



IDENTIFICATION OF THE MAIN REASONS AND EVALUATION OF APPLICATION EFFECTIVENESS OF PHYTO- AND VITAMIN THERAPY IN THE COMPLEX TREATMENT OF ENDEMIC GOITER

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ABSTRACT: Identification of the main causes of the development of endemic goiter, based on literature data and assessment of the effectiveness of measures based on phyto- and vitamin therapy for this pathology.

KEYWORDS: phyto and vitamin therapy, treatment, endemic goiter.

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RELEVANCE

Endemic goiter all over the world, including in the Republic of Uzbekistan, is an urgent problem. According to the World Health Organization, more than 2 billion people on the Earth live in iodine-deficient regions, 740 million people have endemic goiter, more than 43 million people worldwide are mentally retarded, as a result of which endemic goiter is "one of the most common human disasters" [1, 2, 10, 11]. Due to iodine deficiency, 1.5 billion people on Earth have a risk of developing iodine deficiency diseases (IDD) [3, 4, 7, 15]. Solving global problems associated with iodine deficiency requires identifying the main risk factors leading to the development of endemic goiter and the development of more effective methods of therapy, which is actual in medicine.

THE PURPOSE OF THE RESEARCH

Identification of the main causes of the development of endemic goiter, based on literature data and assessment of the effectiveness of measures based on phyto- and vitamin therapy for this pathology.

ANALYSIS OF LITERATURE DATA

Insufficient intake of iodine in organism of children and adolescents leads to the violations of the structure and function of the thyroid gland (TG), insufficient production of TG hormones without which adequate growth and development of the body is impossible [5,7,12].

Among the main reasons for the development of this disease, most patients consider early transferred stress. Indeed, in recent years one can not protect him/herself from stress. One should not get used to traumatic stressful situations because every time the body goes astray with the habit of work, adjusting to changing conditions. It should be noted that the functioning of the endocrine glands is particularly affected, which can subsequently cause the development of endemic goiter [4,6,14,16].

With endemic goiter, there is also a lack of vitamins that stimulate chemical reactions and are actively involved in the formation and functioning of enzymes that normalize cell growth and the development of the whole organism.

However, living conditions, nutrition, environmental factors, acute and chronic diseases of organs and systems, especially the pathology of the gastrointestinal tract (GIT), lead to the deficiency of these substances and disruption of assimilation processes.

Thus, a lack of vitamins leads to metabolic disorders, a decrease in physical and mental performance, and rapid fatigability of the body, negatively affect to the growth and development. Due to the lack of vitamins, the ability of the immune system to withstand the influence of pathogenic factors and the adverse effects of the environment decreases [1,8,13,17].

Diseases of the gastrointestinal tract are also directly related to thyroid diseases, since iodine is absorbed in the intestine [1,3]. In diseases of the intestine, the absorption of iodine is usually impaired. As a result of this, the body lacks nutrients, vitamins, mineral salts, including iodine. In children with intestinal absorption, despite the regular intake of an iodine-containing drug, it is not possible to significantly increase the iodine saturation of the body [3,5,9,18].

Selenium, zinc, calcium, cobalt, molybdenum, bromine, copper, lithium, lead, and mercury and chromium play an important role in iodine metabolism. Selenium is an integral part of the enzyme - iodothyronine defodinase, responsible for the conversion of T4 to T3 in the liver and kidneys and its deficiency is accompanied by incomplete iodine metabolism.

Trace elements are involved in such important biochemical processes as redox reactions, free radical oxidation, protein synthesis, tissue differentiation and growth, interaction with nucleic acids and their monomers [7, 10, 17].

There are numerous reciprocal positive relationships between trace elements and vitamins. For example, vitamin D is needed to absorb calcium, and vitamins A and C contribute to better absorption of iron. Pyridoxine to a greater extent than other vitamins is able to be synthesized by intestinal microflora. This synthesis is impaired with intestinal infections and other diseases of the gastrointestinal tract, as well as with prolonged use of broad-spectrum antibiotics and sulfonamides [8,11].

In the regions with endemic goiter, the low efficiency of iodotherapy in conditions of iron deficiency has been proved, which is explained by the participation of iron in the conversion of L-phenylalanine to L-tyrosine. At the same time, there is a positive dynamics in patients with hypothyroidism during therapy with vitamin A [6,8]. Inadequate nutrition, especially a decrease in the vitamin A content in food, leads to the violation of the structure of thyroglobulin and, accordingly, the synthesis of thyroid hormones.

