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Syndrome of Emerging Polycystic Ovaries in Modern Gynecology

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ABSTRACT

Polycystic ovary syndrome (PCOS) is a chronic condition in which a woman does not have or rarely ovulates, i.e. a mature egg does not leave the ovary for fertilization by a sperm. Otherwise, this condition is called polycystic ovaries, or Stein—Leventhal syndrome. It is accompanied by reproductive disorders (inability to get pregnant and give birth to a child), metabolic disorders and psychological problems.

One of the most important tasks of endocrine gynecology is the early detection of violations of the formation of reproductive function. Given the incompleteness of the development of the reproductive system during puberty, gynecological diseases in girls proceed differently than in adults, in addition, there are a number of pathological conditions that are not characteristic of adult women. The formation of PCOS in girls is often associated with the period of puberty and is a "extended" process in time. In this regard, in the practice of a pediatric gynecologist, it is most advisable to use the term - forming polycystic ovary syndrome (PCOS). The syndrome of forming polycystic ovaries (PCOS) as the cause of the first signs of menstrual irregularities is well known to reproductologists and gynecologists all over the world [1]. This term is new, collective, and the pathogenetic aspects of the disease are not fully understood. Its main manifestation is ovarian hyperandrogenism, which is accompanied by a violation of the cycle in combination with structural morphological changes in the ovaries [2]. Gynecological

diseases during puberty proceed differently than in adults, and there are a number of pathological conditions that are not typical for fertile women [3]. Polycystic ovary syndrome (PCOS) is one of the most pressing problems in gynecological endocrinology [4]. The frequency of occurrence of PCOS in reproductive age is 5-10%. Among the patients of gynecologists-endocrinologists, about 30% and in the structure of endocrine infertility reaches 75% [5]. PCOS is a socially significant endocrine pathology that leads to infertility, more frequent development of depression in young patients and reduces the quality of life of these women [6]. PCOS is a polyendocrine syndrome, possibly genetically determined, accompanied by impaired ovarian function (absence or irregularity of ovulation, increased secretion of androgens and estrogens), pancreas (insulin hypersecretion), adrenal cortex (hypersecretion of adrenal androgens and hypophysis), hypothala [5] PCOS is a genetically determined, multifactorial disease, the variety of its biochemical and clinical manifestations is determined by the influence of various endogenous and exogenous factors [7].

The diagnostic criteria for PCOS are hyperandrogenism, ovarian dysfunction and their polycystic morphological structure. The association of PCOS with impaired reproductive function is well known, but PCOS is also inherent in other metabolic disorders that can have a negative impact on the reproductive health and quality of life of women [7]. The above problems are relevant in the Republic of Uzbekistan as well, in the literature there are few scientific works devoted to this problem. In connection with the above reasons, the solution of the above problems through the implementation of the planned research work is timely and relevant.

Clinical picture of PCOS

The clinical evaluation should include a complete history and physical examination, as well as arguments regarding the differential diagnosis. Most patients do not meet the stringent criteria for the diagnosis of FPCJ mentioned above, therefore a thorough examination, blood tests, and other diagnostic procedures are necessary. In addition, physicians should pay particular attention to metabolic disorders and overweight, as they can be potential targets for therapeutic intervention**.**

Assessment of menstrual irregularities and ovulation

Menstrual irregularities and ovulation disorders should be primarily assessed according to the patient's age. In fact, age is an important factor in the clinical assessment of women with suspected PPCOS. In the perimenarcheal phase, adolescent girls may experience a transient state of anovulation and irregular menstruation. Therefore, it can be difficult to make a correct clinical diagnosis of ovarian dysfunction. Two decades ago, Apter and his co-workers [20] found that when using sequential measurements of progesterone in adolescent girls, more than 80% of cycles are anovulatory during the 1st year after menarche, 60% during the 3rd year, and 25% after the 6th year. years are still anovulatory. Interestingly, the same authors found that anovulatory, otherwise normal menstruating adolescent girls are often characterized by increased levels of total testosterone and LH [21]. These results were confirmed in a later study using liquid chromatography and mass spectrometry (LC-MS / MS) -based menstrual phase reference intervals for the circulating androgen profile in young women, showing that a subset of anovulatory otherwise normal, late adolescent women were characterized by mild but significant androgen imbalances [22]. In the absence of clinical hyperandrogenism, it cannot be ruled out that even "physiological" anovulation after menarche may be associated with incomplete maturation of the hypothalamic-pituitary-ovarian axis, which, in turn, leads to an increase in androgen production [10]. On the other hand, it may represent an early phase of a potential

