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ETIOLOGY AND TREATMENT OF HYPERTHYROIDISM

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Annotation: Hyperthyroidism (thyrotoxicosis) is a clinical syndrome caused by an increase in the hormonal activity of the thyroid gland and characterized by excessive production of thyroid hormones-T3 (triiodothyronine) and T4 (thyroxine). Oversaturation of blood with thyroid hormones causes acceleration of all metabolic processes in the body (the so-called "fire of metabolism"). This condition is the opposite of hypothyroidism, in which the metabolic processes slow down due to a decrease in the level of thyroid hormones. If hyperthyroidism is suspected, a study of the level of thyroid hormones and TSH is performed, ultrasound, scintigraphy, and if necessary, a biopsy.

Key words: Hyperthyroidism, biopsy, performed, ultrasound, scintigraphy.

Usually, hyperthyroidism develops as a result of other pathologies of the thyroid gland, caused both by disorders in the gland itself and in its regulation: in 70-80% of cases, the development of hyperthyroidism occurs due to diffuse toxic goiter (Graves ' disease, Basedova's disease) – a uniform increase in the thyroid gland. This is an autoimmune disorder in which antibodies are produced against the pituitary TSH receptors, which contribute to constant stimulation of the thyroid gland, its enlargement and persistent excess production of thyroid hormones.

With viral inflammation of the thyroid gland (subacute thyroiditis) or Hashimoto's autoimmune thyroiditis, destruction of thyroid follicular cells and excess thyroid hormones enter the blood. In this case, hyperthyroidism is temporary and mild, lasting several weeks or months. Local seals in the thyroid gland with nodular goiter further increase the functional activity of its cells and the secretion of thyroid hormones.

The presence of TSH-secreting pituitary tumors, as well as toxic thyroid adenoma (a tumor that produces thyroid hormones autonomously, regardless of pituitary control) or ovarian struma (a tumor consisting of thyroid cells and secreting thyroid hormones) leads to the development of hyperthyroidism. The condition of hyperthyroidism can develop with uncontrolled intake of large amounts of synthetic thyroid hormones or tissue immunity of the pituitary gland to thyroid hormones. Women, persons with a burdened hereditary history, and the presence of autoimmune pathology are predisposed to the development of hyperthyroidism.

Classification

Depending on the level of violation, there are primary hyperthyroidism (caused by thyroid pathology), secondary hyperthyroidism (caused by pituitary pathology), and tertiary hyperthyroidism (caused by hypothalamic pathology). There are several forms of primary hyperthyroidism:

- subclinical (T4 level is normal, TSH is low, the course is asymptomatic);
- manifest or explicit (T4 level is elevated, TSH is significantly reduced, characteristic symptoms are observed);
- complicated (atrial fibrillation, cardiac or adrenal insufficiency, dystrophy of parenchymal organs, psychosis, severe weight deficit, etc.).

Symptoms of hyperthyroidism

The manifestations of hyperthyroidism in various thyroid lesions are similar, although each pathology, accompanied by a high level of thyroid hormones, has its own characteristics. Symptoms depend on the duration and severity of the disease, on the degree of damage to a particular system, organ or tissue.

With hyperthyroidism, pronounced disorders of the central nervous system and mental activity develop: nervousness and increased excitability, emotional unbalance (irritability and tearfulness), feelings of fear and anxiety, increased mental processes and rapid speech, impaired concentration of thoughts, their sequence, insomnia, small-scale tremor.

Cardiovascular disorders in hyperthyroidism are characterized by a violation of the heart rhythm (persistent sinus tachycardia, poorly treatable; atrial fibrillation and flutter), an increase in systolic (upper) and a decrease in diastolic (lower) blood pressure, an increase in pulse rate, an increase in linear and volumetric blood flow velocity, and the development of heart failure.

Ophthalmic disorders (Graves ' ophthalmopathy) in hyperthyroidism are found in more than 45% of patients. It is manifested by an increase in the eye gap, displacement (protrusion) of the eyeball forward (exophthalmos) and restriction of its mobility, rare blinking, double vision of objects, edema of the eyelids. There is dryness, corneal erosion, pain in the eyes, lacrimation, blindness may develop as a result of compression and dystrophic changes in the optic nerve.

