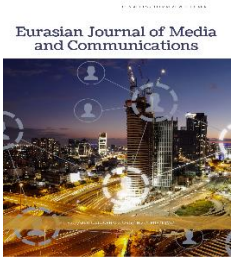

Diagnostic criteria and ways to optimize the treatment of premenstrual syndrome in adolescents

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ABSTRACT

Early detection of violations of the formation of reproductive function in adolescent girls is an important problem in modern gynecology. Taking into account the frequency of hyperandrogenic conditions inherent in the pubertal period (according to different authors, from 25 to 30%), as well as the high frequency of the formation of various disorders of the reproductive system in this category of patients, it is necessary to search for pathological links in the endocrine system that can determine the development of the entire the range of functional and morphological changes.

Keywords: Adolescence, premenstrual syndrome, gynecology

Target:

To develop options for the clinic of menstrual syndrome in adolescents, hormonal levels, differentiated principles of treatment with combined oral contraceptives, depending on the severity of the disease.

The main task:

To identify the frequency of occurrence of premenstrual syndrome among adolescent girls, to determine the state of the hypothalamic-pituitary-ovarian and thyroid systems (follicle-stimulating hormone, luteinizing hormone, thyroid stimulating hormone, prolactin, progesterone, free fractions of thyroxine (T4) and triiodothyronine (T3)) according to the data in adolescent girls of premenstrual syndrome, to assess the level of hormones and indicators of clinical and instrumental diagnostic methods for premenstrual syndrome in adolescent girls, to study the effectiveness and acceptability of hormone therapy (microdose drospirenone-containing combined oral contraceptive (COC) in 24 + 4 mode) in the treatment of girls adolescents with premenstrual syndrome.

Research methods.

Clinical research methods: questioning, anthropometric data (height, weight, body mass index).

Laboratory research methods: General blood test, hormonal research methods (follicle-stimulating hormone, luteinizing hormone, progesterone, testosterone, prolactin, thyroid stimulating hormone, T3, T4).

Instrumental research methods: Ultrasound (uterus, ovaries).

Statistical methods.

Practical research results:

Evaluation of the effectiveness of COCs in the treatment of premenstrual syndrome showed that a more pronounced effect in the treatment of hormonal drugs was observed in relation to psychological symptoms and, to a lesser extent, physical manifestations. In the first month of treatment, there was an increase in the frequency of mastalgia, the intensity of which decreased in the 3rd cycle of treatment.

If before treatment 18 (27.6%) women were worried about pain, by the end of the

observation period more than half of them noted a decrease in pain during menstruation.

Research results and discussion.

For the period from 2018-2021, we conducted a comprehensive study of a teenager (depending on the state of premenstrual syndrome) in 65 adolescent girls with premenstrual syndrome (main group), who were referred to the polyclinic of the 3-village family polyclinic of the Bukhara region. The control group consisted of 45 healthy adolescents.

The stages of the study consisted of a questionnaire to study the prevalence of premenstrual syndrome in adolescent girls, it was carried out on the basis of schools No. 22, 23, 25, 40 of the Bukhara region.

All adolescents observed were between the ages of 14 and 18. The average age in group 1 was 16 ± 2.1 years; in group 2, 17 ± 1.9 years.

The distribution of patients by age is shown in Figure 2.1.

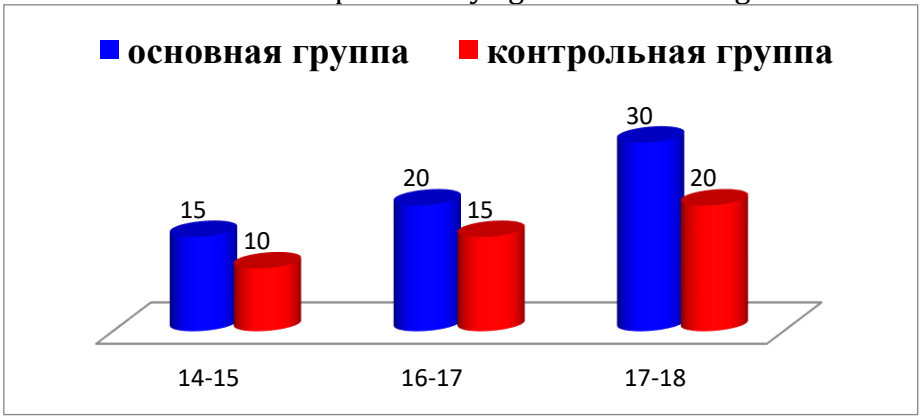

Figure 2.1. Age of adolescent girls surveyed, years

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Index	Группа I (n=65) девушек подросток с ПМС (основная группа)				Группа II (n=45) группу контроля			
	Average	Median	Min	Max	Average	Median	Min	Max
Height **(m)**	1,60	1,61	1,50	1,72	1,58	1,55	1,50	1,82
Weight **(kg)**	52	52	45	60	56,4	56,4	50	61
BMI (kg/m²)	20,6	23,3	18	22	20,1	20	18	22

As can be seen from the figure, in the study groups, compared with the control group, there were 1 times more patients at the age of 18, respectively.

