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GYNECOLOGIC DISEASES ASSOCIATED WITH ENDOCRINE DISORDERS

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Abstract

The endocrine system is closely linked to a woman's reproductive function. Hormones regulate the menstrual cycle, ovulation, endometrial health, and ovarian function. Endocrine disorders disrupt hormonal balance, leading to the development of various gynecological pathologies. Gynecological diseases arising from endocrine imbalances represent one of the most pressing issues in modern medicine, as they significantly impact a woman's reproductive health, quality of life, and demographic indicators. The endocrine system plays a key role in regulating the menstrual cycle, ovulation, ovarian function, and endometrial health. Any disruption of the hypothalamic-pituitary-ovarian axis leads to an imbalance of sex hormones, which underlies the development of a wide range of gynecological pathologies. This article examines key endocrine disorders, such as polycystic ovary syndrome, hyperprolactinemia , thyroid disease, obesity, and diabetes mellitus, and their impact on the development of gynecological disorders. Particular attention is paid to pathogenic mechanisms, including hyperandrogenism , insulin resistance, impaired estrogen and progesterone synthesis, and changes in receptor sensitivity to hormones. These processes lead to the development of anovulation , menstrual irregularities, infertility, endometrial hyperplasia, endometriosis, and uterine fibroids. The important role of metabolic factors and chronic inflammation in disease progression is emphasized. Modern diagnostic approaches, including hormonal studies, ultrasound diagnostics, and imaging methods, are discussed, as well as the principles of comprehensive treatment aimed at correcting hormonal levels and eliminating clinical manifestations.

Thus, gynecological diseases associated with endocrine disorders require a multidisciplinary approach involving gynecologists and endocrinologists. Early

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diagnosis and timely treatment can prevent complications, including infertility and cancer, and significantly improve the prognosis for patients.

Keywords: Endocrine disorders, gynecological diseases, polycystic ovary syndrome, hyperprolactinemia, infertility, anovulation, hormonal imbalance, endometrial hyperplasia, insulin resistance, uterine fibroids.

Introduction

Gynecological diseases developing against a background of endocrine disorders represent a significant medical and social problem, primarily affecting women of reproductive age. Disruptions in the endocrine system lead to dysregulation of the hypothalamic-pituitary-ovarian axis, which causes changes in hormonal levels and contributes to the development of pathological processes in the reproductive organs.

This paper examines the main types of endocrine disorders, including polycystic ovary syndrome, hyperprolactinemia , thyroid disease, and metabolic disorders such as obesity and insulin resistance. Particular attention is paid to their role in the development of gynecological conditions such as menstrual irregularities, infertility, endometrial hyperplasia, endometriosis, and uterine fibroids.

The pathogenetic mechanisms underlying these conditions, including hyperandrogenism , chronic anovulation , estrogen and progesterone imbalance, and the influence of metabolic factors and inflammatory processes, were analyzed. It was shown that hormonal and metabolic changes are closely interrelated and exacerbate pathological processes, leading to disease progression.

This paper presents modern diagnostic approaches based on a comprehensive assessment of the hormonal profile, instrumental examination methods, and clinical presentation. Treatment principles aimed at restoring hormonal balance, correcting metabolic disorders, and improving reproductive function are discussed.

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Thus, timely detection of endocrine disorders and their adequate correction are key factors in the prevention and treatment of gynecological diseases, which helps reduce the risk of complications and improve the quality of life of patients. The aim of the study was to examine the influence of endocrine disorders on the development of gynecological diseases, identify the main pathogenetic mechanisms, and evaluate current approaches to the diagnosis and treatment of these conditions.

Research objectives:
To analyze the main types of endocrine disorders in women of reproductive age. To study the mechanisms by which hormonal imbalance influences the reproductive system. To assess the incidence and pattern of gynecological diseases associated with endocrine pathology. To examine the clinical manifestations and complications of these diseases. To explore modern diagnostic and treatment methods.