Hyperthyroidism is characterized by changes in metabolism and acceleration of basal metabolism: weight loss with increased appetite, the development of thyrogenic diabetes, increased heat production (sweating, fever, heat intolerance), adrenal insufficiency as a result of the rapid breakdown of cortisol under the influence of thyroid hormones. With hyperthyroidism, changes occur in the skin - it becomes thin, warm and moist, hair-they thin out and turn gray early, nails, swelling of the soft tissues of the lower leg develops.

As a result of edema and congestion in the lungs, shortness of breath and a decrease in the vital capacity of the lungs develop. Gastric disorders are observed: increased appetite, digestive disorders and bile formation, unstable stools (frequent diarrhea), attacks of abdominal pain, liver enlargement (in severe cases-jaundice). Elderly patients may experience a decrease in appetite up to anorexia.

With hyperthyroidism, there are signs of thyrotoxic myopathy: muscle hypotrophy, muscle fatigue, constant weakness and trembling in the body, limbs, the development of osteoporosis, motor activity disorders. Patients have difficulty walking for a long time, climbing stairs, and carrying heavy loads. Sometimes reversible "thyrotoxic muscle paralysis" develops.

Violation of water metabolism is manifested by strong thirst, frequent and copious urination (polyuria). Disorder of the sexual functions in hyperthyroidism develops as a result of a violation of the secretion of male and female gonadotropins and can cause infertility. Women have menstrual irregularities (irregularity and soreness, scanty discharge), general weakness, headache and fainting; men have gynecomastia and decreased potency.

Complications

With an unfavorable course of hyperthyroidism, a thyrotoxic crisis may develop. It can be triggered by infectious diseases, stress, and heavy physical exertion. The crisis is manifested by a sharp exacerbation of all the symptoms of hyperthyroidism: fever, sharp tachycardia, signs of heart failure, delirium,progression of the crisis to a comatose state and death. Possible "apathetic" version of the crisis-apathy, complete indifference, cachexia. Thyrotoxic crisis occurs only in women.

Diagnostics

Hyperthyroidism is diagnosed based on the characteristic clinical manifestations (appearance of the patient and complaints), as well as the results of research. With hyperthyroidism, it is informative to determine the content of TSH (reduced content), T3 and T4 (increased content) hormones in the blood.

When ultrasound of the thyroid gland determines its size and the presence of nodular formations in it, with the help of computed tomography, the place of formation of nodes is

specified. Conducting an ECG records the presence of abnormalities in the work of the cardiovascular system. Radioisotope scintigraphy of the thyroid gland is performed to assess the functional activity of the gland, determine nodular formations. If necessary, a thyroid node biopsy is performed.

Treatment of hyperthyroidism

Modern endocrinology has several methods of treating hyperthyroidism, which can be used in isolation or in combination with each other. These methods include:

1. Conservative (medical) therapy.
2. Surgical removal of part or all of the thyroid gland.
3. Radioiodine therapy.

It is definitely impossible to determine the best method that would be suitable for absolutely all patients with hyperthyroidism. The choice of treatment method that is best suited for a particular patient with hyperthyroidism is carried out by an endocrinologist taking into account many factors: the patient's age, the disease that caused hyperthyroidism and its severity, allergy to medications, the presence of concomitant diseases, individual characteristics of the body.

Conservative treatment

Drug treatment of hyperthyroidism is aimed at suppressing the secretory activity of the thyroid gland and reducing the production of excess thyroid hormone production. Thyrostatic (antithyroid) drugs are used: methimazole or propylthiouracil, which hinder the accumulation of iodine necessary for the secretion of hormones in the thyroid gland.

Non-medicinal methods such as diet therapy and hydrotherapy play an important role in the treatment and recovery of patients with hyperthyroidism. Patients with hyperthyroidism are recommended to undergo sanatorium treatment with an emphasis on cardiovascular diseases (once every six months).

The diet should include a sufficient content of proteins, fats and carbohydrates, vitamins and mineral salts, products that excite the central nervous system (coffee, strong tea, chocolate, spices) are subject to restriction.

