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PRIMARY HYPOTHYROIDISM - CHARACTERISTICS OF PERIPHERAL NERVOUS SYSTEM DAMAGE

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Resume: The cause of thyroid dysfunction had a dominant effect on the occurrence of polyneuropathy: in female patients with primary hypothyroidism, polyneuropathy was much more common and was more pronounced than in male patients.

Key words: primary hypothyroidism, polyneuropathy.

Introduction. Currently, thyroid diseases occupy the first place among endocrine pathologies in terms of their prevalence. Hypothyroidism is one of the most common diseases of the thyroid gland. Deficiency of thyroid hormones leads to inhibition of metabolism involving all organs and systems in the pathological process, including the nervous system with the development of various neurological disorders. These disorders belong to the group of potentially reversible disorders, which determines a positive prognosis regarding the results of their treatment (1, 2).

Damage to the neuromuscular system is one of the most common complications of hypothyroidism and thyrotoxicosis. Neuromuscular syndromes of hypothyroidism include polyneuropathy, myopathy, tunnel neuropathy, pseudomyotonic and pseudomyasthenic syndromes, thyrotoxicosis is characterized by various types of polyneuropathy and myopathy, in addition, thyrotoxicosis can be complicated by the development of thyrotoxic hypokalemic paralysis and provoke the occurrence of myasthenia gravis (3,4). There is no clear opinion about the pathogenesis, correlation with hormonal status and the state of the neuromuscular system during the period of compensation of the underlying disease.

Objective: to identify the clinical features of peripheral neuropathies in primary hypothyroidism, depending on gender.

Materials and methods. 50 patients with primary hypothyroidism aged 18 to 59 years were examined, with an average age of 38.2+7.6 years. Patients of the Department of Endocrinology and Neurology of the Andijan State Medical Institute were taken under observation. The patients were observed at the Department of Endocrinology and Neurology of ASMI. The cause of primary hypothyroidism in all patients was autoimmune thyroiditis. All patients signed an informed consent to participate in the study.

Thus, the criteria for inclusion in the study were: age from 18 to 59 years, the presence of subclinical hypothyroidism and manifest hypothyroidism. Patients with psychiatric and severe somatic and thyroid diseases accompanied by a history of thyrotoxicosis syndrome, menopausal

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syndrome requiring hormone replacement therapy with estrogens, diabetes mellitus, autoimmune polyendocrine syndrome, pregnant and lactating women were excluded from the study.

Table 1

Distribution of patients by groups and subgroups

Groups	**sex**	subgroups	**Forms of hypothyroidism**	**n**	**%**
I group (n=30), 60 %	female	A-subgroup	manifest hypothyroidism	20	66,7 %
		Б- subgroup	subclinical hypothyroidism	10	33,3%
II group (n=20), 40 %	male	A- subgroup	manifest hypothyroidism	15	75 %
		Б- subgroup	subclinical hypothyroidism	5	25 %
Total patients with manifest hypothyroidism				35	70 %
Total patients with subclinical hypothyroidism				15	30 %
Total				50	100,00%

Depending on the gender, the patients were divided into 2 groups. The first group included 30 (60%) female patients, and the second group included 20 (40%) male patients. Each group was divided into 2 subgroups depending on the form of primary hypothyroidism. Subgroup "A" - 35 consisted of patients with a manifest form of hypothyroidism, subgroup "B"-15 consisted of patients with a subclinical form of hypothyroidism. The "A" subgroup of group I included 20 (66.7%) patients, the "A" subgroup of group II – 15 (75%). The "B" subgroup of group I included 10 (33.3%) patients, the "B" subgroup of group II – 5 (25%). The control group consisted of 20 healthy individuals, comparable to the main groups by gender and age.

The examined patients with primary hypothyroidism ranged in age from 48 to 59 years. The average age of women was 42.1±11.7 years, the average age of men was 48.2±8.3 years ($p>0.05$).

All patients underwent a standard clinical and neurological examination (analysis of patient complaints, life history and medical history, objective examination, including the study of neurological status) and somatic examination.

The severity of polyneuropathy was assessed using an augmented scale for assessing the clinical severity of polyneuropathy by V.A. Bulanova. The clinical neuropathy index as the sum

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of the scores of the signs of polyneuropathy. The clinical neuropathy index from 1 to 6.5 points corresponded to mild severity of polyneuropathy syndrome, from 7 to 14.5 points - moderate and from 15 to 20 points - severe.

