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The Role of Nursing in the Treatment and Care of Endocrinological Patients Today

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Abstract: Diabetes mellitus is the most common among numerous diseases of the endocrine system. Due to the steady increase in the number of people suffering from diabetes mellitus, WHO experts have called this pathology a non-infectious epidemic of our time. Endocrine pathology is very important in the work of a nurse, since the prevalence of diseases of the endocrine system is becoming more and more among the adult and child population. In this literature review, we examined the rehabilitation of patients with diabetes in the world and the role of a nurse in this.

Keywords: nurse, diabetes, rehabilitation, hyperglycemia.

In the work of a nurse, endocrine pathology is very important, since the prevalence of diseases of the endocrine system is becoming more and more among the adult and child population [9]. Today, the problem of endocrine diseases is relevant for most countries of the world. According to WHO, 215 million people are registered in the world suffering from diseases of the endocrine system [16].

Diabetes mellitus is the most common among numerous diseases of the endocrine system. Due to the steady increase in the number of people suffering from diabetes, WHO experts have called this pathology a non-infectious epidemic of our time. Currently, diabetes mellitus is the second cause of death after cancer [1, 3, 15].

The "classic" disease of the endocrine system is also diseases of the thyroid gland. Over the past 10-15 years, the number of thyroid diseases has increased dramatically, despite the advances in modern medicine. In particular, environmental problems, lack of iodine in food products, unbalanced diet and chronic stress factors contribute to this [4, 6]. Diffuse toxic goiter is the most common form of functional disorders of the thyroid gland. The prevalence of diffuse toxic goiter is about 1%, among women of reproductive age - 2%, in old age it increases to 10%. Reducing these indicators, predicting and preventing endocrine diseases continues to be an urgent problem of practical health care, since healthy people are the key to the prosperity of the state [16].

Correct approaches to prevention and treatment, as well as timely diagnosis of endocrinological diseases, in which the nurse plays the first role as an organizer and the first medical worker with whom the patient communicates, is of key importance and is the key to success in the difficult task of overcoming difficulties in the treatment of endocrinological patients [2, 7, 12].

The endocrine system, including the endocrine glands, along with the nervous system, coordinates and regulates the functions of all other organs and systems, ensuring the unity of the body [19].

The proportion of patients with pathology of the endocrine system is constantly increasing in all economically developed countries of the world. The leading place in the structure of all endocrine diseases is occupied by diabetes mellitus (DM), which is today one of the most dangerous challenges

to the world community and an important priority of national healthcare systems. The second place in the structure of endocrine pathology belongs to various diseases of the thyroid gland. Two decades ago, the number of patients with diabetes in the world did not exceed 130 million people. If in 2013 the number of patients with diabetes in the world amounted to 387 million people, thus having increased more than 2 times over the past 10 years, then in 2015 WHO published data that the number of patients with diabetes in the world exceeded 415 million people [2, 7, 8].

Such a rapid increase in the prevalence of DM, as well as the fact that half of all DM patients are of active working age (from 40 to 60 years), were the reason for the 42nd Assembly of the World Health Organization (WHO) in May 1989, which presented data on an increase in the incidence of diabetes and called on all countries to take measures to prevent this disease [10, 12].

Thyroid pathology - a disease of the thyroid gland, ranks second in prevalence after diabetes among all endocrinopathies. Since the beginning of the 90s, it has also been characterized by an increase in prevalence, depending on many factors, such as gender, age, genetic predisposition, the presence of goitrogenic substances in food (thioglycosides , thiocyanates), iodine supply of the region, etc. The number of patients who received temporary and persistent disability due to thyroid pathology [11, 14].

The incidence of thyroid cancer is currently on the rise worldwide. Today, this pathology is the most common malignant neoplasm of the endocrine system, occupying 2.2% in the structure of oncological morbidity. The increase in the incidence of this pathology is affected by iodine deficiency [16].

Thyroid nodules are a very common pathology that requires diagnostic search and long-term observation of patients. Most of these formations are benign and do not have any effect on human life. 30% of the world's population has a colloid goiter on ultrasound.

The attention of the scientific and medical community to the problem of iodine deficiency has been especially increased in recent years, various epidemiological studies are being carried out. This is due not only to the high prevalence of this pathology, but also to changes in the methods of epidemiological studies, as well as the emergence of new methods for analyzing the content of iodine in the body [4, 25].

