



## **MODERN METHODS OF DIAGNOSTICS OF HYPERANDROGENIA IN GYNECOLOGY**

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### **Abstract:**

Polycystic ovary syndrome is the leading cause of hyperandrogenism in gynecological practice. Hyperandrogenism, anovulation, and specific echographic features support this syndrome. For diagnosis, history data, specific clinical manifestations, ultrasound data, hormonal tests and laparoscopy are used.

**Keywords:** Hyperandrogenism, polycystic ovary syndrome, medical history, clinical data, hormonal confirmation, laparoscopy.

**RELEVANCE. IN** practical gynecology, the concept of hyperandrogenism or hyperandrogenism refers to a pathological condition caused by the production of an excess amount of androgens in a woman's body. As a result of serious disorders in the hypothalamus-pituitary-ovaries-adrenals system, this condition is accompanied by hirsutism, pathology of metabolic processes, menstrual irregularities, miscarriage and, almost always, infertility.

In clinical practice, several clinical forms of hyperandrogenism have been described:

- Ovarian hyperandrogenism - occurs in various forms of polycystic ovary syndrome and androgen-producing ovarian tumors.

- Adrenal hyperandrogenism is caused by excessive production of androgens by the adrenal cortex, which is characteristic of congenital adrenal hyperplasia or virilizing tumors of the adrenal glands.

- Hyperandrogenism in the defeat of the hypothalamic-pituitary region: Itsenko-Cushing's disease, Morgagni-Stuart-Morel syndrome.

- Hyperandrogenism in violation of the reception and metabolism of androgens in the skin, which manifests itself in the form of various forms of hirsutism.

For a practicing gynecologist, the first two forms of the disease are of the greatest importance, because they directly affect the menstrual and reproductive function of women. This publication discusses modern methods for diagnosing PCOS. When examining patients with infertility, having hirsutism and hyperandrogenism, adrenal hyperandrogenism is diagnosed in 30% of cases, ovarian - in 12%, mixed - in 53%.

The classic manifestation of ovarian hyperandrogenism is polycystic ovary syndrome, a

pathological condition most commonly encountered in gynecology, especially among patients with various menstrual irregularities and infertility. An analysis of numerous publications on the diagnosis and treatment of PCOS indicates a significant variability in the clinical manifestations of the disease, despite the same principle of selecting patients - the presence of cystic ovaries [3, 5, 14, 21, 22].

It should be emphasized that when taking an anamnesis in patients with suspected PCOS, attention should be paid to the menstrual and reproductive function of the mother. The main complaints of the patients are: infertility (35-74%), hirsutism (17-83%). However, it should be noted that so far there are no uniform criteria for diagnosing PCOS, and this mainly happens when the diagnosis is made using only one clinical or laboratory method of research.

After summarizing the results of studies on this issue, criteria were proposed that most accurately allow the diagnosis of this disease [6, 8, 11, 23]: clinical, ultrasound, hormonal, laparoscopic, pathomorphological.

A characteristic clinical manifestation of this syndrome is a menstrual cycle disorder in the form of oligomenorrhea (84%), amenorrhea (10%), and less often DMC (6%) against the background of chronic anovulation [1, 12, 24]. PCOS does not develop in patients with a regular cycle in the presence of ovulation and a corpus luteum, so this diagnosis cannot be made in this group of patients.

Primary infertility is diagnosed in 71-98%. Hirsutism is observed in 45-60% of patients, which is almost always combined with an increase in the level of androgens of ovarian and / or adrenal origin. An increase in BMI over 25 is detected in every second patient with PCOS. Some authors believe that hirsutism



and lipid metabolism disorders are not mandatory for PCOS and can occur with similar frequency in other endocrine diseases, while menstrual and reproductive dysfunction are constant symptoms of this disease.

Depending on the form of PCOS, the clinical manifestations of the disease may vary. So, with a combined ovarian-adrenal form, there is a later menarche (16-18 years), amenorrhea, primary infertility, pronounced hirsutism on the face, limbs, and body. Intersex body type predominates: tall, long limbs, broad shoulders, narrow male pelvis and male type of subcutaneous fat distribution. In this case, there is an underdevelopment of the mammary glands and genital organs, but the clitoris can be enlarged, the ovaries are always enlarged, dense, mobile with a smooth surface. In the central form of the disease, the anamnesis indicates the presence of functional or organic diseases of the nervous system in the next of kin, a burdened obstetric history in the mother. Patients complain of headache, fatigue, poor memory, rapid weight gain. They have a hypersthenic physique with deposition of fat on the abdomen, thighs, and chest. Menstrual irregularities are the same as in other forms of PCOS. A gynecological examination determines scant pubic hair, a decrease in the size of the uterus and an increase in the ovaries. [15, 17, 18]

With PCOS, the following hormonal changes are determined:

- Increase in the level of LH more than 10 mIU /;
- LH/FSH index rises in all patients more than 2.5 times;
- Anovulation, confirmed by low levels of progesterone in the second phase of the cycle, occurs in all patients;
- The level of androgens increases in 60-70% of patients. The level of total testosterone is more than 2.5 nmol / l;
- The level of ovarian and adrenal (testosterone and dehydroepiandrosterone) androgens increases in 25-30% of patients;
- Decrease in the concentration of sex steroid-binding globulins;
- Increases the level of free testosterone and estradiol;
- Prolactin increases in 30-35% of patients.

