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Studying the Connection Between Thyroid Pathologies and Diseases Reproductive System in Women of Childbearing Age

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Abstract The article examines the relationship between the thyroid gland and the reproductive system in women of childbearing age with thyroid pathology, living in conditions of iodine deficiency and with no history of thyroid pathology. According to the results, 31 (15.5%) women with nodular goiter of reproductive age with thyroid pathology had uterine fibroids, 14 (7%) - cervical erosion, 15 (7.5%) women with Diffuse Toxic Goiter - fibroids uterus, cervical erosions were found in 7 (3.5%) women.It is clear that among thyroid nodules are twice as common uterine fibroids and cervical erosion.

Keywords Thyroid gland, Reproductive system, Uterine fibroids, Oligomenorrhea

1. Relevance of the Topic

Recently, experts around the world have paid great attention to the problem of chronic iodine deficiency and treating diseases caused by this problem. The World Health Organization has determined this problem as the most dominant direction in international healthcare [3]. About 2.5 billion people on earth are susceptible to the risk of insufficient iodine intake. Iodine deficiency is a persistent factor and is characterized by low content in soil, water and products nutrition [5]. In women of childbearing age as a result of iodine deficiency.

Endocrine homeostasis is disrupted, resulting in the development of somatic diseases, reproductive function is impaired [9].

Disturbance of the relationship between the thyroid and reproductive systems predetermines menstrual irregularities, infertility, development uterine fibroids, formation of hormone-dependent tumors [10].

On the other hand, functional disorders of the reproductive system with changes in the content of steroid and gonadotropic hormones, which in its turn, may be one of the factors of thyroid pathology [12]. Mechanisms of regulation of menstrual function in diseases of thyroid gland are complex. Menstrual cycle disorders are a serious medical and social problem closely related to decreased fertility [15].

Full compensation of thyroid diseases is an indispensable rule for the management of patients with menstrual irregularities [16]. Reproductive disorders in women of childbearing age with diseases of the thyroid gland, living in conditions of iodine deficiency, particularly in the Fergana region, have been practically not studied. Considering everything above, studying the incidence of diseases of the reproductive system in women of childbearing age with thyroid pathology living in Fergana region in iodine deficiency conditions, features of the course of these diseases in them is one of the pressing medical problems in our country, especially in Fergana region.

The aim of the study was to study the relation between reproductive system diseases in women of childbearing age who have pathology of the thyroid gland living in conditions of iodine deficiency.

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2. Objects and Methods of Research

Among the population living in the Fergana region, in the period from 2023 to 2024 morbidity data were analyzed for 250 women of childbearing age who underwent outpatient treatment referred to the Fergana branch RSNPMCE. The age of the examined patients ranged from 18 to 49 years.

During immunological examination of the functional state of the thyroid gland, special attention was paid to the gland itself, reproductive status of patients, diseases identified by examination of the thyroid gland, uterus and ovaries using ultrasound.

Based on these indicators, the patients were divided into 2 groups.

The 1st group consisted of 200 women of childbearing age with the history of thyroid diseases.

The 2nd (control) group consisted of 50 women of childbearing age, who had no history of thyroid pathology.

General clinical examination of all patients, including palpation of the thyroid gland, biochemical and hormonal blood tests, allowed us to determine the levels of T3, T4, TSH, TPOab.

3. Results Obtained

According to the WHO classification, when comparing the increase rate thyroid gland size upon palpation in women of childbearing age in both groups living in conditions of iodine deficiency, in women with pathologic thyroid gland in group 1, 0th degree of enlargement of the thyroid gland was not observed in any of the patients, in 75 (37.5%) patients 1st degree of enlargement of the thyroid gland was recorded, and in 125(72.5%) patients had a 2nd degree of thyroid gland enlargement.

It was found that 10 (20%) women of childbearing age who do not have history of thyroid pathology, 0 degree of enlargement was detected in the thyroid gland. 28 (56%) women had I degree enlargement, and 12(24%) -2nd degree of increase, i.e. in women with pathologic thyroid glands 2nd degree enlargement occurs 3 times more often compared to women with no thyroid pathologies (Table 1).