predisposition to developing PCOS later in life, especially in those who develop overweight. An increase in the level of LH in the blood reflects an altered pulsation of LH with an increase in the number and amplitude of hormone impulses [11]. Interestingly, it was found that in adolescents with impaired pulsation of LH and increased levels of testosterone in the blood, these changes can persist in many of them, while in others they can be fully restored [13]. At present, there are no clear guidelines for the diagnosis of PCOS in adolescence, therefore special attention should be paid to diagnostic conclusions, and careful observation should be recommended to evaluate persistent oligomenorrhea or amenorrhea as a potential early clinical sign of PCOS, especially when it persists 2 years after menarche. [eighteen].

Assessment of clinical hyperandrogenism

Clinical hyperandrogenism (hirsutism, acne, or alopecia) is an important cornerstone in diagnostic work [14]. Hirsutism often occurs during adolescence and can get worse over time. Hirsutism can be assessed using the modified Feniman and Golloway scale [14,16]. Although it has become very popular, being simple, convenient, cheap and fast, it has been shown to exhibit great variability between observers. Therefore, its reliability can be questioned, especially in patients with borderline presentation of hirsutism. In addition, the thresholds are probably inappropriate, and how to interpret the predominant facial hirsutism of greatest concern in many women is still a matter of interpretation [18]. Obviously, the thresholds should be interpreted according to race and ethnicity. Currently, it is suggested that the threshold for detecting whole body hirsutism should be 8 or higher, while a threshold of 3 or higher is suggested for women in the Far East who rarely develop hirsutism. Specific metabolic pathways of testosterone in the air follicles may be involved in explaining the different characteristics of populations of Asian women [19].

Acne can be a common manifestation of hyperandrogenism in adolescence and, less commonly, in adulthood. In some cases, a family history of acne. Typical acne breakouts vary in severity. Androgenic alopecia is relatively less common, especially during adolescence. Androgenic alopecia can be classified using well-known subjective methods such as the Ludwig scale [18].

Virilization symptoms are very rare in women with PCOS; however, they need to be investigated. Their presence (especially increased muscle mass, deepening of the voice, or clitoromegaly) may indicate an underlying ovarian or adrenal neoplasm or a classic form of previously undiagnosed congenital adrenal hyperplasia [5].

Overweight and obesity assessment Overweight and obesity are very common in women with PCOS. For many years, it was assumed that their prevalence was significantly higher in the SFPKJ population compared to the general population. Overall, there is no doubt that there is a strong association between overweight and PCOS, and there is some evidence that the prevalence of PCOS may increase with increasing BMI [11]. On the other hand, recent studies have provided some evidence of referral bias in the SPPJD phenotype, primarily caused by obesity and the severity of the disease burden, and that women with PPCJ seeking clinical care tend to have a more severe PPCJ phenotype and are more obese [13]. Therefore, a more accurate picture of the relationship between PCOS and obesity can be provided by studies in which PCOS is detected by screening an unselected or minimally biased population.

In adolescent girls, weight gain often precedes menstrual abnormalities, so weight history should be carefully recorded, including potential factors associated with or responsible for weight gain. In this context, serious stressful events should also be investigated, whether they

precede weight loss or, often, weight gain. Finally, previous dietary treatment or eating disorders should be investigated. Birth weight and subsequent catch-up should also be recorded, as there is strong evidence that these very early events may predispose to obesity at a later time [12, 18]. Certainly, these data can help to understand the pathophysiology and development of obesity and PCOS.

Family history

Family history can play an important role in the clinical approach to PPCJ. In fact, an increased risk of PCOS has been documented in sisters and daughters of women with PCOS. Familial hirsutism, acne, menstrual irregularities, obesity, and type 2 diabetes mellitus are all potential factors indicating the risk of developing PPCJ [12]. It should be remembered that the same signs and symptoms may also indicate disorders such as nonclassical congenital adrenal hyperplasia.

Laboratory tests.

Although a diagnosis of hirsutism does not necessarily reflect high levels of circulating androgens, testing for blood androgen levels is a must for the determination of PIPEC. It is important to recognize that the current analytical characteristics of analytical methods are relatively imprecise and their specificity and accuracy may be low, especially in the normal range of androgen levels in women, which is below 1 ng / ml [4]. In contrast, modern technologies such as liquid chromatography combined with tandem mass spectrometry (LC-MS / MS) show good accuracy, sensitivity and high accuracy. LC-MS / MS has recently been introduced in many laboratories and is expected to become widespread throughout the world in the next few years.

