Volume 3, Issue 2, February 2025 ISSN (E): 2938-3765

THE DIAGNOSIS OF HYPOTHYROIDISM

Nabiyeva F. S.
Senior Lecturer of the Department of Clinical Laboratory Diagnostics,
Samarkand State Medical University

Yakubova D. M.
Assistant of the Department of Clinical Laboratory Diagnostics,
Samarkand State Medical University

Abdualimova L. A.
Cadet of the Department of Clinical Laboratory Diagnostics,
Samarkand State Medical University

Abstract
Hypothyroidism is the result of inadequate production of thyroid hormone or inadequate action of thyroid hormone in target tissues. According to some epidemiological studies, the prevalence of manifest primary hypothyroidism in the population is 0.2-2.0%, subclinical - up to 10% in women and up to 3% in men. Hypothyroidism is most common among older women, where the prevalence rate reaches 12%. The wide array of symptoms of hypothyroidism indicates an effect on metabolism and dysfunction in multiple organ systems.

Keywords: Hypothyroidism, thyroid gland, etiology, pathogenesis, clinical symptoms, diagnostics.

Introduction

Hypothyroidism is classified according to the level of damage to the hypothalamus-pituitary-thyroid gland-target tissue system, etiopathogenesis, and severity of clinical manifestations of the disease. Congenital forms of hypothyroidism are distinguished separately, the level of damage in which can also be any (primary, central, peripheral). In the vast majority of cases, hypothyroidism is permanent, but in a number of thyroid diseases it can also be transient [1,4,18].

The etiology of hypothyroidism can be primary, secondary, or tertiary. Primary hypothyroidism is most often caused by autoimmune thyroiditis (Hashimoto's disease), iodine deficiency, or thyroid surgery. Secondary and tertiary hypothyroidism are associated with disturbances in the functioning of the pituitary gland or hypothalamus, respectively [2,3,6].

The pathogenesis of hypothyroidism involves several key mechanisms. In primary hypothyroidism, low levels of thyroid hormones lead to a decrease in the manifestation of signals (TSH) produced by the pituitary gland, which in turn causes a functional disorder of the thyroid gland itself. These changes are accompanied by a decrease in basal metabolism, an increase in body weight, disruption of the cardiovascular system and psychoemotional disorders [16,17].

Web of Medicine: Journal of Medicine, Practice and Nursing
webofjournals.com/index.php/5

Symptoms of hypothyroidism vary widely and can affect many body systems. They include fatigue, weight gain, depression, dry skin and hair, and slow mental activity. Initially, patients may experience persistent fatigue, decreased activity, and confusion. Weight gain is common despite no change in diet, due to a slow metabolism. The skin becomes dry and pale, the hair loses vitality and may begin to fall out. In addition, hypothyroidism can lead to swelling, especially in the face and around the eyes. Patients may complain of constipation, menstrual irregularities and decreased libido. Decline in cognitive function is also a common symptom, including depression, forgetfulness, and difficulty concentrating [5,7,9,14].

Laboratory diagnosis of hypothyroidism is a key aspect in the detection and treatment of thyroid dysfunction. The main goal of diagnosis is to determine the level of thyroid hormones, such as thyroxine (T4) and triiodothyronine (T3), as well as thyroid-stimulating hormone (TSH), produced by the pituitary gland.

As part of diagnostics, doctors often prescribe tests for TSH levels in the blood, which serves as a sensitive marker of hypothyroidism. Elevated TSH values indicate insufficient levels of thyroid hormones, which is often observed in primary hypothyroidism [12,13,15]. In addition, an integral part of diagnostics is the determination of antibodies to thyroid peroxidase (TPO) and thyroglobulin, which allows identifying autoimmune disorders, such as Hashimoto's disease. An important addition to laboratory data is an ultrasound examination of the thyroid gland, which allows one to assess its morphological state [8,10,11].

Careful interpretation of the obtained results requires the experience and knowledge of the clinician, which forms the basis for the correct prescription of therapeutic measures aimed at restoring normal thyroid function and improving the quality of life of patients.

REFERENCES:

1. Wilson S. A., Stem L. A., Bruehlman R. D. Hypothyroidism: Diagnosis and treatment //American family physician. – 2021. – Т. 103. – №. 10. – С. 605-613.

