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THE NEUROPSYCHIATRIC STATE OF HEALTH OF MODERN TEENAGE GIRLS

Kenjaeva D. K.
Is a free candidate for the Department of Neurology Samarkand State Medical University

Abdullayeva N. N.
Professor, MD, Department of Neurology Samarkand State Medical University

Kurbanova Z. X.
Resident of the Master's degree of the Department of Neurology Samarkand State Medical University

Annotation: Many scientific papers are devoted to the study of the autonomic nervous system with impaired phases of the menstrual cycle, as it has been established that hormonal changes during the cycle can affect parameters such as heart rate and heart rate variability, which can lead to various manifestations of autonomic dysfunction, research in this direction is relevant and important for further analysis, since they will help to better understand how to manage such conditions in teenage girls. In adolescence, vegetative dysfunctions in girls are caused by the common mechanisms of regulation of endocrine, psychovegetative functions located in the structure of the limbic-reticular complex.

Keywords: menstrual cycle, teenage girls, vegetative changes.

Introduction. The most common and widely discussed problem among diseases of the nervous system is considered to be vegetative disorders. This is due to the large-scale spread of the disease, difficulty in diagnosis, transformation and masking under various symptoms of diseases, and frequent transition to a chronic form. According to WHO, the percentage of people with instability and lability of the autonomic nervous system is increasing every year, and the largest number of the contingent occupies the level among adolescents, and in comparison between gender differences, girls predominate. This feature is interrelated with violations of the stable menstrual cycle on the autonomic nervous system in adolescent girls. Research by experts shows that such disorders can contribute to dysfunction of the autonomic nervous system, which is expressed in various symptoms, including dizziness, fatigue, pain and problems with heart rate regulation.

In particular, postural tachycardia syndrome (POTS) is common in adolescents with such disorders and can significantly impair the quality of life. Methods such as the tilt table test, electrocardiogram (ECG) and blood tests are used to diagnose and treat this condition to rule out other causes of symptoms.

The limbic system is part of the stress system, along with the hypothalamus, and also participates in the affective and motivational component of pain syndrome, being its neuronal substrate. According to G.M.Aronoff and J.B.Feldman (2000), the neurophysiological basis of any emotional stress caused by conditioned reflex psychogenic factors is shifts in the functional state of the limbic system and hypothalamus. The result of the NCANDA study (2021) revealed that adolescent girls have a specific autonomous (vegetative) vulnerability to stressful sleep disorders, compared with adolescent boys, may increase their risk of developing severe neurological disorders (Dilara Yuksel et all 2021). Earlier studies by foreign authors found that during puberty hormones can affect cardiovascular vegetative control and may play a role in the predisposition of adolescent girls to orthostatic intolerance, promote vasodilation, disrupt vasoconstriction, reduce plasma volume, promote hypocapnia and cerebral hypoperfusion and contribute to excessive tachycardia, conducted more than 20 studies (with the inclusion of 1979 participants), where a systematic review and meta-analysis found evidence of reduced parasympathetic regulation, as well as changes: a decrease in electrodermal activity dependent on heart rate variability in adolescent girls against the background of puberty.

Thus, all of the above determines the relevance of a thorough study of the psycho-neurological state of health of modern teenage girls.

The aim of the study was to study the neuropsychiatric and vegetative disorders in girls with menstrual cycle formation disorders.

Research materials and methods. The study was conducted on the basis of the Multidisciplinary Clinic of the Samarkand State Medical University, in the departments of pediatric neurology, the children's department, and the consultative and diagnostic polyclinic (at the Clinic). 47 girls aged 14 to 17 years old with menstrual disorders and manifestations of psychovegetative disorders were under observation. The duration of the disease ranged from 5 months to 1 year, a comparative analysis of the severity of vegetative symptoms, concomitant neuropsychiatric symptoms, was conducted with a group consisting of 25 girls of identical age with vegetative disorders, but without menstrual disorders. In addition, data from a survey of a control group of healthy 25 girls of identical age were used. The main research methods were neurological examination, pediatrician's examination (to exclude chronic somatic diseases), gynecologist's consultation (to confirm the presence of menstrual irregularities). The vegetative status was assessed using the A.M.Vane questionnaire (A.M. Vane, 2000) and the Kerdo index. The psychological examination included the Spielberg-Khanin self-assessment scale, a subjective asthenia assessment scale. The instrumental method of the study was based on the diagnosis of electroencephalography, depending on the level of the menstrual cycle. EEG was performed using standards, background EEG analysis with closed and open eyes and the following functional tests: rhythmic photostimulation, hyperventilation. At the same time, the routine analysis of curves was evaluated by indicators of the general functional state of the brain, with an assessment of the severity of changes in the EEG, the presence of focal and epileptiform activity. Background EEG recording (with eyes closed) was used to register spectral power parameters, and for quantitative analysis of the EEG, sections of the background recording that did not contain artifacts were selected. Statistical data analysis was performed using a software package, on an individual computer, using t-tests, Student criteria (normally). In cases of unreliable distribution and evaluation of quantitative data, the Mann-Whitney criterion was used, while the significance level was assumed to be $p < 0.05$.

Result of investigation. The primary result of the anamnesis in the survey of mothers, girls of the main group (OG-47), showed that in 56% of cases, the mothers of the examined girls had menstrual irregularities in adolescence and in 33% of cases, at the same age, the mothers were observed by a neurologist with a diagnosis of vegetative vascular dystonia.