Testosterone is considered the primary androgenic biomarker for determining biochemical hyperandrogenemia. We recently obtained reference values for many androgens as measured by LC-MS / MS in large and well-defined populations of healthy, normal adolescents in late adolescence (16–19 years of age) and premenopausal women. In these women (n = 133), the level of testosterone in the blood, a key biomarkerhyperandrogenaemia in women with PPCOS, never exceeded 0.55 ng / ml, while in postmenopausal women (n = 53) the highest values were 0.45 ng / ml. The control values for androstenedione did not exceed 2.2 ng / ml and 1.0 ng / ml, respectively. Finally, in healthy late adolescent girls with normal ovulation (Tanner stage 4–5), we found that the lower and upper reference limits in the follicular phase were 0.124 ng / ml (0.102–0.148) and 0.438 ng / ml (0.398). –0.482), respectively, for testosterone and 0.393 ng / ml (0.323–0.469) and 1.546 ng / ml (1.381–1.727) for androstenedione [12].

Other biochemical tests

Since lipid abnormalities are very common in women with PPSJ, monitoring fasting lipids is prudent. In addition, an oral glucose tolerance test should be performed in the presence of risk factors for T2DM and in obese women with PPCJ [18].

Although indices of insulin resistance can be derived from the relationship between the concentration of glucose and insulin in the blood both on an empty stomach and after a glucose tolerance test, it should be borne in mind that they are relatively imprecise on an individual basis [16]. However, at normal fasting glucose values, fasting insulin levels can predict insulin resistance by about two-thirds when measured using the clamp method [15].

Ovarian morphology by ultrasound

By definition, according to current diagnostic guidelines [4], evaluation of a typical PCO by ultrasound (possibly transvaginal) is required to complete a complete diagnostic examination. It should be noted that this largely depends on the available technology and the subjective assessment of the operator, therefore, the cooperation of an experienced gynecologist is often required. Over the past 20 years, the consensus on the diagnosis of PCOS has proposed a threshold for determining PCOS by the presence of 12 or more follicles with a diameter of 2–9 mm [4]. Recently, given the impressive improvement in resolution with modern technology, it has been determined that the most accurate way to determine PPCOS in clinical practice should be by estimating the number of follicles per ovary with a threshold of ≥25, provided that new technologies are used. whereas ovarian enlargement should be assessed if such technologies are not available

Anthropometry

To calculate BMI, you need to measure height and weight (kg / m 2). The distribution of body fat can be estimated by measuring the circumference of the waist and hips. In fact, only the waist and waist-to-hip ratio (WHR) are good predictors of increased abdominal (visceral) fat [40]. In addition, they can add additional information about the cardiovascular risk profile for individual women. In addition to obesity, the presence of buffalo hump and supraclavicular fat may indicate the presence of Cushing's syndrome.

