



## **THE RISK FACTORS AND FEATURES OF MENSTRUAL CYCLE DISORDERS IN ADOLESCENT GIRLS WITH DISEASES OF THE CARDIOVASCULAR SYSTEM**

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### **Abstract**

The authors conducted a study on the study of menstrual dysfunction in adolescent girls with diseases of the cardiovascular system at the age of 12-17 years. During the study, risk factors for the development of this pathology were identified according to a survey of mothers of adolescent girls and the structure of menstrual cycle disorders was determined. The possibility of predicting menstrual dysfunction and the need for preventive measures to prevent estrogen deficiency in adolescent girls with cardiovascular diseases has been established.

**Keywords:** adolescent girls, menstrual cycle disorders, cardiovascular diseases, autonomic dysfunction syndrome.

### **Introduction**

In the modern world, the priority areas of medicine are strengthening the health of children and adolescents, improving the reproductive health of the population. An important state task is the preservation of the reproductive health of girls, the birth of a healthy generation in the conditions of the existing unfavorable demographic situation [1].

The protection of the reproductive health of the population, especially children and adolescents, is one of the urgent problems of modern medicine, due to the unfavorable medical and demographic situation and a sharp deterioration in the health of women of fertile age [4].

According to the 2011 recommendations of the International Federation of Gynecologists and Obstetricians (FIGO), the parameters of a normal menstrual cycle include: regularity (with deviations from 2 to 20 days when followed for 12 months), cycle duration - 24-38 days, duration of menstrual bleeding - 4, 5-8 days and the volume of blood loss is from 5 to 80 ml [5].





Menstrual dysfunction, as a result of maladaptive stress-dependent reactions, itself becomes a strong stressor for the body, disrupting the mental and vegetative status of a woman and closing the vicious circle of aggravating maladjustment with a high risk somatization of stress and the formation of pathology of the intra-reproductive system and far beyond it [3].

Currently, the generally accepted term is "abnormal uterine bleeding" (AMB), which was approved at the XIX World Congress of Obstetricians and Gynecologists FIGO (October 4-9, 2009, Cape Town, South Africa) and means any uterine bleeding that does not meet the parameters of normal menstruation in women of reproductive age [6].

This condition affects approximately 30% of women during their reproductive years and has a significant impact on their quality of life [7].

In women, in addition to gender characteristics, it is necessary to take into account the hormonal status in the onset and development of cardiovascular diseases. Due to the presence of proven cardioprotective properties of female sex hormones, the risk of cardiovascular diseases in women during the reproductive period is sometimes underestimated. Hypoestrogenism and relative hyperandrogenism in pre- and perimenopause in combination with autonomic disorders activate the sympathetic and renin-angiotensin-aldosterone systems, form endothelial dysfunction, which leads to the development of arterial hypertension [2, 8].

## **Objective**

to study the structure of menstrual dysfunction and identify factors contributing to the onset of menstrual irregularities in puberty in girls with diseases of the cardiovascular system.

## **Materials and methods**

On the basis of the Bukhara Regional Children's Multidisciplinary Medical Center (BODMMC), 96 girls aged 12-17 years with menstrual dysfunction and concomitant diseases of the cardiovascular system were examined. The control group consisted of 80 healthy, regularly menstruating girls of the same age. All adolescent girls underwent clinical and laboratory-instrumental examination methods (ECG, EchoCG, ultrasound of the uterus and appendages, general and biochemical blood tests). Based on the history and clinical examination, 18 significant factors were identified, under the influence of which the formation of pathology of the reproductive system could occur in the perinatal, prepubertal and pubertal periods.



## Results and discussion

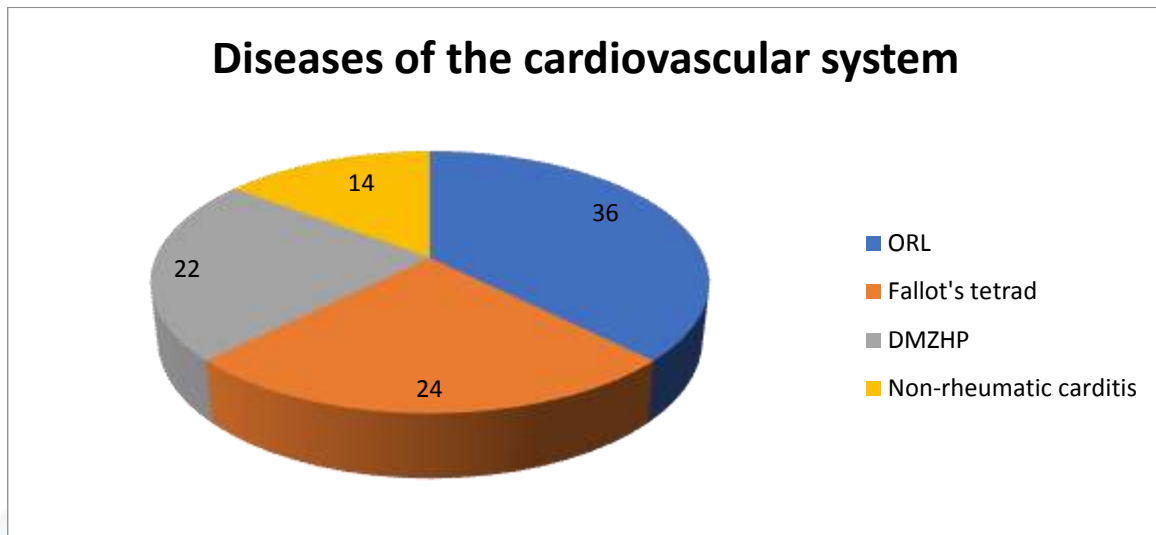
Based on the history and clinical examination of adolescent girls with diseases of the cardiovascular system, and a survey of their mothers, more than 50 putative risk factors were studied, among them 18 most significant were selected that could cause the formation of menstrual dysfunctions. The most significant factors are presented in table. 1.