Table 2.1 shows the height and weight indicators of the surveyed adolescent girls. As can be seen from the data presented, there were no significant differences in height, body weight in patients of both groups by the beginning of the study (p> 0.05).

Analysis of the characteristics of the menstrual cycle showed that the age of onset of menarche in patients varied from 12 to 16 years (Figure 2.2).

The greatest time variation in the establishment of menarche at the age of 15 years or more was found in adolescent girls with premenstrual syndrome (main group) (38.4%) compared with the control group - by 22.2%. When analyzing the duration of the

menstrual cycle, there was no statistically significant difference in the groups (P>0.05). The average duration of the menstrual cycle in patients from the control group was slightly longer and amounted to 28 (23-31) days. However, there were no statistically significant differences in comparison with girls from other study groups

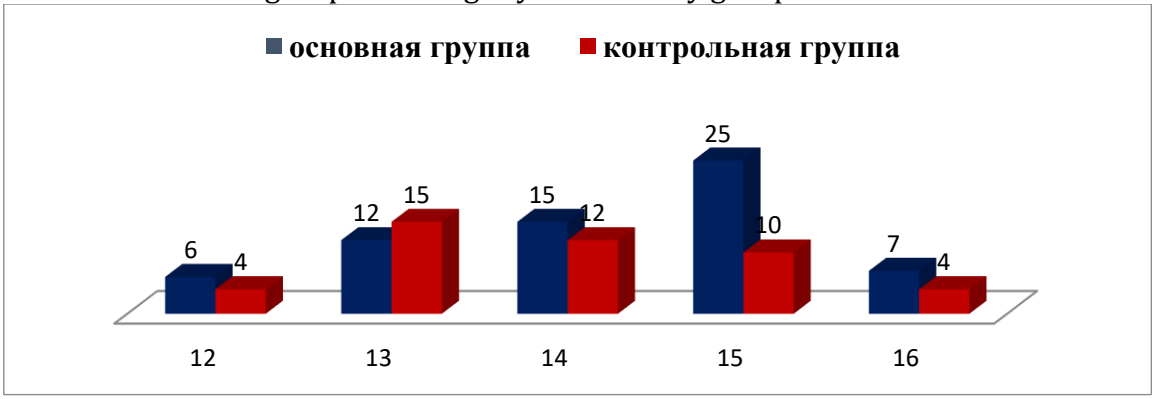

Figure 2.2. Age of onset of menarche, years

In 5 (7.6%) girls of group I, it was noted (delayed menstruation from 42 days to 6 months. Moderate hirsutism was noted in group I 8 (12.3%), in adolescent girls in the control group 2 (4.4%). Acne of varying severity was detected in 22 (33.8%) girls of group I, significantly more often, in the control group - 6 (13.3%) (p<0.05). I would like to note that in the control group, acne was associated with the dynamics of the menstrual cycle, that is, it intensified or manifested itself before the onset of menstruation.

Girls in group I complained of headaches -12 (18.4%), significantly more often than patients in the control group - 1 (2.2%) (p<0.05). However, these complaints were detected reliably more often in the 1st group, compared with the control group - 1 (2.2%). Complaints of dizziness (3 cases; 4.6%), increased sweating (6 cases; 9.2%) were observed only in patients from group 1. In the control group and in girls with these violations, no violations were revealed.

In the clinical picture, both emotional lability I-group 15 (9.09%) and the control group (13.3%) showed emotional lability (sudden mood swings, negative, asthenic experiences, a feeling of somatic ill-being, conflict, fatigue against a background of low tolerance to stress), which may have aggravated the course of the disease. Soreness during menstruation was noted by 25 (38.4%) girls of group I. No significant differences were found. In the control group, there were no signs of menstrual discomfort.

Somatic pathology is a significant risk factor and an unfavorable background for the development of various complications in adolescent girls.

In the structure of morbidity, vulvovaginitis prevailed - in 6 (9.2%), colpitis - in 5 (7.6%) and ovarian cysts - in 4 (6.1%) adolescent girls.

It is noted that the development of premenstrual syndrome in adolescent girls proceeds in conditions of a tense educational process, serious family quarrels, conflicts and physical stress, information stress, and sometimes difficult life situations.

Thus, as a result of the study, it was shown that in the development of premenstrual syndrome in girls, adolescents play an important role in the unfavorable course of serious family quarrels and conflicts. In contrast, adolescent girls with premenstrual syndrome have a leading role of psychogenic stressors, which include family conflicts, computer and educational overloads.

. Taking into account the frequency of hyperandrogenic conditions inherent in the pubertal period (according to different authors, from 25 to 30%), as well as the high frequency of the formation of various disorders of the reproductive system in this category of patients, it is necessary to search for pathological links in the endocrine system that

can determine the development of the entire the range of functional and morphological changes.

Somatic pathology is a significant risk factor and an unfavorable background for the development of various complications in adolescent girls.