A common condition is hypothyroidism - a disease of the thyroid gland with reduced function. Manifest hypothyroidism occurs in 0.2-2% of the population, subclinical - 4-10% (in the elderly - 7-26%). Such a high prevalence determines the medical and social significance of hypothyroidism. The most common cause of this pathology is autoimmune thyroiditis (AIT). In general, autoimmune thyroid diseases (AIT, DTG) occur in 2-5% of the population. The prevalence of carriage of antibodies to thyroperoxidase (AT-TPO) is 12%. The combination of AIT and thyroid cancer is of interest. These two pathologies coexist in 0.3-38% of cases, more often in women. The morphology of the thyroid tissue can be clarified during fine-needle aspiration biopsy, which is considered a fairly accurate diagnostic method (up to 98% accuracy) [6, 3].

the most serious problem in thyroidology , leading to a worse life prognosis and accompanied by an increase in mortality from diseases of the cardiovascular system. Thus, mortality from coronary heart disease, heart failure, arrhythmias, valvular defects and arterial hypertension in combination with thyrotoxicosis increased by 1.2 times compared with the general population. The reason for this is the development of changes in the cardiovascular system [5].

Among the manifestations of "thyrotoxic heart" can be called pulmonary hypertension, diastolic dysfunction, the development of heart failure, dilatation of the heart cavities, atrial fibrillation and left ventricular myocardial hypertrophy. Atrial fibrillation, which occurs in 2-25% of cases of thyrotoxicosis, often persists even after thyrotoxicosis is eliminated. In a study of a group of women with thyrotoxicosis and various cardiopathies , it was found that atrial fibrillation develops in 67% of cases, which indicates the existence of factors affecting the risk of developing atrial fibrillation in thyrotoxicosis, which, in addition to the presence of concomitant pathology of the cardiovascular system, include male gender and age. CW Siu et al . showed that atrial fibrillation is an independent

predictor of the development of heart failure in thyrotoxicosis [7].

This pathology is no less relevant in childhood. Early detection of congenital hypothyroidism in a newborn child allows timely start of thyroid hormone therapy and contributes to the further proper development of the child. The disease develops more often in girls than in boys, mainly in prepubertal and pubertal age.

Diffuse toxic goiter is a consequence of accelerated synthesis of thyroid hormones with an increase in blood serum [13, 17].

Endemic goiter develops when iodine intake is below the daily requirement. The disease occurs, as a rule, in people living in endemic goiter areas.

Many diseases of the endocrine system in children lead to the development of conditions that threaten their lives.

The endocrine gland is an organ that produces special physiologically active substances (hormones) necessary for the life of the body. There are no excretory ducts in the endocrine glands, the hormone from the cells enters the blood, lymph, cerebrospinal fluid and has a stimulating or depressing effect on certain organs or systems. All hormones are necessary for the normal functioning of the body, the lack or excess secretion of any of them leads to a characteristic disease [9].

The main endocrine gland is the pituitary gland, on the activity of which the structure and functions of other endocrine glands depend. The endocrine system plays a key role in important bodily functions such as digestion, reproduction, and homeostasis (maintaining optimal body condition). The main glands of the endocrine system are: pituitary, hypothalamus, thyroid, parathyroid, pineal, adrenal and gonads.

Endocrine secretion contributes to the normal the functioning of the immune and nervous systems in some situations. The endocrine glands produce key hormones that are released directly into the bloodstream and then carried throughout the body. The hypothalamus is the center of the endocrine and nervous systems. It regulates the functioning of the pituitary gland.

- The pituitary gland regulates the secretion of other glands of the endocrine system. The pituitary gland produces important hormones such as growth hormone, corticotropin, prolactin, endorphin, and thyrotropin.
- Thyroid hormones are essential for the development of the brain and nervous system in children.

Diseases of the endocrine system develop as a result of excessive or excessive production of hormones. These diseases can lead to growth disorders, diabetes, high blood cholesterol levels, as well as disruption of the normal functioning of the thyroid gland. Diseases of the endocrine system include: hyperthyroidism, hypercalcemia, growth hormone deficiency, Addison's disease, Itsenko-Cushing's syndrome, and hypothyroidism (endemic goiter) [13, 18].

Exacerbations of diseases of the endocrine system are tumors, steroid use or autoimmune disorders. Symptoms of such diseases: weight change, fading of sexual desire, sudden mood changes, fatigue, urge to urinate, constant thirst. Diseases of the endocrine system are caused by dysfunction of the endocrine glands. In some cases, one gland produces too many hormones while others produce insufficient amounts of hormones. Uneven secretion of the endocrine glands (hypofunction) can be caused by neoplasms, disease or injury. Excessive activity of the gland (hyperfunction) is usually caused by tumors of the glands or autoimmune reactions of the body [19, 12].

For the treatment of endocrine diseases (in case of insufficient activity of the gland), hormone replacement therapy is used. With excessive activity of the glands, pathological tissues are removed.

Hypofunction of the pituitary gland - this disease of the endocrine system is sometimes congenital due to the pathology of the formation of the pituitary gland or hypothalamus. Hypofunction may be caused by a brain tumor or infection of the brain and surrounding tissues.

