

## **FEATURES OF THE COURSE OF POLYCYSTIC OVARY SYNDROME IN ADOLESCENTS**

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### **ANNOTATION**

It is known that in almost all women with polycystic ovary, insulin resistance, that is, their sensitivity to insulin, the pancreatic hormone, which regulates blood sugar, is reduced. All this leads to the fact that insulin circulates in large quantities in the blood. According to studies, it can be assumed that increased insulin stimulates the excessive production of male sex hormones and androgens, which disrupt the structure and functions of the ovaries.

First, androgens negatively affect the ovulation process, without which pregnancy is impossible, which prevents the normal growth of eggs. Under the influence of male hormones, the outer shell of the ovaries thickens, and the ripe follicle cannot release the egg outside and is involved in the fertilization process. The unexploded follicle is filled with fluid and becomes a cyst, the same happens in other follicles - they stop working mature and become cysts. Thus, the ovaries of a woman with polycystic disease are the accumulation of many small cysts. For this reason, the ovaries in PCOS are larger than usual.

### **PCOS symptoms**

PCOS symptoms are diverse. The first thing that a woman usually pays attention to is irregular periods. Menstrual delay in PCOS can be several months or even six months. Violation of the hormonal function of the ovaries from the puberty period, the violation of the cycle begins with menarche and is not prone to normalization. It should be noted that the age of menarche is in the population - 12-13 years old (in contrast to adrenal hyperandrogenism in adrenogenital syndrome, menarche is delayed). In about 10-15% of patients, menstrual irregularities are characterized by dysfunctional uterine bleeding against the background of endometrial hyperplastic processes. Therefore, women with PCOS

are at risk of developing endometrial adenocarcinoma, fibrocystic mastopathy, and breast cancer.

The mammary glands are properly developed, every third woman has a developing fibrocystic mastopathy against the background of chronic anovulation and hyperestrogenia.

In addition to menstrual disorders, hair growth is observed throughout the body due to an increase in male hormones (hirsutism). The skin becomes oily, acne and dark spots appear on the face, back, chest. It is characteristic that dark brown spots appear on the skin along the inner surface of the thighs, elbows, armpits. Due to the malfunction of the sebaceous glands, hair quickly turns into fat. Hirsutism, unlike adrenogenital syndrome of different severity, develops gradually from the menarche period, when hirsutism goes to the menarche, the hormonal function of the adrenal glands is activated during the adrenarche period.

Almost all patients with PCOS have increased body weight. In this case, excess fat is usually attached to the stomach (the "central" type of obesity). Due to elevated insulin levels in PCOS, the disease is often combined with Type 2 diabetes. PCOS promotes the early development of vascular diseases such as hypertension and atherosclerosis.

Finally, one of the main and unpleasant symptoms of PCOS is infertility due to lack of ovulation. Most often, primary infertility (in 85% of cases), i.e. there was never a pregnancy. Sometimes infertility is the only symptom of polycystic ovary. Unlike Adrenal hyperandrogenism, infertility is of the first degree, in which pregnancy is possible and its miscarriage is characteristic.

Since there are many symptoms of the disease, PCOS can be confused with any dysormonal disorder. Oily skin, acne and acne at a young age are taken for natural age-related properties, while problems with increased hair and excess weight are often perceived as hereditary properties. Therefore, if menstruation is not disturbed and the woman is not yet trying to get pregnant, then such patients rarely see a gynecologist. It is important to know that any such manifestations are

not the norm, and if you find such symptoms in yourself, you should consult a gynecologist-endocrinologist.

Structural changes in the ovaries in PCOS are characterized by:

stromal hyperplasia,

hyperplasia of theca cells with luteinizing sites,

the presence of follicles that suppress the bladder with a diameter of 5-8 mm,

located under the capsule in the form of "corals" ,

ovarian capsule thickening

PCOS diagnostics include:

-detailed examination and examination of the gynecologist-endocrinologist.

On examination, the doctor will record an increase in ovaries and external signs of PCOS

- Ultrasound of the pelvic organs with a Vaginal sensor. A study of the circumference of the ovaries revealed a large number of new follicles up to 10 mm, with a significant increase in the size of the ovaries

Clear criteria for the echoscopic picture of PCOS: the size of the ovary is more than 9 cm<sup>3</sup>, hyperplastic stroma is 25% of this volume, more than ten atrial follicles up to 10 mm in diameter, located under the thickened capsule. The size of the ovary is determined by the formula:  $V = 0.523 (L \times S \times H) \text{ cm}^3$ , where V, L, S, H are the size, length, width and thickness of the ovary, respectively, 0.523 - constant coefficient. Due to hyperplastic stroma, an increase in the size of the ovaries and the characteristic location of the follicles help to separate the polycystic ovary from the normal (on 5-7 days of the cycle) or multicellular cell. The latter is characteristic of early puberty, hypogonadotropic amenorrhea, long-term use of CoC. Multicellular ovaries are characterized by ultrasound with a small number of follicles with a diameter of 4-10 mm. Located along the ovary, the usual appearance of the stroma and, most importantly, the normal size of the ovaries (4-8 cm<sup>3</sup>).

- study of hormones in blood plasma (LH, FSH, prolactin, free testosterone, DHEAS, 17-OH progesterone). Hormones should be taken on certain days of menstruation, otherwise learning will not be useful. LH, FSH and prolactin donate free testosterone and DHEAS, 17-OH progesterone, on day 3-5, on day 21-22 of the cycle. As a rule, with polycystosis, the level of LH increases (an increase in the ratio of LH / FSH to 2.5), prolactin, testosterone and DHEA-s, FSH and 17-OH progesterone are lowered.

- biochemical blood test (PCOS, cholesterol, triglycerides and glucose levels can be increased);

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