2. LeGrys V. A., Hartmann K., Walsh J. F. The clinical consequences and diagnosis of hypothyroidism //Clinical Laboratory Science. – 2004. – Т. 17. – №. 4. – С. 203-208.

3. Chaker L. et al. Hypothyroidism (primer) //Nature Reviews: Disease Primers. – 2022. – Т. 8. – №. 1.

4. ШШ Бердиярова, НА Юсупова. Особенности иммунометаболических нарушений иммунологической реактивности при гематогенных остеомиелитах. Вестник науки и образования, 29-32.

5. Клинико-лабораторная диагностика внебольничных пневмоний у детей ШШ Бердиярова, НА Юсупова, ХИ Ширинов Вестник науки и образования, 80-83.

6. Ибрагимов Б.Ф., Ибрагимова Н.С. Роль гомоцистеина в патогенезе синдрома поликистозных яичников у женщин International scientific review, Boston, USA. January 22-23, 2020.

7. Шайкулов Х., Исокулова М., Маматова М. СТЕПЕНЬ БАКТЕРИОЦИНОГЕННОСТИ АНТИБИОТИКОРЕЗИСТЕНТНЫХ ШТАММОВ СТАФИЛОКОККОВ, ВЫДЕЛЕННЫХ В САМАРКАНДЕ //Евразийский журнал медицинских и естественных наук. – 2023. – Т. 3. – №. 1 Part 1. – С. 199-202.

Web of Medicine: Journal of Medicine, Practice and Nursing
webofjournals.com/index.php/5

8. Isomadinova L. K., Kudratova Z. E. Clinical and laboratory characteristics of vomiting in pregnant women in early pregnancy //Doctor's herald journal. – 2023. – T. 2. - C. 52-56.
9. Исомадинова Л. К., Даминов Ф. А. Современная лабораторная диагностика хронического пиелонефрита у детей //Journal of new century innovations. – 2024. – Т. 49. – №. 2. – С. 112-116.
10. Kamoliddinovna I. L., Tuniq U. MODERN LABORATORY DIAGNOSIS OF PREGNANT WOMEN WITH ATHEROSCLEROSIS //Web of Discoveries: Journal of Analysis and Inventions. – 2024. – Т. 2. – №. 5. – С. 98-100.
11. Kudratova Z. E., & Shamsiddinova M. Sh. (2023). LABORATORY METHODS FOR DIAGNOSING UROGENITAL CHLAMYDIA. Open Access Repository, 10 (10), 5–7.
12. Kudratova Z. E. et al. CURRENT MODERN ETIOLOGY OF ANEMIA //Open Access Repository. – 2023. – Т. 10. – №. 10. – С. 1-4.
13. Sabirovna I. N., Shekhrozovna B. F. DIAGNOSTIC CRITERIA AND TREATMENT OF TYPE 2 DIABETES MELLITUS //Galaxy International Interdisciplinary Research Journal. – 2023. – Т. 11. – №. 10. – С. 237-240.
14. Даминов Ф. А. Анализ результатов хирургического лечения больных узловыми образованиями щитовидной железы //research focus. – 2022. – Т. 1. – №. 2. – С. 120-124.
15. Даминов Ф. А. ЛАПАРОСКОПИЧЕСКИЙ АДГЕЗИОЛИЗ В ЛЕЧЕНИИ ОСТРОЙ СПАЧЕЧНОЙ КИШЕЧНОЙ НЕПРОХОДИМОСТИ //Research Focus. – 2022. – Т. 1. – №. 2. – С. 117-119.
16.Tursunov Feruz O'Ktam O'G'Li, Raximova Gulchiroy Olim Qizi, Isroilova Umidaxon, Turayeva Shaxnoza ASSESSMENT OF CARBOHYDRATE METABOLISM IN PATIENTS WITH DIABETES AND COVID-19 // ReFocus. 2022. №4.
17. Burkhanova D. S., Tursunov F. O., Musayeva F. THYMOMEGALY AND THE STATE OF HEALTH OF CHILDREN IN THE FIRST YEAR OF LIFE //Galaxy International Interdisciplinary Research Journal. – 2023. – Т. 11. – №. 10. – С. 62-64.