Growth hormone deficiency - growth intensity slows down significantly. May be complete or partial. This endocrine disease can be diagnosed based on blood tests, which measure hormone levels, and x-

rays of the wrists and hands, which help determine bone growth. Growth hormone injections are used to treat growth hormone deficiency. As a rule, treatment continues for several years until an acceptable result is achieved [7].

Hypercalcemia is an endocrine disorder caused by elevated levels of calcium in the blood. Calcium levels are maintained by vitamin D and parathyroid hormone. Symptoms: bone pain, nausea, kidney stone formation and hypertension. Also, spinal curvature is not ruled out. Other symptoms:

irritability, muscle atrophy and loss of appetite.

Addison's disease is an endocrine disease caused by insufficient production of the hormone cortisol by the adrenal glands. Symptoms of the disease: sudden weight loss, fatigue and loss of appetite. One of the important complications of this endocrine disease is hyperpigmentation - a darkening of the skin color in some areas of the body. Cortisol deficiency can lead to irritability and cravings for salty foods.

Itsenko-Cushing's syndrome is an endocrine disease caused by excessive production of cortisol. The most common symptoms of this syndrome are upper body obesity, fatigue, muscle weakness, and increased bone fragility. Itsenko-Cushing's syndrome is the opposite of Addison's disease [13, 14].

Acromegaly is an endocrine disease caused by excess secretion of growth hormone. It is very difficult to recognize and diagnose this disease, as it progresses very slowly in middle-aged people. Its main symptoms: abnormal growth of the palms and feet. Growth pathology can also be seen in facial features, in particular, in the line of the nose, nose and forehead. In patients with acromegaly, the kidneys, spleen and liver are enlarged. Common complications of this disease are diabetes, hypertension and heart disease.

Hypoparathyroidism is a syndrome of insufficient function of the parathyroid glands. Caused by insufficient levels of calcium in the blood. Symptoms are: tingling in the hands and muscle spasms. It usually takes years for the disease to show up.

Hashimoto's goiter (chronic lymphomatous thyroiditis) is a type of chronic thyroiditis caused by an immune system response to thyroid activity. This disease is hereditary, the symptoms are: slight weight gain, resistance to cold, hair loss and dry skin. In women, chronic thyroiditis often presents with heavy, irregular, and painful menstruation. The most important factor in the development of endocrine diseases is heredity. This is confirmed by the results that were obtained during the medical genetic examination of patients and their relatives. The second important risk factor for diseases of the human endocrine system is the ecological state of the environment [5, 18].

Since it is impossible to stop technological progress with its active development of industry, it is also practically impossible to stop environmental pollution, especially in large cities, which is hostile to the human body. Any pollution of air, water and earth by various types of poisons, salts of heavy 14 metals leaves a negative mark on human health, and, in particular, on its endocrine system [11].

Endocrinology also identifies special endemic areas where the microclimate and its features have an impact on the endocrine system of people. Areas with low iodine content have a higher percentage of people with diseases of the endocrine glands.

The endocrine system is adversely affected by bad habits of a person - drinking and smoking. When smoking, a person inhales many elements, in particular, tars that are found in cigarettes and in inhaled smoke, which, when it enters the body, has a damaging effect on the cell walls of all organs, including the endocrine glands.

Unbalanced nutrition is also a factor in the spread of diseases of the human endocrine system. The lack of trace elements and vitamins leads to a failure in the synthesis of hormones and adversely affects the quality of the work of the entire endocrine system of the body [17].

Stress, psychological trauma, various neuroses adversely affect the nervous system and certain structures of the human brain. Due to the transferred infectious or viral diseases, the debut of diseases of the endocrine system occurs.

In diseases of the endocrine system, the nursing process consists of 5 stages:

1. Nursing examination of an endocrinological patient (conversation, establishment of trusting relationships, main complaints, objective symptoms)
2. Problems (nursing diagnoses) are established priority
3. Planning of medical events;
4. Implementation of planned activities; Final assessment of the effectiveness of nursing interventions.

When working in the endocrinology department, it must be remembered that all endocrine glands are closely interconnected, therefore, a dysfunction in one of the glands causes changes in others. For the most complete picture of the course of the disease and the patient's condition, you need to familiarize yourself with the results of objective and additional examination methods. Based on the data obtained, the nurse can assess the general condition [4, 15].

The nurse should know the main complaints and symptoms in endocrine pathology, the principles of treatment and prevention, the basic principles of restoring impaired functions and preventing complications; be able to provide general care for patients with endocrine pathology. Must possess the skills and abilities to treat, provide emergency care.

The nurse begins her work by examining the patient, identifying the presence of symptoms of diseases and making nursing diagnoses.

Stage one. Main complaints.