The results of the study. The most common peripheral nervous system disorder in patients with primary hypothyroidism is polyneuropathy. The clinical picture included complaints of transient low-intensity and moderate-intensity pain and paresthesia in the distal extremities, and "socks and gloves" type of hypesthesia. Impaired deep sensitivity manifested itself in the form of difficulty in determining the direction of movement and counting fingers and toes. Pronounced paresis and paralysis, as well as muscular hypotrophy, were not observed. Vegetative disorders were also mild and manifested mainly by dry skin of the hands and feet, mild acrohyperhidrosis and acrocyanosis. All of these symptoms were more pronounced in the upper extremities. It should be noted that there is no correlation between the severity of polyneuropathy and the age of patients.

In the group of female hypothyroid patients, polyneuropathy was a more common syndrome and occurred in 54.7% of cases (20 people). In addition, with hypofunction of the thyroid gland in women, polyneuropathy was more pronounced (Clinical neuropathy index: 6.52±2.70 points) in contrast to male patients (Clinical neuropathy index: 3.66±3.90 points), ($p<0.001$). The data is shown in Figure 1.

In the I-A group, polyneuropathy was almost an obligate condition - in 82.9% (16 people) of the examined patients, in the I-B subgroup in 18.8% (6 people) of cases. In I-A, polyneuropathy was mild in 51.2% of cases (10 people), moderate in 31.7% (6 people); no pronounced polyneuropathy was detected according to the scale used (Fig.1).

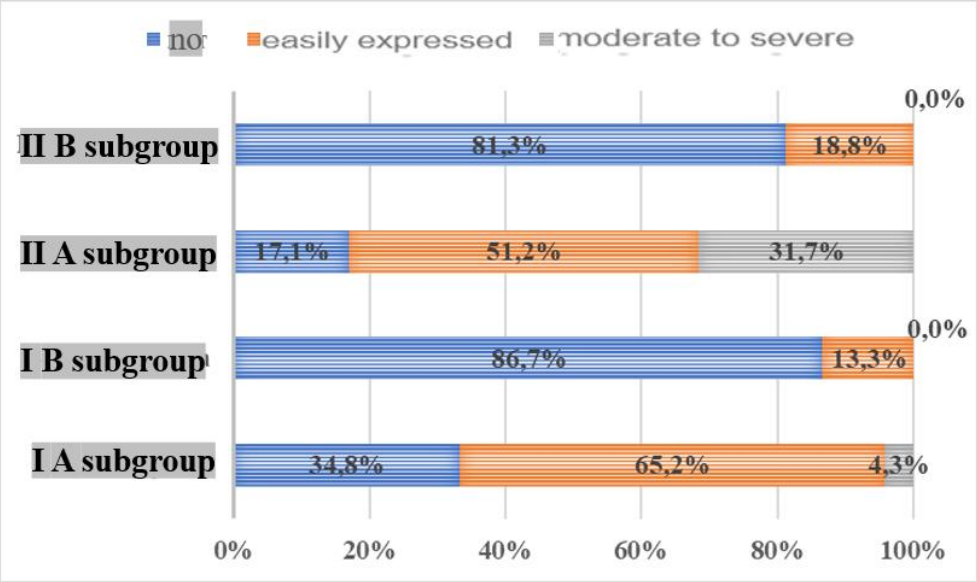

Figure 1. The incidence and severity of polyneuropathy depending on the causes of primary hypothyroidism in the groups.

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The nature of polyneuropathy depended on the severity of thyroid dysfunction. In patients with subclinical hypothyroidism, polyneuropathy was detected in 18.8% of cases, in patients with clinical hypothyroidism - in 82.9% of cases. The average Clinical neuropathy index in women with subclinical hypothyroidism was 6.60±2.60 points, and in patients with clinical hypothyroidism, the average Clinical Neuropathy Index score was 6.19±2.95.

It was detected in the II-A group of men in 69.6% (9 people) of the examined patients, in the II-B subgroup in 13.3% (2 people) cases. In II-A, polyneuropathy was mild in 65.2% of cases (8 people) out of 13 people with polyneuropathy, moderate in 4.3% (1 person) out of 4 people with polyneuropathy; no pronounced polyneuropathy was detected according to the scale used (Fig.1). The average polyneuropathy in patients with primary hypothyroidism was 6.47±2.54 points. Movement disorders were represented by a decrease in tendon and periosteal reflexes, and only 13.8% (4 people) had a decrease in hand strength of up to 4 points.

Thus, a feature of the clinical picture of polyneuropathy in male patients with primary hypothyroidism was mainly its sensitive nature, mild and moderate manifestations, more pronounced in the hands. The cause of thyroid dysfunction had a dominant effect on the occurrence of this syndrome: in female patients with primary hypothyroidism, polyneuropathy was much more common and was more pronounced. In patients, the incidence and severity of polyneuropathy were associated with varying degrees of hypothyroidism severity.

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