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DIAGNOSIS AND TREATMENT OF THYROID DISEASES

Usmanova Kamilla Baxtiyorovna
Samarkand State Medical University, Faculty of General Medicine, 4th-year student
E-mail: kamillau0007@gmail.com
Xulayeva Aliya Ibragimovna
Samarkand State Medical University, Faculty of General Medicine, Group 416, 4th-year student
E-mail: aliya.khulayeva@mail.ru
Yusupova Parvina Rustamjonovna
Samarkand State Medical University, Faculty of General Medicine, 4th-year student
E-mail: parvina5385565@gmail.com
Scientific Supervisor:
Maxmudova Aziz Nugmanovna, Professor,
Head of the Department of Social and Humanitarian Sciences

Annotation: This thesis discusses the main diagnostic methods and treatment approaches for thyroid diseases. Particular attention is given to clinical symptoms, thyroid hormone assessment, ultrasound examination, and modern treatment strategies. Early diagnosis and appropriate treatment are important for preventing complications and improving the quality of life of patients with thyroid disorders.

Keywords: Thyroid diseases, thyroid gland, hypothyroidism, hyperthyroidism, diagnosis, treatment, thyroid hormones, ultrasound.

Main part

Thyroid diseases are common endocrine disorders that can affect many organs and systems of the body. The clinical presentation depends on the type and severity of thyroid dysfunction. Hypothyroidism develops when the thyroid gland produces insufficient amounts of thyroid hormones. Patients with hypothyroidism may experience weakness, fatigue, weight gain, dry skin, constipation, cold intolerance, and decreased physical activity. Some patients may also have slowed heart rate and difficulty concentrating. Hyperthyroidism is characterized by excessive production of thyroid hormones. Common symptoms include weight loss, increased sweating, nervousness, tremor, rapid heartbeat, heat intolerance, and sleep disturbances. Thyroid enlargement, or goiter, may occur in different thyroid diseases. Thyroid nodules can be detected during physical examination or incidentally during imaging studies. Some nodules do not produce any symptoms, while others may affect thyroid function or cause local pressure symptoms. Therefore, careful assessment of clinical manifestations is important for early identification of thyroid disorders and selection of further diagnostic methods.

Modern diagnosis of thyroid diseases is based on clinical examination, laboratory tests, and instrumental methods. The measurement of thyroid-stimulating hormone is usually an important initial laboratory assessment of thyroid function. Free thyroxine and, when necessary, free triiodothyronine can provide additional information about thyroid hormone status. Thyroid antibody testing may be useful when autoimmune thyroid disease is suspected. Ultrasound examination is widely used to evaluate the size, structure, and echogenicity of the thyroid gland. It also allows the detection and characterization of thyroid nodules. Suspicious nodules may require fine-needle aspiration biopsy for cytological evaluation. Additional imaging methods can be used in selected clinical situations. The interpretation of laboratory and imaging results should be performed together with the patient's clinical findings. Early and accurate diagnosis makes it possible to distinguish different thyroid disorders and select an appropriate treatment strategy. Regular monitoring is particularly important for patients receiving long-term therapy.

Treatment of thyroid diseases depends on the specific diagnosis, severity of the condition, age of the patient, and associated risk factors. Hypothyroidism is generally treated with thyroid hormone replacement therapy, with the dose adjusted according to clinical and laboratory findings.

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Hyperthyroidism may be treated with antithyroid medications, radioactive iodine therapy, or surgery in selected patients. The choice of treatment depends on the cause of hyperthyroidism and the individual characteristics of the patient. Thyroid nodules require individual assessment based on their size, ultrasound characteristics, thyroid function, and clinical risk. Surgical treatment may be considered when there are appropriate indications. Regular monitoring of thyroid-stimulating hormone and other relevant laboratory parameters helps evaluate treatment effectiveness. Prevention includes adequate iodine intake, timely medical examinations, recognition of risk factors, and adherence to prescribed treatment. Patient education is also important because long-term treatment often requires regular follow-up. Early diagnosis and individualized management can reduce complications and improve the quality of life of patients with thyroid diseases.

Conclusion

Thyroid diseases require timely diagnosis, appropriate treatment, and regular medical follow-up. Clinical examination, thyroid hormone testing, ultrasound, and other diagnostic methods allow thyroid disorders to be identified and managed effectively. Individualized treatment and preventive measures can reduce the risk of complications and improve patients' quality of life.

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