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SUBCLINICAL HYPOTHYROIDISM AS A RISK FACTOR FOR MENSTRUAL IRREGULARITIES

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Abstract

This retrospective study examines the frequency and severity of menstrual irregularities in women of childbearing age with subclinical and overt hypothyroidism. Outpatient records of 125 women were studied; manifest hypothyroidism accounted for 64 cases, and subclinical hypothyroidism accounted for 61 cases.

Keywords

hypothyroidism, menstrual cycle, reproductive age.

INTRODUCTION

The thyroid gland is one of the most important parts of the neuroendocrine system, whose hormones influence the development of the reproductive system, the ovarian-menstrual cycle (OMC), metabolic processes, as well as tissue growth and differentiation. Thyroid dysfunction is most often observed during childbearing age and is observed in women 4-5 times more often than in men [1]. The functioning of the thyroid gland and reproductive organs has a close relationship, which is due to the presence of common mechanisms of central regulation. Their activity is regulated by hormones of the anterior lobe of the pituitary gland (follicle-stimulating hormone - FSH, thyroid-stimulating hormone - TSH and luteinizing hormone - LH), the formation of which is controlled by hormones of the hypothalamus.

MATERIALS AND METHODS

LH, FSH and TSH are complex glycoproteins, including α- and β-subunits, while the α-subunits of these hormones are identical, the β-subunits are specific for each of them and determine its activity [2]. The structural similarity in the above hormones allows us to conclude that they have a common precursor and assume that changes in the concentration of some hormones can affect the concentration of others [1]. For adequate development of the reproductive system, the full action of gonadotropins is necessary in conditions of a normally functioning thyroid gland, since maintaining the required level of gonadal activity requires an appropriate level of metabolism, which can only be achieved at a certain level of concentration of thyroid hormones [5]. The close relationship between the reproductive system and the "hypothalamus-pituitary-thyroid" system is confirmed by changes in the thyroid gland during puberty, in various phases of the menstrual cycle, during pregnancy and after its termination, as well as during menopause [4]. Thyroid hormones influence the morphogenesis, maturation and differentiation of oocytes. In addition, the frequency of ovarian-menstrual cycle disorders in women with hypothyroidism is 3-4 times higher than that in women with a euthyroid state [1]. In subclinical hypothyroidism, an increase in TSH in the blood is detected, while the thyroxine concentration remains normal, structural abnormalities of the thyroid gland are not detected by ultrasound diagnostics. Manifest hypothyroidism (clinically pronounced) is

characterized by a sharp increase in the concentration of TSH in the blood with a reduced level of thyroxine concentration [2].

RESULTS AND DISCUSSION

During the study, we conducted a retrospective analysis of outpatient records of women of childbearing age with subclinical and manifest hypothyroidism. Archival material was obtained and processed on the basis of medical institutions. For the analysis, outpatient records of 125 women with subclinical (61 cases) and manifest (64 cases) hypothyroidism were used. The age of the women examined did not have statistically significant differences: 26.52±0.74 years in the group with subclinical hypothyroidism and 27.94±0.88 years in the group with manifest hypothyroidism, respectively. The diagnosis of hypothyroidism was established based on the history, physical examination, ultrasound diagnosis of the thyroid gland, determination of the level of thyroid hormones (TSH, T4) and the concentration of antibodies to thyroid peroxidase (ATTPO). The correspondence of quantitative indicators to normal distribution was assessed using the Kolmogorov-Smirnov test [3]. Statistical processing was carried out using Microsoft Excel version 16.67. Determination of data reliability for independent samples was carried out using Student's t-test.

Through statistical analysis of the obtained material, various types of ovarian-menstrual cycle disorders were identified in 40 women (65.57%) from the group with subclinical hypothyroidism and in 54 women (84.37%) from the group with manifest hypothyroidism. The structure of disorders in women with subclinical hypothyroidism was as follows: opsomenorrhea was noted in 22.95% (14 people), dysmenorrhea in 14.75% (9 people), oligomenorrhea was detected in 18.03% (11 people), amenorrhea occurred in 9 .83% (6 people) of those studied. The structure of disorders in women from the group with manifest hypothyroidism was somewhat different: opsomenorea was detected in 15.62% (10 people), dysmenorrhea – 21.87% (14 people), oligomenorrhea was detected in 25% (16 people), amenorrhea was detected in 14, 06% (9 people), scanty intermenstrual discharge occurred in 7.81% (5 people). Ultrasound examination of the thyroid gland revealed minor areas of hypotrophy and small areas of hypo- and hyperechogenicity in 5 women (8.19%) with subclinical hypothyroidism, while all women with manifest hypothyroidism had moderate diffuse changes in the parenchyma. In the anamnesis, 4 women (6.55%) from the group with subclinical hypothyroidism had spontaneous miscarriages, while in the group with manifest hypothyroidism they were noted by 7 women (10.93%). Infertility was observed in 5 women (8.19%) with subclinical hypothyroidism and in 12 women (18.75%) with manifest hypothyroidism.

CONCLUSION

Based on the results of the study, it was found that the frequency and severity of ovarian-menstrual cycle disorders in women with subclinical and manifest hypothyroidism vary significantly. OMC disorders were identified in 65.57% of women with subclinical hypothyroidism and had the following structure: opsomenorrhea was most often determined, oligomenorrhea was in second place, dysmenorrhea was in third place, and amenorrhea was least often noted.

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WORDLY
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