PCOS often co-occurs with insulin resistance.

On ultrasound, PCOS is characterized by a decrease in the anterior-posterior size of the uterus with a simultaneous increase in the size and volume of the ovaries. The volume of the ovaries is more than 10. There is a thickened capsule and multiple subcapsular cysts of small sizes, there is hyperplasia of the stroma and theca cells with areas of luteinization. There are 12 or more cystic-atretic follicles with a diameter of 2-9 mm. [7, 9, 10, 13].

Laparoscopic signs of PCOS include:

- Bilateral ovarian enlargement;
- Smooth, shiny shell of the ovary, in 90% of cases dense or thickened;
- Pronounced vascular pattern on the surface of the ovarian membrane;
- Multiple follicles, translucent through the shell and well defined when cut;
- Lack of free peritoneal fluid in the retrouterine space.

Concomitant gynecological pathology is found in most patients with PCOS. This manifests itself most often in the form of ovarian cysts (dermoid, fibroid, endometrioid, etc.), benign tumors of the uterus, external genital endometriosis, adhesions in the pelvis and pathology of the fallopian tubes [2, 4, 12, 18, 20].

A very important component of the examination of patients with PCOS is the determination of the condition of the endometrium. The risk of developing atypical hyperplasia and endometrial cancer in patients with relative and absolute hyperestrogenism is very high. For this purpose, the appointment of hysteroscopy with subsequent diagnostic curettage of the endometrium and its pathomorphological examination is considered reasonable.

To morphological and morphometric parameters in PCOS, to confirm the diagnosis, the presence of the following signs is mandatory:

- Increase in the number of primordial, maturing and cystic-atretic follicles;
- Lack of corpus luteum;
- Thickening and sclerosis of capillaries;
- Thickening of the tunica albuginea.

An analysis of literature data, as well as observation of women with infertility, demonstrates that the diagnosis of PCOS can be made as accurately as possible based on the totality of the described criteria, which will largely determine the effectiveness of subsequent treatment, especially in patients with impaired reproductive function.

## REFERENCES

1. Азизова М.Э. Синдром поликистозных яичников с позиций современных представлений // Казанский медицинский журнал. - 2015. - № 1. - С. 77-80
3. Гродницкая Е.Э., Ильина Н.А., Довженко Т.В., Латышкевич О.А., Курцер М.А., Мельниченко Г.А. Синдром поликистозных яичников - междисциплинарная проблема // Доктор.ру. - 2016. - № 3. - С. 59-65
2. Sabirovna I. N. et al. THE ROLE OF HOMOCYSTEIN IN THE PATHOGENESIS OF POLYCYSTIC OVARIAN SYNDROME IN WOMEN // Research Focus. – 2023. – Т. 2. – №. 2. – С. 81-84.