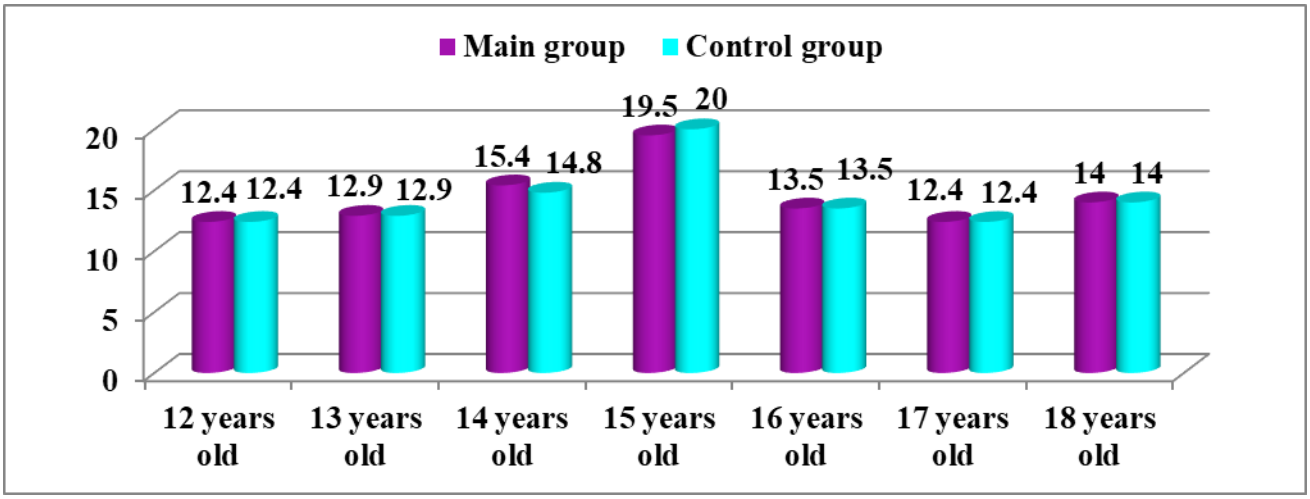
Dermatological manifestations

Hirsutism, acne, and androgenetic alopecia should be investigated in all patients with PPCOS using the available scores as described in the Assessment of Clinical Hyperandrogenism. It is imperative to distinguish hirsutism from hypertrichosis, excessive growth of androgen-independent hair, vellus, visible in non-sexual areas and, as a rule, familial or caused by systemic disorders (hypothyroidism, anorexia nervosa, malnutrition due to other prolonged food intake). porphyria and dermatomyositis) or drugs (phenytoin, penicillamine, diazoxide, minoxidil, or cyclosporine) [24]. As reported above, it has been indicated that hair growth on the face may be more significant than on other parts of the body [24, 28]. On the other hand, this requires more specific research. In many cases, the help of a dermatologist should be recommended, who is much more confident in using more extensive diagnostic methods, including pulling and weighing hair in a specific area, standardized photographs, and assessing hair density in specific areas of the scalp.

Purpose of the developed methodological recommendation

Treatment of hormonal and biochemical diagnostic criteria for developing polycystic ovary syndrome in girls.

Material and methods.



The study involved 180 girls aged 16-19, students of schools and secondary specialized educational institutions, with menstrual irregularities, living in the city of Bukhara, in the period from 2018-2020. Of this number, 30 "practically" healthy girls were also included in the study to interpret and compare the results obtained. The age characteristics of the surveyed are presented in Fig. 1.

Fig. 1. Age structure of the surveyed groups

According to the figures, the age characteristics of the surveyed girls between the groups were identical.

The average age of menarche in the main group was 12.8 ± 1.9 years and was slightly lower than the average age of menarche in the control group - 12.2 ± 1.7 years, however, no significant differences were found. In the control group, the age of menarche was somewhat lower.

The age of the appearance of the first menstruation in the main and control groups is reflected in Fig. 2.

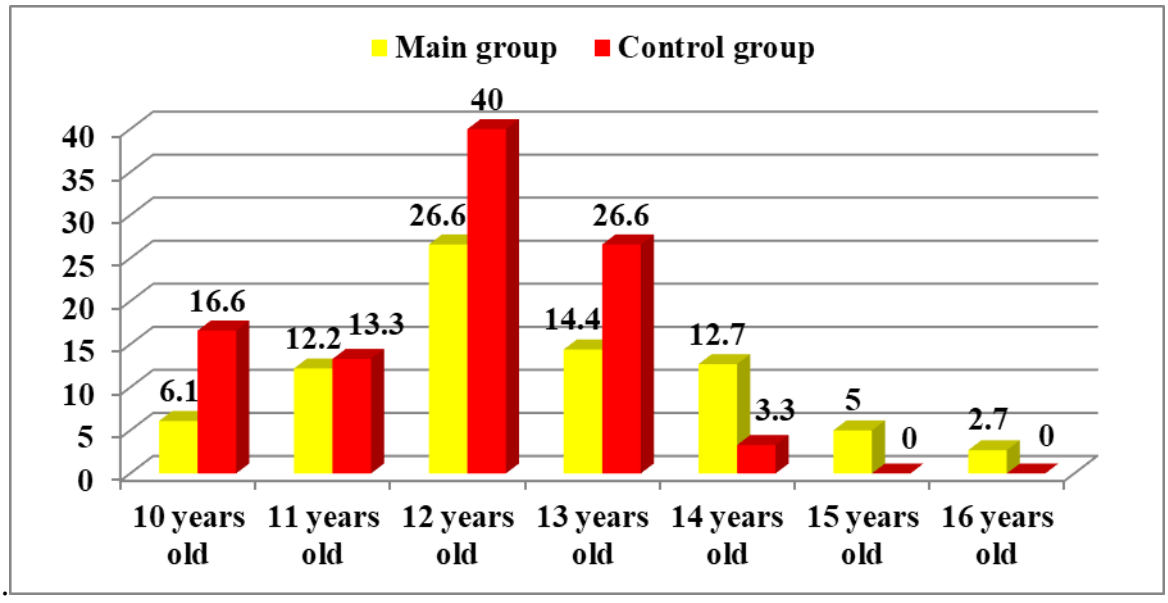


Fig. 2. Age of menarche in the surveyed groups

The hirsut number in subgroup 1 corresponded to 5.7 ± 0.1 points and was practically comparable with the same indicator in the control group - 4.6 ± 0.5 points (p> 0.1) and practically did not differ from the average norm of the hirsut number. typical for girls. Table 1 reflects the score of the hirsut number in the examined groups, depending on the age of the

patient.