Surgical treatment

Before making a responsible decision about surgery, all alternative treatment methods are discussed with the patient, as well as the type and scope of possible surgical intervention. Surgery is indicated for some patients with hyperthyroidism and involves removing part of the thyroid gland. Indications for surgery are a single node or an overgrowth of a separate area (hillock) of the thyroid gland with increased secretion. The remaining part of the thyroid gland after surgery performs a normal function. If most of the organ is removed (subtotal resection), hypothyroidism may develop, and the patient needs to receive replacement therapy throughout life. After removing a significant portion of the thyroid gland, the risk of recurrent thyrotoxicosis is significantly reduced.

Treatment with radioactive iodine

Radioiodine therapy (treatment with radioactive iodine) consists of taking a capsule or an aqueous solution of radioactive iodine by the patient. The drug is taken once, has no taste or smell. Once in the blood, radioiodine enters the hyperfunctional thyroid cells, accumulates in them and destroys them within a few weeks. As a result, the size of the thyroid gland decreases, the secretion of thyroid hormones and their level in the blood decreases. Treatment with radioactive iodine is prescribed simultaneously with medication. Complete recovery with this method of treatment does not occur, and patients sometimes have hyperthyroidism, but it is less pronounced: in this case, it may be necessary to repeat the course.

More often, after treatment with radioactive iodine, a state of hypothyroidism is observed (after several months or years), which is compensated by replacement therapy (lifelong intake of thyroid hormones).

Other treatment options

In the treatment of hyperthyroidism, beta-blockers can be used to block the effect of thyroid hormones on the body. The patient may feel better within a few hours, despite the excess level of thyroid hormones in the blood. Beta-blockers include drugs: atenolol, metoprolol, nadolol, propranolol, which have a long-term effect. With the exception of hyperthyroidism caused by thyroiditis, these medications cannot be used as an exclusive treatment method. Beta-blockers can be used in combination with other methods of treating thyroid diseases.

Prognosis and prevention

Patients with hyperthyroidism should always be under the supervision of an endocrinologist. Timely and adequately selected treatment allows you to quickly restore good health and prevent the development of complications. It is necessary to start treatment immediately after diagnosis and categorically do not self-medicate. Prevention of the development of hyperthyroidism consists in proper nutrition, timely treatment of existing thyroid pathology.

Literature:

1. Qizi, B. O. S., Qizi, X. D. A., & Yusupovich, M. I. (2022). IJTIMOIY SIYOSAT: ROSSIYADA INKLYUZIV TA? LIM HAQIDA. *FAN, TA'LIM VA AMALIYOTNING INTEGRASIYASI*, 922-930.
2. Yusup o‘g’li, M. I. (2022). Mustaqil ta’limni blended learning texnologiyasi asosida tashkil etish. *FAN, TA'LIM VA AMALIYOTNING INTEGRASIYASI*, 126-131.
3. Yusup o‘g‘li, M. I. (2024). OLIY TA’LIM MUASSALARIDA INKLYUZIV TA’LIMNI RIVOJLANTIRISH: MUAMMO VA YECHIMLAR. *FAN, TA'LIM VA AMALIYOTNING INTEGRASIYASI*, *5*(1), 1-10.
4. Usmanovna, N. G., & Oybekovna, D. G. (2018). The importance of motivation in education. *Достижения науки и образования*, (16 (38)), 33-35.
5. Jumaboyeva, J. S., & Daminova, G. O. (2019). ROLE OF TEACHERS'MOTIVATION IN TEACHING. *Вопросы науки и образования*, (3), 84-88.
6. Oybekovna, D. G., & Ahmadjonovna, M. M. (2019). Different roles of teachers. *Проблемы педагогики*, (1 (40)), 19-20.
7. Gulbahor, D., Nazirovna, I. D., & Hoshimovna, B. M. (2020). INCREASING LANGUAGE SKILLS IN MEDICAL INSTITUTIONS. *Journal of Complementary Medicine Research*, *11*(1), 134-134.
8. Ахмедова, М., Расулова, Н., & Абдуллаев, Х. (2016). Изучение парциальных функций почек у детей раннего возраста с нефропатией обменного генеза. *Журнал проблемы биологии и медицины*, (2 (87)), 37-40.
9. Расулова, Н. А. (2009). Клиническая значимость факторов риска развития рахита у детей. *Врач-аспирант*, *34*(7), 567-571.