

MODERN THYROID GLAND DISEASES CLINICAL LABORATORY DIAGNOSTIC METHODS

Samarkand State Medical University

*Kuvandikov G'.B., Dr. Mudit Chhajer, Kurbonova L.M. - Assistant of the
department of human anatomy;*

In practice, very different laboratory methods are used in the diagnosis of thyroid gland diseases. These consist of several parts: 1. Thyroid hormones and methods for determining the amount of other iodine compounds in the blood: the amount of iodine bound to protein; iodine separated by butanol; total T4, free thyroxine T4; consists in determining the amount of total T3, free T3, reversible T3, thyroxine-binding proteins (globulin and realbumin).

Methods for determining the functional state of the thyroid gland: the ability of the thyroid gland to absorb $J\ 131$; the method transmitted by the effect of triiodothyronine T3, the method transmitted by thyroliberin, the method showing a decrease in the thyroid gland's ability to capture iodine, and so on.

Methods of studying the peripheral effects of thyroid hormones, determination of basic metabolism: determination of the amount of creatinine phosphokinase in blood serum; determining the heel reflex time; (photomathography, reflexometry, reflexography), the amount of serum SAMF to glucagon methods that determine the answer.

Detection of antibodies included in various components of the thyroid tissue; to thyroglobulin, its microsomal part, second colloidal antigen; detection of thyroid hormone-producing antibodies, i.e. immunoglobulins.

Methods of determination of thyroid hormones in blood serum with iodine in other components:

a) Protein bound iodine

This method is the most widely used method for knowing the amount of thyroid hormones in the blood. This amount of iodine is mainly determined by chemical means. 90% of protein-bound iodine is T4, the rest is iodine-bound albumin, thyroglobulin, and others. In healthy people, the amount of this protein is 6-8 $\mu\text{g}/100\ \text{ml}$.

b) Amount of butanol-released iodine (T3 and T4) Thyroid gland

Total T4 is determined by radioimmunological method, its amount in healthy people is 5-10 $\mu\text{g}/100\ \text{ml}$. This style is a drop of blood on blotting paper is determined using This method is especially convenient for detecting gyrothyroidism in babies;

g) Free T4 is 1.5-2.9 $\text{ng}/100\ \text{ml}$ in healthy people. This method is used in

practice and is usually limited to determining the amount of total T4.

j) To determine the amount of total T3, a radioimmunological method is used performed using a special anti-T3 serum. The amount of T3 is 65-150 $\mu\text{g}/100\text{ ml}$.

z) Free T3 is determined using a radioimmunological method and its amount is 0.4 ng/100 ml.

e) Reverse reversible T3 is determined by radioimmunological method and is 25-80 ng/100 ml. Its amount mainly increases in "disseminated toxic goiter" (DTZ), and decreases in gyrothyroidism.

k) The method of detection of thyroxine-binding proteins is mainly based on the property of the protein to be saturated with T4. In addition, thyroxine-binding proteins are also detected by radioimmunological method and their amount does not exceed 1.2 to

2.2 mg/100 ml in healthy people. "Tiorak-4": "Amersham" aggregates are used instead.

Determination of various antibodies found in thyroid gland tissue.

a) There are various methods for the detection of antibodies to thyroglobulin. They are: re-irritation reaction; Method according to Ouchterloni technique, indifferent hemagglutination (LGAR) RRGa reaction, immunofluorescent and are radioimmunological methods. In the RRGa reaction, erythrocytes are used. to human thyroglobulin when these erythrocytes are treated with tannic acid increases sensitivity. In the presence of antibodies against thyroglobulin agglutination of erythrocytes is observed. Thyroglobulin antibodies are detected in 90-98% of patients with "autoimmunothyroidism", 40-60% of patients with "hyrothyroidism", 20-30% of patients with "spreading toxic goiter". is determined and 5-6% are toxic thyroid gland diseases.

In healthy people, this reaction has negative results. Reaction recitation is one of the simplest techniques. This technique gives a positive result in 60% of cases of Hoshimoto's disease, 1.5-2% of cases of "diffuse toxic disease" and 3% of cases of "thyroid hyperplasia". In healthy people, this reaction has negative results. But this method is slightly less sensitive to RRGa. b) It is also possible to detect antibodies against the microsomal fraction by the methods mentioned above. With this method, 85% of antibodies can be detected in "Hoshimoto'sdisease" and 85% in "toxic" disease. The detection of these antibodies in goitre diseases once again proves that they have an autoimmune genesis.

c) Antibodies to secondary colloidal antigens. The second colloid antigen is a protein that does not contain iodine. These antibodies give a positive result in 50% of "spreading toxic goiter", autoimmune thyroiditis. Sometimes 8-10% of healthy people can get a positive result. "Thyroiditis Kerven" gives a positive result in 60% of cases.

g) Thyroid hormone-producing immunoglobulins, i.e. gamma-globulins in human

serum, enhance thyroid activity like TTG hormone, but the peak of blood radioactivity is determined after 9 hours, and after 2 hours after TTG administration.

Therefore, these globulins are called long-acting globulins - RATS.

0.5 ml for monitoring. blood serum is taken, and RATS gives a positive result in 45-50% of cases of "spreading toxic goiter". Another type of these globulins is isolated from the blood in later stages and is called LATS-rotector. The LATS-rotector gives a positive result in 60-65% of cases of "spreading toxic goiter". Methods for determining the amount of antibodies that increase the production of thyroid hormones, in the comparative diagnosis of "spreading toxic goiter", "ofalmoratia", "myxedema", "thyrotoxic adenoma" is of great importance.

Gyrerteriosis is diagnosed based on the amount of hormones in the blood. An increase in thyroxine and a minimal increase in TTG indicate gyrofunction of the thyroid gland. Blood analysis is especially important in the elderly. For example, gyrarteriosis occurs without symptoms in women in menorrhoea. Only laboratory analyzes testify to ratology. Blood analysis shows the state of the endocrine organ.

Additional examination methods should be used to determine the causes leading to hirteriosis.

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