At the time of examination from the nervous system in patients with OH, headache was considered the main complaint, in almost 82%, and dizziness (not systemic in nature) in 53% of cases, according to the Visually analog scale (VAS), the intensity of headache averaged 5.5 ± 2.5 points in OH. In 5 girls, there was a sudden dizziness with tinnitus, while the skin became pale; signs of a feeling of lack of air were noted in 28% of cases. 3 girls had a history of fainting. In addition, frequent complaints were noted: nervousness, aggressiveness, or lack of desire to learn and communicate, sleep disorders. It should be noted that these signs appeared either during the period of the menstrual cycle, or closer to this period. On the part of the gynecologist's examination, a complaint in the OG was noted in the form of abdominal pain syndrome during menstruation, in 100% of cases, with a duration of 1-4 days, while the intensity of the pain syndrome in the group was 7 ± 1.9 points.

In the comparison group (SG), headache was 83%, on the VAS scale, the average intensity was 6.5 ± 3.5 points; dizziness was 44%; a feeling of lack of air, sleep disturbance, and mental instability were noted in four patients. On the part of the gynecologist, no violations were found (as previously noted). The next stage of the study is to study the vegetative status of patients with OH and SG. Vegetative disorders were detected on the basis of the Wein table, where the difference between the two comparative groups is noted: in the main group, the score was 25 ± 5.8, in the comparative group — 18.6 ± 3.9, as can be seen, the indicators in the OG are significantly higher compared with the SG. At the same time, in GC, the indicator is 9.9 ± 3 points, which reliably indicates an increase in autonomic dysfunction in OH and SG. The value of Kerdo indicators, in comparative groups: in the OH in

patients, an increase in vegetative tone according to the sympathetic type was noted in 84% of cases, and the parasympathetic type was detected in 13% of the initial vegetative tone, while the average Kerdo indicator revealed 18 ± 12, where in the group of healthy girls, this indicator is 2.5 ± 3.5, which is reliable it differs from the main group. In SG, when evaluating the Kerdo index, the predominance of sympathetic vegetative tone was revealed. The result of the analysis indicates the presence of pronounced autonomic dysfunction, and with a high margin towards sympathetic vegetative tone**.**

Table 1 The result of the analysis of the examination of patients on the Spielberg-Khanin scale, on the scale of "Subjective assessment of asthenia"

Indicator		OG	SG	KG
Anxiety	Situational	45,1±10,3***	43,0±9,0***	19,9±9,6
	Personal	44,2±9,8***	25,1±8,1*	15,5±5,7
Asthenia	General	17,0±6,8**	12,4±5,5*	6±2,0
	Mental	20±5,5**	16,1±7,0*	4,5±1,5
	Physical	14,7±3,5*	14,5±3,7*	8,5±2,5

*p<0.05 OG-SG compared to KG

****p<0.01 AH-SG compared to KG

***p<0.05

Anxiety indicators in the studied groups according to the Spielberger-Khanin scale: in comparative groups, there is an increased level of anxiety, while in SG the level of personal anxiety is much higher than in KG, and significantly lower; indicators in OH (where in the group of healthy girls the indicator of situational and personal anxiety was normal). Using the Subjective scale of assessment of asthenic syndrome, asthenization was detected in 80% of cases in the OH, in addition, in the SG, the asthenic syndrome was almost the same level of 78.7%, which indicates significantly high manifestations of asthenia in the OH and SG, compared with KG.

The result of the diagnosis according to electroencephalography revealed the following indicators: in the main group of patients, in 92% of cases, diffuse changes in the bioelectric activity of the brain were detected; the brain in the form of a high-amplitude or low-amplitude alifa rhythm, while there was a transformed fact of sharpness at the apex, an increase in the proportion of the theta wave range, intensification of amplitudes along low-frequency waves of the beta range (more in the occipital areas). In 17.4% of cases, in the same group, simultaneous alifa waves were detected in the frontal zones on both sides of the hemispheres. In 3 patients, the EEG readings were within the normal range, it is important to note that no epileptic or paroxysmal activity was detected in any of the participants in the examination. A characteristic feature of patients with increased anxiety, on the EEG, revealed the predominance of the alifa rhythm acuity, with an increase in the participation of the spectral power of low-amplitude beta waves of high frequency in the occipital area in both hemispheres. In patients with signs of asthenic syndrome, there was a decrease in the spectral power of the theta waves of the range, again in the occipital zone on both sides of the hemisphere, therefore, several types of changes were determined on the EEG images.

Conclusions: Thus, the study showed that in girls during the formation of the menstrual cycle, dysfunctions are possible, which are associated with several factors, one of which is a hereditary predisposition on the maternal side, in addition, an important element is the detection of neuropsychiatric and autonomic disorders, as a result of limbic-reticular changes in the brain, against the background of insufficient adaptive the possibilities of adolescents in conditions of psychoemotional stress. The necessity of a thorough integrated approach to the problem, the use of psychological tests, testing for the level of autonomic disorders, and control of bioelectric activity of the brain is shown. Timely analysis of the result of patients' behavior during the formation of the menstrual cycle, diagnosis and optimization of treatment, is due not only to improving the quality of

life, but also to preventing the likely progression of the disease with the addition of another; psychosomatic pathology.

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