Table 1 shows that in women with thyroid pathology in the 1st group, thyroid enlargement was found in higher percentage of cases compared to women in group 2, i.e. increase thyroid gland grade II was found in 125 (65.5%) women of childbearing age with thyroid pathology in group 1, and 12 (24%) in group 2. At the same time, it was found that the enlargement of the thyroid gland in grade II is 3 times greater in patients of group 1 compared to patients of group 2. An enlarged thyroid gland is definitely due to the fact that the Fergana region is a region with high iodine deficiency.

At the next stage, in group 1, the specific changes were studied in the reproductive system in women of childbearing age with various pathologies of the thyroid gland. At this stage the scale studied the prevalence of diseases of the reproductive system, comorbiding with thyroid gland diseases (Table 2).

From the results obtained it is clear that women of childbearing age with thyroid gland pathology and nodular goiter have uterine fibroids - 31(15.5%), cervical erosion - in 14 (7%), uterine fibroids - in 15 (7.5%) women with DTG and cervical erosion - in 7 (3.5%) women. From this it is obvious that the nodular tumors of the thyroid gland, which occur with uterine fibroids and cervical erosions are twice as common. Menstrual cycle irregularities were found in 18 (9%) women with DTG and 6 (3%) women with nodular lesions of the thyroid gland. There was oligomenorrhea found in 2 (1%) women with DTG, in 8 (4%) women with AIT, cystic ovarian changes were found in 7 (3.5%) women with DTG and 18 (9%) women with AIT. This analysis showed that oligomenorrhea and cystic ovarian changes are more common in women of childbearing age with AIT and thyroid diseases, in 3.5% to 9% of the cases.

In the next stage, reproductive system diseases that are more common in women of childbearing age without pathologies of the thyroid gland were analysed (Table 3).

As it can be seen from the table above, when analyzing changes in thyroid indicators in women with thyroid pathology - infertility 2(4%), galactlorhea (1%), uterine fibroids 4(8%), cervical erosion 2(4%), menstrual irregularities 2(4%) women of childbearing age. Oligomenorrhea and malignant cystic changes were not observed in any woman.

Table 1. The degree of enlargement of the thyroid gland according to the WHO classification in women of reproductive age in both groups (determined by palpation)

№ of the group		Thyroid gland increase grade			Overall
		0	1st	2nd	
1st group	Women of childbearing age with thyroid pathology. N=200	0 (0%)	75 (37,5 %)	125 (65,5%)	200 (100%)
2nd group	Women of childbearing age without thyroid pathology. N=50	10 (20%)	28 (56%)	12 (24%)	50 (100%)
	Overall	10 (4%)	103 (41,2 %)	137 (54,8%)	250 (100%)

Table 2. Prevalence of reproductive system diseases in examined women with thyroid pathology of group 1

	Infertility	Galactorrhea	Uterine fibroid	Cervical erosion	Menstrual irregularities	Oligomenorrhea	Ovarian cysts	overall
Nodular goiter	6 (3%)	6 (3%)	31 (15,5%)	14 (7%)	6 (3%)	1 (0,5%)	7 (3,5%)	71 (35,5%)
DTG	8 (4%)	11 (5,5%)	15 (7,5%)	7 (3,5%)	18 (9%)	2 (1%)	7 (3,5%)	68 (30,5%)
AIT	12 (6%)	6 (3%)	8 (4%)	3 (1,5%)	13 (6,5%)	8 (4%)	11 (5,5%)	61 (34%)
Overall	26 (13%)	23 (10%)	54 (27%)	24 (12%)	37 (17,5%)	11 (5,5%%)	25 (16%)	200 (100%)

Table 3. Prevalence of reproductive system diseases in group 2 women without thyroid pathology