Table 1

Assessment of the hirsut number in the examined groups depending on the patient's age - the hirsut number, in points (M ± m).

Age at menarche , age	Main group n=180	Control group n=30
12	4,5± 0,7	4,4+ 0,8
13	5,6± 0,1	4,5±1,2
14	5,7+ 0,3	4,6± 0,4
15	4,7± 0,8	4,5± 0,5
16	7,6± 0,1	4,6± 1,5
17	8,7± 0,5	4,6± 0,9
18	9,7± 0,1	4,6± 1,1

Notes: the reliability of the difference in indicators in patients of the main group in relation to the data of the control group - * <0.05; ** <0.001

To assess the degree of obesity, a number of anthropometric indicators were determined: body weight, height, body mass index (BMI) (body weight, kg / height, m2), type of distribution of adipose tissue with excess body weight according to the ratio of waist circumference (OT) to hip circumference (OB) (OT / OB> 0.85 is regarded as an abdominal type, OT / OBO, 85 is regarded as a gluteofemoral type of distribution of adipose tissue). Table 2.29 reflects the average values of height, body weight and BMI in girls of the main and control groups, depending on age.

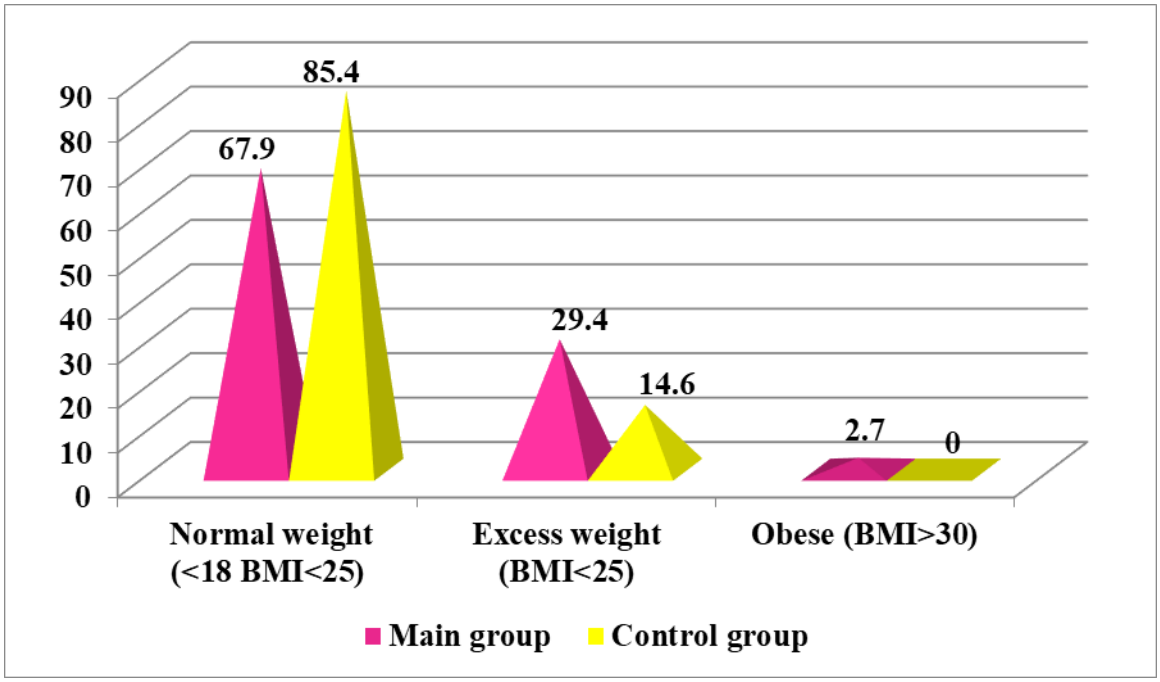


Fig. 3. Frequency of different BMI variants in the study groups

In the main group, 122 (67.9%) patients were of normal body weight (BMI <25). 53 (29.4%) had excess body weight (25 <BMI <30), 5 (2.7% o) had first degree obesity (30 <BMI <32). In the control group, excess body weight was noted less frequently than in the main group in 25 (85.4%) - normal body weight and in 5 (14.6%) - excess body weight) (P <0.05). Patients with increased body weight were found in each subgroup, i.e. regardless of diagnostic criteria.