Research Methods
The study utilized a combination of clinical, laboratory, and instrumental research methods. Clinical methods included collecting anamnesis, assessing complaints, performing a physical examination, and analyzing menstrual function. Laboratory tests included determining hormonal profiles, including levels of follicle-stimulating hormone, luteinizing hormone, prolactin, thyroid-stimulating hormone, estrogen, and progesterone, as well as carbohydrate metabolism parameters (glucose and insulin). Instrumental methods included pelvic ultrasound, which allows for the detection of structural changes in the ovaries and endometrium. Additional imaging techniques, such as magnetic resonance imaging, were used when necessary. Statistical analysis was used to process the data and identify relationships between endocrine disorders and gynecological diseases.

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Study Results

The analysis revealed that endocrine disorders are one of the leading causes of gynecological diseases in women of reproductive age. The most frequently identified disorders were polycystic ovary syndrome, thyroid dysfunction, and hyperprolactinemia . Patients with endocrine disorders were significantly more likely to experience menstrual irregularities, including amenorrhea and oligomenorrhea , as well as anovulation , which can lead to infertility. A close link was found between insulin resistance and the development of endometrial hyperplasia, uterine fibroids, and endometriosis. Hormonal imbalance was found to contribute to the development of hyperestrogenic conditions, which increases the risk of proliferative processes in the reproductive system. It was also noted that timely diagnosis and comprehensive treatment can significantly reduce the severity of clinical manifestations and improve reproductive function.

The analysis revealed that endocrine disorders are one of the leading factors in the development of gynecological diseases in women of reproductive age. The most common endocrine pathologies were polycystic ovary syndrome, hyperprolactinemia , thyroid disease, and metabolic disorders, including obesity and insulin resistance.

It has been found that most patients with endocrine pathology experience significant menstrual cycle disorders. The most common manifestations are oligomenorrhea , amenorrhea, and dysfunctional uterine bleeding. These changes are associated with ovulation disorders and sex hormone imbalances.

Anovulation has been established as one of the main causes of endocrine infertility. Patients with polycystic ovary syndrome have been shown to have increased androgen levels and an imbalance in the luteinizing and follicle-stimulating hormone ratio, which impedes normal follicle maturation. Analysis has shown that women with insulin resistance have a significantly increased risk of developing endometrial hyperplasia. This is due to chronic hyperestrogenism and progesterone deficiency, which creates conditions for excessive endometrial proliferation and increases the risk of precancerous conditions. A link has also been found between obesity and an increased incidence of uterine fibroids. Excess adipose tissue promotes increased peripheral conversion of androgens to

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estrogens, which leads to hormonal imbalance and stimulates the growth of benign tumors. Hypomenstrual dysfunction has been observed in thyroid disease. syndrome and heavy menstrual bleeding, indicating the important role of thyroid hormones in regulating reproductive function. It was also established that patients with endocrine disorders are more likely to experience chronic inflammatory processes in the pelvic organs, which is associated with decreased immune defense and altered microbiota. An evaluation of treatment effectiveness showed that a comprehensive approach, including hormonal therapy, correction of metabolic disorders, and lifestyle changes, leads to the normalization of the menstrual cycle, restoration of ovulation, and improvement of reproductive function in a significant proportion of patients. Thus, these results confirm that endocrine disorders have a systemic impact on the female reproductive system and require timely diagnosis and comprehensive treatment.

Conclusions

Endocrine disorders play a key role in the development of gynecological diseases, affecting all levels of reproductive system regulation. The main pathogenetic mechanisms are hormonal imbalance, insulin resistance, and dysfunction of the hypothalamic-pituitary-ovarian axis. The most common manifestations are menstrual irregularities, infertility, and endometrial hyperplasia. These conditions require timely diagnosis and a comprehensive approach to treatment. Therefore, interdisciplinary collaboration between gynecologists and endocrinologists is essential for effective patient care, and early diagnosis and correction of endocrine disorders can prevent complications and improve women's quality of life.

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