

Study of the Role of Sex Steroids in the Nodulation of the Thyroid Gland and Uterus

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Abstract: Thyroid function is modulated by genetic and environmental factors, as well as other diseases and drugs such as gonads or sex steroids. The last category of drugs (sex steroids) modulates the activity of the thyroid gland. Gonadal steroids primarily affect thyroid function by altering the clearance of thyroxine-binding globulin (TBG). While estrogen administration leads to an increase in the serum concentration of TBG, androgen therapy leads to a decrease in the level of this binding protein. The influence of gonadal steroids on the clearance and concentration of TCH is modulated by the chemical structure of the steroid used, its chemical structure. This article discusses the role of thyroid sex steroids.

Key Words: Adenomyosis; uterine fibroids; estradiol; estrone; testosterone; prolactin; steroid binding globulin.

Introduction

Given that the uterus is a hormone-dependent and hormone-producing organ, any proliferative processes in it are accompanied by changes in the hormonal background both directly in the tissues and in the peripheral blood. Uterine tissues are recognized targets for sex hormones, in particular estrogens, androgens, and progestins. Normally, endometrial tissue is subject not only to monthly cyclic changes in sex hormones, but also to age-related changes. With the onset of menopause, the production of estrogen by the ovaries decreases sharply and the percentage of "non-traditional" production of sex hormones, in particular, adipose tissue, increases. By the time of menopause, the number of anovulatory cycles sharply increases, which, according to the literature, contributes to increased tissue proliferation [1]. Determining the level of sex hormones in the peripheral blood, although it is the most traditional method for examining women of different ages, does not always illuminate the true picture of the saturation of the organ with sex hormones. According to numerous data, tumor tissues have a complete set of enzymes for the independent synthesis and metabolism of various biologically active substances, including sex hormones, which ensures the complete autonomy of the existence of the tumor [2]. In case of tumor intoxication of the body, the tissues directly surrounding the zone of tumor growth are, first of all, naturally subjected to negative changes [4]. This tissue region may not have cytological and morphological signs of malignant remodeling, but has certain biochemical features inherent in the neoplasm itself. It is believed that changes in metabolic parameters in this region occur much faster and more intensively than in parts of the body remote from the tumor. Moreover, the "tumor field" as a kind of pre-tumor state with undoubted biochemical signs of a neoplastic process, is proposed to be called oncogenic, causing tumors [3]. It can be assumed that the stronger the similarity between the perifocal zone and the tumor, the worse the prognosis of the disease.

Main Part

According to GLOBOCAN [4], more than 500,000 women are diagnosed with cervical cancer (CC) every year in the world, and more than half of the cases die during the first year of the disease. According to Russian statistics, in 2017 the annual increase in the incidence of cervical cancer (CC) averaged 2.1%, the risk of getting CC increased to 8%. In Russia, mortality from cancer is very high, taking the second place among the causes of death of the population [5]. In 2017, 290.7 thousand patients died from malignant neoplasms in Russia, which is 15.9% of the total mortality structure [4]. A high one-year mortality rate was found in young women who already had stage III-IV of the disease [5].

The etiology of cervical cancer, like most tumors, is unknown, the pathogenesis of the disease is not fully understood, this explains the large number of works devoted to the study of this problem. Recently, in order to understand the biological nature of a tumor, determine the extent of its spread, and predict the course of the disease, they began to actively study the role of molecular biological factors and processes in cervical cancer

tumors [6; 7]. At present, there is an urgent need for an in-depth study of the molecular mechanisms of carcinogenesis of cervical cancer tumors, the identification of their biological potential, the endocrine-metabolic status of tumor tissues, and the determination of markers of the metabolic activity of tumor cells. The increase in the incidence of cervical cancer both worldwide and in Uzbekistan requires the development of new ways to predict the outcome of the disease and the choice of individual approaches in determining the strategy of antitumor treatment [5]. This knowledge is necessary for the development of new methods of antitumor therapy for cervical cancer and to increase the effectiveness of antitumor effects. In this regard, the issue of studying the properties of biological markers that characterize the processes of tumor growth and metastasis remains relevant.

Conclusion

It would be reasonable to evaluate thyroid function in patients with thyroid disease 6-8 weeks after administration or withdrawal of gonadal steroids. The administration of gonadal steroids to patients with thyroid disease causes significant biochemical and clinical changes requiring changes in doses of thyroid drugs. Similarly, gonadal steroid therapy can reveal thyroid disease in previously undiagnosed subjects. It would be reasonable to evaluate thyroid function in patients with thyroid disease 6-8 weeks after administration or withdrawal of gonadal steroids. The administration of gonadal steroids to patients with thyroid disease causes significant biochemical and clinical changes requiring changes in doses of thyroid drugs. Similarly, gonadal steroid therapy can reveal thyroid disease in previously undiagnosed subjects. It would be reasonable to evaluate thyroid function in patients with thyroid disease 6-8 weeks after administration or withdrawal of gonadal steroids.

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