Table 2.

The hormonal background of blood in the pubertal period of the development of reproductive function on the 5-7th day of the menstrual cycle, M ± m .

Average values	Age (years)						
	12	13	14	15	16	17	18
Main group (n = 180)							
Height (cm)	156 , 27 ± 0.38 *	160 ± 0.4 *	161.08 ± 0.4	160.8 ± 0.4	161.69 ± 0.3	162 ± 0.7	161.87 ± 0.5
Weight body (kg)	63.8 ± 2.62, 9.08 *	63.92 ± 2.93, 10.15 *	61.08 ± 2.86, 10.32 *	62.6 ± 1.36.6.09	63.46 * 2.27, 8.19 *	61.42 ± 1.6 , 5.76	65.9 * 2.21, 7.96 *
BMI	25.8 ± 1.11, 3.68 *	25.02 ± 1.24, 4.28 *	23.56 ± 1.15, 4.13 *	24.21 ± 0.51, 2.29 *	23.6 ± 0.86, 3.11 *	23.4 * 0.59, 2.05	25.2 * 0.88, 3.18 *
Control group (n = 30)							
Height (cm)	153.74 ± 0.76	158.1 ± 0.19	160.8 ± 0.34	163.3 ± 0.64	163.7 * 0.41, 2.84	164.2 * 0.62, 4.16	164.7 * 0.55, 3.92
Body weight (kg)	47.27 ± 0.42, 2.84	49.89 ± 0.48, 3.32	53.8 ± 0.43, 3.17	67.3 ± 2.0, 7.80 *	59.9 * 0.54, 3.79	59.6 * 0.6, 4.0	60.33 * 0.44, 3.16
BMI	19.84 ± 0.19, 1.24	19.98 ± 0.20, 1.33	20.8 ± 0.21, 1.54	25.27 ± 0.81, 3.15 *	22.4 * 0.21, 1.48	22.13 * 0.24, 1.6	22.26 * 0.17, 1.24

Based on the data presented in Table 2., it was noted that the patients of the main group had a tendency to an increase in body weight and BMI compared with the control group, regardless of age. The average BMI in the main group - 24, 92 ± 0.16 kg / m, was significantly higher than in the control group - 21, 42 ± 0.12 kg / m ($p < 0.05$).

The studies included the determination of sexagenic hormones (FSH, LH, PRL, Te, E2), adaptive-metabolic orientation (TK, T4, TSH, K) and catecholamines (norepinephrine, adrenaline). The content of hormones and catecholamines was determined in peripheral blood serum by the enzyme-linked immunosorbent assay (ELISA) on a Stat Fax 2100 analyzer.

Determination of blood hormone levels was performed using standardized WHO reagents. The coefficient of variation is shown in Table 3.

Table 3

The hormonal background of blood in the pubertal period of the development of reproductive function on the 5-7th day of the menstrual cycle, M ± m.

Groups	Age (years)	LH, IU / l,	FSH, IU / l	Prolactin, mIU / L	Estradiol pg / l	Progesterone, nmol / l	Testosterone, nmol / l	Cortisol, nmol / l	DHEA-S
The main	15	9.2 + 0.3 *	4.0 ± 0.2	256 + 67.1	288 ± 40.5	1.9 ± 0.5	2.9 ± 0.2 *	241.0 ± 34.1	2.8 ± 0.4
	16	12.5 ± 0.3 *	3.9 ± 0.2	253 ± 51.1	224 ± 66.8	1.8 ± 0.5	2.9 ± 0.5 *	278.4 ± 48.3	3.0 ± 0.4
	17	11.9 + 0.8 **	4.7 ± 0.2	304 + 32.8	232 + 44.8	1.8 + 0.5 *	2.4 + 0.2 **	248.1 ± 20.8	2.8 ± 0.4
	18	10.1 ± 3.1 **	4.9 + 0.3	234 ± 11.2	178 ± 14.4	1.3 ± 0.3 *	2.5 + 2.1 **	347.0 ± 33.6	4.1 ± 0.4
Control	15	5.2 ± 0.3	4.6 + 0.2	301 ± 52.4	245 ± 22.8	2.6 ± 0.5	1.6 ± 0.2	203.0 ± 87.6	3.1 ± 0.4
	16	4.9 ± 0.3	4.6 + 0.2	242 ± 56.4	186 ± 32.8	2.1 ± 0.5	1.4 ± 0.2.	214.0 ± 68.6	3.2 ± 0.4
	17	5.1 ± 0.3	4.8 + 0.2	276 + 26.4	201 ± 32.8	2.3 + 0.5	1.7 ± 0.2	294.0 + 20.4	3.4 ± 0.4
	18	6.1 ± 0.1	5,7 ± 0, 2	252 ± 4 9.2	214 ± 1 4.4	2.1 ± 0.1	1.5 + 0.2	304.0 ± 2 2.1	3.54 ± 0 4