	Infertility	Galactorrhea	Uterine fibroid	Cervical erosion	Menstrual irregularities	Oligomenorrhea	Ovarian cysts	Overall
Women without thyroid gland pathologies	2 (4%)	1 (2%)	4 (8%)	2 (4%)	2 (4%)	0 (0%)	0 (0%)	50

Table 4. Identified diseases of the reproductive system according to the functional state of the thyroid gland in the examined women with thyroid gland pathology

	Euthyroidism	Hypothyroidism	Hyperthyroidism	Overall
Infertility	2 (8%)	15 (58%)	9 (34%)	26
Galactorrhea	6 (26%)	11 (48%)	6 (26%)	23
Cervical erosion	11 (46%)	6 (25%)	7 (29%)	24
Uterine fibroid	31 (57%)	8 (15%)	15 (28%)	54
Menstrual irregularities	6 (16%)	13 (35%)	18 (49%)	37
Oligomenorrhea	1 (9%)	8 (73%)	2 (18%)	11
Ovarian cysts	7 (28%)	11 (44%)	7 (28%)	25
Overall	64 (32%)	72 (36%)	64 (32%)	200(100%)

At the next stage, disorders of the reproductive system in women of childbearing age were studied depending on the functional state of the thyroid gland. Study participants with thyroid pathology (first group) were assessed by the functional state of the thyroid gland, the level of thyroid hormones TSH, T3, T4 and TPOab. The purpose of the analysis of these studies was to study the likelihood of developing diseases of the reproductive system in women with various functional conditions of the thyroid gland, depending on the functional state of the thyroid gland (hypothyroidism or hyperthyroidism) (Table 4).

As it can be seen from the table above, diseases identified in the reproductive system in women of childbearing age in a state of hypothyroidism were distributed as follows. Infertility was detected in 15 (58%), galactorrhea - in 11 (48%), cervical erosion - in 6 (26%), uterine fibroids - in 8 (15%), menstrual irregularities - in 13 (35%), oligomenorrhea - in 8 (73%), cystic changes in the ovaries - in 11 (44%) women. However, in women with hyperthyroidism, infertility was detected in 9 (34%), galactorrhea - in 6 (26%), cervical erosion - in 7 (29%), uterine fibroids - in 15 (28%), menstrual irregularities - in 18 (49%), oligomenorrhea - in 2 (18%), cystic changes in the ovaries - in 7 (28%). Women with hypothyroidism were found to be 1.5 times more likely to suffer from infertility, galactorrhea, and oligomenorrhea compared to women with hyperthyroidism. However, in women with hyperthyroidism, uterine fibroids and menstrual irregularities are more common than in women with hypothyroidism 15% - 28%, 35% - 49%.

4. Conclusions

1. It was found that in women with thyroid pathology of the first group, compared with women of the second group, the percentage of enlargement of the thyroid gland is significantly higher. Thus, degree II enlargement of the thyroid gland amounted to 125 (65.5%) in women of childbearing age with thyroid pathology of the 1st group, while in the second group this was observed in 12 (24%) women.
2. In women of childbearing age with nodular goiter and thyroid pathology in the first group, uterine fibroids were found in 31 (15.5%) patients, cervical erosion in 14 (7%) women. In women with diffuse toxic goiter, uterine fibroids were found in 15 (7.5%) patients, cervical erosion in 7 (3.5%) women. This shows that thyroid nodules are associated with a twofold increase in the incidence of uterine fibroids and cervical erosion.
3. In women of childbearing age with hypothyroidism, diseases of the reproductive system were distributed as follows: infertility in 15 (58%) women, galactorrhea in 11 (48%), cervical erosion in 6 (26%), uterine fibroids in 8 (15%), menstrual irregularities in 13 (35%), oligomenorrhea in 8 (73%), cystic changes in the ovaries in 11 (44%) women. In women with hyperthyroidism, infertility occurred in 9 (34%) women, galactorrhea in 6 (26%), cervical erosion in 7 (29%), uterine fibroids in 15 (28%), menstrual irregularities in 18 (49%), oligomenorrhea in 2 (18%), cystic changes in the ovaries in 7 (28%) women.

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