Table 1. Risk factors for menstrual irregularities in adolescent girls

Nº	Risk factor	Main group (96)		Control group (80)	
		abs	%	abs	%
1	Maternal history of infertility	28	29,2	8	10,0
2	Complicated pregnancy with this child	58	60,4	12	15,0
3	Complicated labor	34	25,0	10	12,5
4	Maternal menstrual dysfunction	46	47,9	22	27,5
5	Frequent SARS (more than 6 times a year)	88	91,7	10	12,5
6	Lag in physical development in a child	72	75,0	-	
7	The presence of euthyroid goiter	66	68,8	24	30,0
8	Lack of secondary sexual characteristics	30	31,25	-	
9	Male pattern hair growth	12	12,5	-	
10	Overweight / Obesity	6	6,25	-	
11	Reduced nutrition	30	31,25	14	17,5
12	Increased mental stress	18	18,75	12	15,0
13	The presence of chronic somatic pathology	96	100,0	-	
14	Unfavorable social conditions	20	20,8	6	7,5
15	Chronic sleep deprivation	14	14,6	10	12,5
16	Frequent exposure to stressful situations	10	10,4	4	5,0
17	Improper and unbalanced nutrition	24	25,0	8	10,0
18	Frequent changes in climate and place of residence	10	10,4	4	5,0



The structure of cardiovascular pathology (Fig. 1) among the studied contingent of patients consisted of patients with acute rheumatic fever (ARF) - 36 (37.5%), congenital heart defects: ventricular septal defect (VSD) - 24 (25%) and tetralogy Fallot - 22 (22.9%) and non-rheumatic carditis - 14 (14.6%).



Picture 1

Dysmenorrhea prevailed in the structure of menstrual irregularities in adolescent girls - 68 (70.8%); oligomenorrhea - 14 (14.6%), menorrhagias were found in 10 (10.4%), amenorrhea in 4 (4.2%), respectively (Fig. 2).

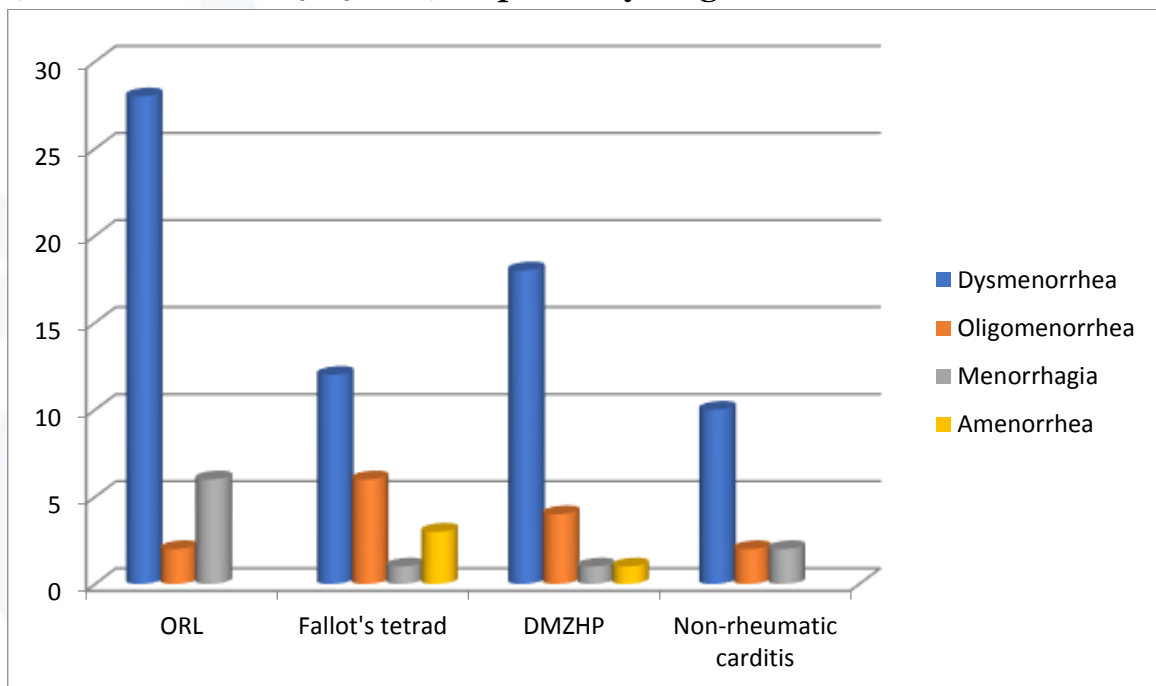


Figure 2.



According to the results of the examination, 50 (52.1%) had iron deficiency anemia of mild and moderate - 16 (16.7%) severity, 20 (20.8%) - latent iron deficiency. In girls with latent iron deficiency, the levels of hemoglobin, erythrocytes, color index, and serum iron were within the normal range.

## Conclusions

Thus, several factors are involved in the occurrence of menstrual irregularities in the surveyed adolescent girls, leading and of which are dysregulation of the ovarian-menstrual cycle, which may originate from the perinatal period of development in the form of complications of the mother's pregnancy. Regulatory disorders are possible due to the influence of somatic clinically significant diseases, such as pathology of the cardiovascular system, alimentary insufficiency, manifested by iron deficiency anemia and iodine deficiency, peculiarities of the nervous system and increased fatigue of a teenager.

Early diagnosis and timely polysystemic correction of emerging menstrual irregularities in adolescent girls can prevent subsequent problems associated with with both somatic and reproductive health.

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