As can be seen from the presented table 3, testosterone (Te) was produced in girls of the main group in a significantly greater amount than in the control, while the secretion of estrogen (E2) was both increased and normal, and the secretion of progesterone (Pr) was significantly reduced. ($p < 0.05$). The production of gonadotropic hormones in the main group also significantly differed from that in healthy girls - there was a tendency to a decrease in the release of FSH, with a significant increase in the level of LH.

Attention was drawn to the tendency to an increase in K secretion ($p < 0.01$) in girls, which is obviously associated with the activation of the adrenal cortex.

In the control group, the LH level regularly decreased from 15 to 16 years old and increased from 17 to 18 years old. FSH levels regularly increased from the age of 15 to 18 years. The LH / FSH ratio had the greatest value (2.1 ± 0.2) at the age of 15, which allows us to consider this age as critical in terms of the formation of reproductive pathology. The BPD level

also naturally increased from 12 to 14 years old, then decreased from 15 to 16 and increased by the age of 17. The E2 level naturally increased from 12 to 14 years old. At the age of 14, Er reached its maximum value, then the level of this hormone decreased slightly and by the age of 17-18 it reached the level characteristic of the reproductive period. Pr increases naturally with age. The highest level of Pr was detected in 15 year old girls of the control group - 2.6 ± 0.5 nmol / L. The level of Te also increased from 12 to 18 years old, but was the maximum - 1.7 ± 0.2 nmol / L in 17 ™ year old girls. We also found a direct correlation between an increase in the level of Te and an increase in the level of K (r = + 0.48, r = ± 0.08; 1: = 10, p> 95.0%).

Due to the fact that the age range of the onset of menarche has wide ranges of fluctuations, and menstrual cycles in the first years after menarche are more often anovulatory, the comparison of hormone levels in girls under 14 years old was carried out on days 5-7 of the menstrual cycle, and in the absence of a cycle, the determination of hormones was carried out arbitrarily. For girls 14 years old and older - hormones were determined 3 times during the menstrual cycle - in phase I, during the period of expected ovulation and in the middle of phase II (on days 5-7, 14-15, 21-24 of the menstrual cycle).

Considering the biochemical parameters of women with PCOS, it should be noted that their determination is of particular importance in the choice of therapy for the disease and the duration of preparation.

The results of the biochemical parameters of the blood of women in the compared groups are presented in table. 4.

Table 4

Biochemical parameters of the examined groups (M ± m)

Indicator name	Limit values	Group girls		P $_{1-2}$
		Main (n = 78)	Control room (thirty)	
Total protein	65-85	62.8 ± 1.4	66.4 ± 1.3	> 0.05
Creatinine	27-71	49.5 ± 2.4	52.6 ± 2.1	> 0.05
Urea	3.3	3.7 ± 0.6	3.9 ± 0.5	> 0.05
Total bilirubin	6.6	19.8 ± 1.3	14.5 ± 1.5	<0.05
ALT	0.1-0.68	0.65 ± 0.04	0.46 ± 0.02	<0.001
AST	0.1-0.45	0.39 ± 0.03	0.22 ± 0.01	<0.001
Total cholesterol	3.6-5.2	7.2 ± 0.05	4.4 ± 0.03	<0.001
HDL	0.86-2.28	1.47 ± 0.04	1.42 ± 0.01	<0.001
LDL	1.95-4.51	3.8 ± 0.03	2.8 ± 0.01	<0.001
SZhK	0.28-0.89	1.8 ± 0.4	0.7 ± 0.1	<0.05

Note: p is an indicator of the reliability of data differences among girls of the compared groups.

Analyzing the results of biochemical studies in women of the compared groups, we note that the most significant differences in biochemical parameters in the groups were obtained by parameters such as cholesterol content - in the main group it was 7.2 ± 0.05 mmol / l, in the comparison group 5.9 ± 0.03 mmol / L (p <0.001), HDL -1.47 ± 0.04 µol / L and 1.12 ± 0.01 µmol / L, as well as LDL 3.8 ± 0.03 µmol / L and 2.8 ± 0.01 µmol / L (p <0.001), respectively.