Therefore, it should be noted that the main reasons leading to the development of endemic goiter are: stress, violation of intestinal adsorption, mutations in the genes responsible for the synthesis of thyroid hormones, autoimmune reactions, contamination of drinking water with impurities that impede the absorption of iodine, deficiency of certain trace elements that contribute to the absorption of iodine and the normal synthesis of thyroid hormones (zinc, selenium, cobalt, copper), a low content of iodine in the environment and drinking water, an unbalanced diet – rare use of fish, meat, seaweed, dairy products, oatmeal and buckwheat groats, the development of infectious-inflammatory processes (worm infestation, chronic diseases); poor hygiene and social conditions.

Iodine deficiency is also especially negative for children. Thus, differences in psychomotor development in children with iodine deficiency begin to appear already from the first months of life, obviously - about 2.5 years or older, in the form of growth retardation and learning difficulties. Iodine deficiency in the period of intrauterine development, negatively affects the child's learning abilities. The motivation for achievement, the implementation of the school curriculum is reduced, the general cognitive function decreases [11].

MATERIALS AND RESEARCH METHODS

We conducted our researches in the Samarkand Endocrinology Center of the Republic of Uzbekistan. 57 students (female) of Samarkand State University aged 18 to 25 years were examined.

Clinical laboratory, biochemical (TTG, T3, T4), instrumental (UTT) and microbiological studies were performed in all examined patients to determine the degree of the disease and evaluate the effectiveness of therapeutic measures. The stress state of the body was evaluated by determining the adrenaline content by the method of HPLC (high performance liquid chromatography). The research results are presented in table 1.

- ✚ The examined patients were divided into 2 groups:
- ✚ Group I (29 patients) - received traditional treatment (iodine preparations).
- ✚ Group II (28 patients) received phyto- and vitamin therapy in complex treatment.
- ✚ Complex therapy of endemic goiter included vitamins of group B, PP, C, pumpkin seed and elecampane, depending on the severity of the disease for 3 to 7 days.

Obtained results and their discussion. The results of studies of the patients with endemic goiter before and after treatment are shown in table 1.

Table 1. Indicators of T3, T4 and adrenaline in endemic goiter

Indicators	Control	Treatment	
		Before treatment	After treatment
T ₃ , nmol/l	1,65±0,12	2,01± 0,17	1,6±0,13
T ₄ , nmol/l	86,2±7,5	118,6±10,4	92,4±8,1
Adrenaline, nmol/l	2,22±0,12	3,54±0,10	2,41±0,14

The studies have shown that the content of triiodothyronine (T3) in patients before treatment was 2.01 ± 0.17 nmol/l (in healthy patients - 1.65 ± 0.12), and after treatment (phyto- and vitamin therapy) decreased up to 1.6 ± 0.13 nmol/l, i.e. there was a tendency to normalize this indicator.

The content of thyroxine (T4) in patients before treatment was 118.6 ± 10.4 nmol/l (in healthy patients, 86.2 ± 7.5), and after treatment, it was 92.4 ± 8.1 nmol/l, those. there was also a tendency to normalize this indicator.

The adrenaline content in patients was 3.54 ± 0.10 nmol/l (in healthy patients, 2.22 ± 0.12 nmol/l), and after the complex treatment, it decreased to 2.41 ± 0.14 nmol/l.

In patients of group I (29 patients) before treatment, I degree of disease was noted in 15 patients, II degree of disease in 14 patients.

Group II (28 patients) before treatment I degree of disease was noted in 13 patients, II degree of disease in 15 patients.

The complex of therapeutic measures for endemic goiter depended on the severity of the disease.

We recommended the use of anise root and elecampane in the form of a powder of 1 teaspoon 3 times a day for 1 month along with a complex of B vitamins (B1, B2, B6), nicotinic (vitamin PP), ascorbic acid (rosehip infusion) 3 days, depending on the severity of the disease. It is proposed to exclude margarine and food products made on its basis from the diet [10,15,16,19,20]. The results of the study are presented in table 1.

CONCLUSIONS

1. The main reasons for the development of endemic goiter are: stressful conditions, violation of intestinal absorption, lack of trace elements (in particular iodine) and vitamins, mutations in the genes responsible for the synthesis of thyroid hormones, autoimmune reactions, contamination of drinking water with impurities that impede the absorption of iodine.
2. For endemic goiter, the use of anise root and elecampane in the form of a powder of 1 teaspoon 3 times a day for 1 month is recommended along with a complex of B vitamins (B₁, B₂), vitamin PP and ascorbic acid for 3 days, depending on the severity of the disease.
3. Comprehensive treatment of patients with endemic goiter using phyto- and vitamin therapy to restore impaired intestinal absorption improves iodine absorption and is an effective method of therapy.

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