO^-$T-cells (TEMRA). Statistical processing of data was carried out using the standard Statistica8.0.

Results. MS and PD patients showed a tendency to increase the number of memory T-cells in peripheral blood compared to the control group ($p<0.05$), while the total number of $CD3^+$T-cells and their major subsets did not change statistically. In both groups the relative amount of TEM was increased compared to ones in healthy donors ($p<0.05$). Moreover, the number of TEM exceeded TCM count in MS patients(18.9 (13.3÷22.8)*vs* 14.7 (11.8÷25.1))as well as in PD patients(17.4 (13.1÷22.2)*vs* 14.8 (8.5÷22.6)), while in the group of healthy donors a subpopulation of TCM was prevailed ($p<0.05$)(12.6 (7.2÷20.3) TEM *vs* 19.2 (13.4÷26.0) TCM).After 6 days of cultivation the up-regulation of spontaneous and PHA-stimulated TEM (8.0 (6.1÷13.2) vs. 59.2 (55.2÷63.4)and TEMRA (5.9 (4.9÷7.2) vs. 65.9 (46.8÷84.6))proliferation were established in PD patients– mainly due to $CD4^+$ and to a less extent of $CD8^+$T-cells subsets ($p<0.05$) as well as in MS patients (25.6 (15.6÷35.7) *vs*89.3 (88.0÷90.5) TEM and 32.3 (23.5÷41.2) *vs*90.0 (89.3÷90.75) TEMRA) – conversely due to $CD8^+$ and to a less extent of $CD4^+$T-cells subsets ($p<0.05$) compared to healthy donors in which the basic composition wasdetermined by TCM.Moreover, in NDD patients the tendency in differentiation of memory T-cells toTEMRA was registered.