Significant changes were also observed for free fatty acids 1.8 ± 0.4 mol / L and 0.7 ± 0.1 mol / L, respectively ($p < 0.05$). On average, the atherogenic coefficient in the main group was 3.9 ± 0.02, while in the comparison group it was 2.0 ± 0.03 ($p < 0.001$).

The rest of the average values of biochemical parameters were within the normal range, and the differences in the main and control groups were determined by a wide range of individual parameters.

Many adults diagnosed with PPCJ show symptoms as they age. Addressing this condition and early investigation are important in developing treatment and prevention strategies to minimize the long-term health consequences of PPCJ. An examination for psychological stress is recommended. Diagnosis of PCOS in adolescents is problematic, since the criteria are less reliable than in the adult population. There is no need to make a definitive diagnosis before starting treatment. Early detection of comorbid conditions and targeted treatment with a focus on lifestyle changes are key to reducing the risk in girls with this chronic condition.

Social value.

Forming polycystic ovary syndrome (PCOS) is one of the most common endocrine diseases in women. The reported prevalence of FPCJ in the community is 6-10%, depending on which criteria are used to define it. PCOS is characterized by ovulatory dysfunction, hyperandrogenism, and polycystic ovary morphology (PPCO) as measured by ultrasound. Despite the high prevalence of this condition, there is controversy over the optimal diagnostic criteria and treatment for adolescents. Hyperandrogenism is the most consistent characteristic of PCOS in both adults and adolescents.

The greatest danger posed by disease is infertility. Based on the findings of many years of practice, gynecologists argue that the impossibility of getting pregnant occurs only in the absence of timely treatment for polycystic ovary disease. Most women with this condition are fertile. Possible complications of hormonal dysfunction of the gonads, persistent metabolic disorders in the body, severe obesity, creating a risk of heart attack, stroke, polyarthritis, type II diabetes mellitus (non-insulin dependent), hypertension, blood clotting disorders, thrombosis of vessels of various sizes, impaired fertility (ability to reproduce offspring), difficult to correct production of androgens (male hormones). Professional diagnosis of polycystic ovary disease in the early stages prevents complications, preserves the woman's reproductive function, and increases the chances of having healthy children.

The goals of treatment for FPCOS are: elimination of manifestations of androgen-dependent dermatopathy, normalization of body weight and correction of metabolic disorders, restoration of the ovulatory menstrual cycle and fertility, prevention of late complications of the reproductive system.

The first stage of treatment for FPCOS is a lifestyle change. In patients with overweight body weight - normalization of weight-and-height ratios due to weight loss with subsequent correction of metabolic disorders.

For normalization of body weight, drugs belonging to the group of sensitizers (metformin, glucophage) and glitazones (pioglitazone) are recommended. Application method and doses: the dose of the drug is on average 1.5-2 g /day.

The second line of therapy for menstrual irregularities, hirsutism and acne is monotherapy with combined hormonal contraceptives (COCs) (**Yarina plus**), COCs should be used as first-line therapy for long-term management of patients without reproductive plans. Ovulation induction is an effective treatment for infertility in women with PCOS planning pregnancy. For

refractory ovulation disorders, ovulation inducers can be used. Aromatase inhibitor (**LETROZ**) is an effective drug for the induction of ovulation and the onset of pregnancy in the treatment of infertility in patients with PCOS, is characterized by good tolerance, a low risk of multiple pregnancies and the absence of cases of ovarian hyperstimulation syndrome. Application method and doses: For the induction of ovulation, the patients received letrazole at a dose of 2.5-5 mg / day from the 3rd to the 7th day of the menstrual cycle under the control of folliculometry, ultrasound examination and the level of progesterone in the blood.

Conclusion

Thus, it is possible to distinguish the features of hormonal secretion and biochemical parameters of girls with PCOS, depending on the clinical form of the disease. Patients with metabolic disorders against the background of changes in the lipid profile and liver function had moderate hyperprolactinemia, a decrease in the level of insulin-like growth factor (IGF) against the background of insulin resistance with normal levels of insulin in the blood. At the same time, in girls with PCOS without metabolic disorders, moderate hyperandrogenism came to the fore. On the part of the pituitary structures, both groups were characterized by an increase in the LH / FSH ratio, which was more pronounced in women with metabolic disorders.

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