3. Nabieva F.S., Rayimova F.S., Abdusamatov B.A. Artificial intelligence in medicine //Web of Scientist: International Scientific Research Journal. – 2022. – Т. 3. – №. 5. – С. 23-27.
4. Юсупова Н. А., Бердиярова Ш. Ш., Юлаева И. А. Ретроспективный анализ состава микрофлоры сигмоидной неовагины //Вестник науки и образования. – 2021. – №. 3-2 (106). – С. 107-109.
5. Даминов Ф. А. и др. Хирургическая тактика лечения диффузно-токсического зоба //Академический журнал Западной Сибири. – 2013. – Т. 9. – №. 1. – С. 21-21.
6. Даминов Ф. А. и др. Синдром кишечной недостаточности и его коррекция у тяжелообожженных //Журнал Неотложная хирургия им. ИИ Джанелидзе. – 2021. – №. S1. – С. 20-21.
7. Tursunov F.O'. et al. ASSESSMENT OF CARBOHYDRATE METABOLISM IN PATIENTS WITH DIABETES AND COVID-19 //Research Focus. – 2022. – Т. 1. – №. 4. – С. 52-55.
8. Feruz O'ktam o'gli T., Mengdobilovich M. N. ANALYSIS OF GLYCEMIA AND GLUCOSURIA IN PATIENTS WITH DIABETES AND COVID-19 //Open Access Repository. – 2023. – Т. 4. – №. 2. – С. 177-181.
9. Kudratova Z. E. et al. Chlamydial Infections (Intracellular Infection) in the Development of Bronchitis //TJE-Thematics journal of Education ISSN. – 2021. – С. 2249-9822.
10. Erkinovna K. Z., Berdirasulovich K. G., Andreevna Y. I. The importance of some laboratory indicators in lung diseases //Вестник науки и образования. – 2020. – №. 22-2 (100). – С. 70-72.
11. Kudratova Z. E. et al. Frequency of atypical microflora in children with acute obstructive bronchitis //Web of Scientist: International Scientific Research Journal. – 2022. – Т. 3. – №. 4. – С. 1454-1460.
12. IN Sabirovna, IB Fikriyevich, BS Shukurullayevna Clinical picture of hypoxic-ischemic encephalopathy in newborn with different gestation date - Thematics Journal of Microbiology, 6 (1), 2022
13. Кудратова З. Э. и др. АТИПИК МИКРОФЛОРА ЭТИОЛОГИЯЛИ Ў ТКИР ОБСТРУКТИВ БРОНХИТЛАРИНИНГ Ў ЗИГА ХОС КЛИНИК КЕЧИШИ //Research Focus. – 2022. – Т. 1. – №. 4. – С. 23-32.
14. Nabieva F.S., Umarova S.S., Ruzmetova. S.U. Use of Saccharomyces cerevisiae for obtaining conjugates for ELISA //Thematics Journal of Microbiology. – 2022. – Т. 6. – №. 1.
15. Бердиярова Шохида Шукуруллаевна, Юсупов Шухрат Абдурасулович, and Юсупова Наргиза Абдикодировна. "Клинико-лабораторная характеристика хронического гематогенного остеомиелита." //Вестник науки и образования 10-2 (113) (2021): 63-66.
16. Бердиярова Ш.Ш., Юсупова Н.А., Murtazaeva N.K., Ibragimova N.S.. " CLINICAL AND LABORATORY FEATURES OF CHRONIC HEMATOGENIC OSTEOMYELITIS ". // Central Asian Research Journal For Interdisciplinary Studies (CARJIS) Issue 1 | 2022. (35-43 сг)
17. Sabirovna I. N., Kizi U. S. I. FEATURES OF THE COURSE OF POSTPONED PREGNANCY //Research Focus. – 2023. – Т. 2. – №. 1. – С. 236-240.
18. Бердиярова Ш.Ш., Юсупов Ш.А., Назарова Г.Ш. "КЛИНИКО-ЛАБОРАТОРНЫЕ ОСОБЕННОСТИ ХРОНИЧЕСКОГО ГЕМАТОГЕННОГО ОСТЕОМИЕЛИТА". //Central Asian Research Journal For Interdisciplinary Studies (CARJIS) Issue 5 | May, 2022. (116-125 сг)
19. Berdiyarova Sh.Sh., Yusupova N. A., Murtazaeva N. K., and Ibragimova N. S.. "Clinical and laboratory features of chronic hematogenic osteomyelitis". // Thematics Journal of Microbiology 6, no. 1 (2022).
20. Tursunov F.O'. et al. QANDLI DIABET VA COVID-19 BILAN KASALLANGAN BEMORLARDA GLIKEMIYA VA GLYUKOZURIYA TAXLILI //Journal of new century innovations. – 2023. – Т. 23. – №. 1. – С. 94-98.
21. Юсупова Н. А., Бердиярова Ш. Ш., Юлаева И. А. ГЕМАТОЛОГИЧЕСКИЕ ХАРАКТЕРИСТИКИ ФАКТОРОВ РИСКА И ОЦЕНКА ПРОГНОЗА ПРИ COVID-19 //Вестник науки и образования. – 2021. – №. 5-2 (108). – С. 25-29.
22. Mansurov T. T., Daminov F. A. LAPAROSCOPIC ADHESIOLYSIS IN TREATMENT OF ACUTE ADHESIVE INTESTINAL OBSTRUCTION //Conference Zone. – 2021. – С. 141-142.
23. Nabieva F. S., Fayzullayeva K. B., Rayimova F. S. The importance of enzyme immunoassay in the diagnosis of infectious diseases //Central Asian Research Journal for Interdisciplinary Studies (CARJIS). – 2022. – Т. 2. – №. 10. – С. 46-49.
24. Nabieva F. S., Mamatkulova F. Kh. - Significance of Enzyme Immune Analysis in the diagnosis of infectious diseases. Thematics Journal of Microbiology, 2022