One woman in group I had an average of 1.1 previous somatic diseases and 2.4 - infectious diseases. Of the chronic diseases, chronic gastritis was most often noted - in 6 (9.2%), diseases of the urinary system - in 3 (4.6%), chronic tonsillitis - in 9 (13.8%), bone fracture - in 6 (9 , 2%) patients.

Surgery was previously performed in 25 women of group I: 12 (18.4%) - appendectomy, 6 (9.2%) - tonsillectomy, 5 (7.6%) - tubectomy, 6 (9.2%) - scleroplasty, Group II 6 (13.3%) - appendectomy, 4 (8.8%) - tonsillectomy, 2 (4.4%) - tubectomy, 1 (2.2%) - scleroplasty.

In total, the surveyed adolescent girls had 24 gynecological diseases in their anamnesis, with an average of 2.7 per girls in group I and 0.06 of various types of pathological conditions in group II.

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Adolescence is the stage of increased response to sex hormones and stress; the maturation of dopaminergic neuronal circuits is strongly influenced by these factors.

Testosterone, estrogens, and glucocorticoids interact to produce different regionally dependent effects on dopaminergic neurotransmission in the adolescent brain, shaping brain maturation and cognitive function in adolescence and adulthood.

To assess the general condition of healthy girls, the adolescent control group underwent a clinical examination, according to the results of which hypochromic anemia (minimum hemoglobin level 110 g/l) was revealed in 2 (4.4%) girls, while the number of erythrocytes, leukocytes, platelets corresponded to the clinical norm.

To assess the general condition of adolescent girls suffering from premenstrual syndrome, a survey of clinical blood parameters was carried out. According to the results of examinations, anemia was revealed in 11 (16.9%) teenage girls, while the minimum hemoglobin level was 95 g/l, the number of erythrocytes was reduced to 3.6x1012/l. The number of leukocytes and platelets corresponded to the clinical norm.

The main assessed indicators of the clinical analysis of blood in adolescent girls did not differ from the population.

All patients were prescribed a microdose combination drug containing 0.02 mg ethinylestradiol and 3 mg drospirenone (Dimia, Hungary), which the patients took 24/4 for six menstrual cycles. Against the background of the therapy, a significant decrease in the intensity of the manifestations of premenstrual syndrome occurred: after 1 month, internal tension, irritability, and fearfulness decreased, which before treatment bothered 25 (38.4%), after a month of treatment - 28 (43.07%) adolescent girls. By the end of the observation period, these manifestations remained in 16 (24.6%) women ($p<0.05$).

Depression, feelings of sadness and hopelessness before treatment were noted in 26 (40%) patients, by the end of 3 months of treatment in 8 (12.3%) patients ($p<0.05$).

Evaluation of the effectiveness of COCs in the treatment of premenstrual syndrome showed that a more pronounced effect in the treatment of hormonal drugs was observed in relation to psychological symptoms and, to a lesser extent, physical manifestations. In the

first month of treatment, there was an increase in the frequency of mastalgia, the intensity of which decreased in the 3rd cycle of treatment.

Against the background of therapy with a microdose combined hormonal contraceptive drug, a positive therapeutic effect was observed in relation to dysmenorrhea. If before treatment 18 (27.6%) women were worried about pain, by the end of the observation period more than half of them noted a decrease in pain during menstruation.

Thus, the results of a clinical study on the efficacy of a combined microdose contraceptive in the treatment of adolescent girls with premenstrual syndrome led to the conclusion that the hormonal combined microdose contraceptive is highly effective, containing 20 μg ethinyl estradiol and 3 mg drospirenone (Dimia, Hungary) in a 24/4 regimen.

Against the background of the therapy in adolescent girls of the main group, there was a statistically significant decrease in the intensity of the manifestations of premenstrual syndrome, and already during the first cycle of treatment, there was a decrease in appetite, as well as mastalgia.

Conclusions.

1. All adolescents observed were between the ages of 14 and 18. The greatest time variation in the establishment of menarche at the age of 15 years or more. Painful menstruation was observed in 25 adolescents, in whom premenstrual syndrome is more common and becomes severe in the absence of timely treatment.

2. In the development of premenstrual syndrome in girls, a teenager plays an important role in the unfavorable course of serious family quarrels, conflicts. In contrast, adolescent girls with premenstrual syndrome have a leading role of psychogenic stressors, which include conflicts, computer and educational overloads.

3. A study conducted to assess the biological etiology of premenstrual syndrome showed that hormonal fluctuations in estrogen and progesterone, neuroendocrine disorders, estrogen receptor diversity and prostaglandin synthesis play an important role in the development of premenstrual syndrome in most subjects at their age.

4. According to the results of ultrasound, the average body size of the uterus, ovaries and M-echo values of the main group did not differ from the corresponding indicators typical for women in the general population, as well as for patients in group II.

5. The results of the clinical study allowed us to conclude that the hormonal combined microdose contraceptive containing 20 μg of ethinyl estradiol and 3 mg of drospirenone (Dimia, Hungary) is highly effective in a 24/4 regimen.

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