Patients with endocrine disorders may complain about all body systems. They are diverse and can be grouped into the main syndromes:

1. Neurotic syndrome: increased mental arousal, intermittent shallow sleep, memory loss. Irritability, tearfulness, sweating, "fussiness", speed of movement (DTG), or apathy, lethargy, dry skin (hypothyroidism).
2. Cardiac syndrome: increased heart rate, pain in the heart, headache, dizziness (hypertension in the disease and Itsenka-Cushing's syndrome).
3. Dyspeptic syndrome: increased appetite in obesity, diabetes or reduced appetite up to anorexia, diarrhea, constipation (thyroid disease).
4. Change in body weight is a non-specific, but common symptom in diseases of the endocrine system. Significant progressive weight loss with increased thyroid function, weight gain - with reduced thyroid function, with Itsenko-Cushing's disease. Uneven distribution of fat - with hypothalamic obesity.
5. Thirst and polyuria are important symptoms of diabetes and diabetes insipidus.
6. Muscle weakness.

In a conversation with the patient, it is necessary to clarify the hereditary predisposition to endocrine diseases, eating habits, previous diseases, working conditions, everyday life, and bad habits.

The physical method of research is examination, it is a valuable method for the study of endocrine disorders. It is necessary to pay attention to "eye symptoms", an increase in the thyroid gland, malnutrition, obesity, pigmentation of the skin, hand tremors, hair condition. Nails, the presence of boils [7, 12].

Signs of diffuse toxic goiter are a frightened expression, a wide palpebral fissure, arousal, a pink complexion. With hypothyroidism - a pale face with narrow palpebral fissures, lethargy. With acromegaly - an increase in the zygomatic arches, forehead, lower jaw, skin of the back of the head; for Itsenko-Cushing's syndrome - a moon-shaped face; for Addison's disease - a bronze complexion. exposed parts of the body. Examination of the anterior surface of the neck: the shape of the neck changes - a symptom of a "thick neck", an increase in the thyroid gland in diseases of the thyroid

gland [16].

Gigantic growth, more than 195 cm - gigantism - often a sign diseases of the pituitary gland (adenoma of the anterior lobe and increased function of the pituitary gland).

Dwarf growth, less than 135cm - often pituitary origin. It occurs due to a reduced function of the anterior lobe, which produces an insufficient amount of the hormone - somatotropin).

Changes in the hairline: hair loss on the head, loss of eyelashes, mustache, eyebrows - for myxedema.

Approximate palpation of the thyroid gland - the density of the organ, the nature of the surface, the presence of nodes.

Pulse palpation: tachycardia (diffuse goiter), bradycardia (hypothyroidism).

To get a complete picture of the course of the disease, the nurse must familiarize herself with the results of additional examination methods and, based on all the methods obtained, develop a care plan [13].

Stage two. Identification of patient problems (on the example of DM)

1. Violation of the need for adequate nutrition and physiological functions - a feeling of hunger and polyuria in a patient with diabetes mellitus, as a result of a decrease in the amount of sugar in the blood.
2. Violation of the same needs - thirst, polyuria, lack of appetite, dries mouth - the result of hyperglycemia in a patient with diabetes mellitus.

Stage three. Nursing Intervention Planning (SP).

Nursing Intervention Plan:

1. Explain to the patient the essence, causes and symptoms of his disease;
2. Have a detailed conversation with relatives.
3. Organize the exchange of information with other patients suffering from this disease for a long time.
4. Recommend to the patient popular literature on the lifestyle of patients with this disease.
5. Talk about the need for strict adherence to diet, behavior and medication.
6. Inform relatives about the possibility of complications of the disease and how to prevent them.
7. Inform the patient about the cause of the feeling of hunger.
8. Have the patient eat 2-3 pieces of sugar (candy) or a piece of bread.
9. Call a doctor.
10. Follow all doctor's orders.

Stage four. Implementation of planned nursing interventions.

Correct and fast implementation of the plan of nursing interventions is a guarantee of timely achievement of the set short-term and long-term goals [2, 7].

Stage five. Evaluation of the effectiveness of nursing interventions.

The effectiveness of the implementation of the patient care plan is the achievement of the goals. At the same time, patients may experience new problems:

1. Violation of the need for physiological functions - skin itching, weakness due to hyperglycemia;
2. Violation of the patient's need for personal hygiene - lack of knowledge about a healthy lifestyle in diabetes in patients from adverse living conditions.

Before discharge from the hospital, the nurse informs patients with diabetes about the need for regular visits to the endocrinologist, the implementation of their recommendations, and also informs them about the work of the "diabetes school", recommends taking a course in it [12]

Conclusion

The role of nursing staff in organizing the work of the endocrinology department was studied. The nursing process in endocrinology was analyzed. The role of medical personnel in the diagnosis and treatment of patients with type 1 diabetes mellitus has been determined.

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