



RISK FACTORS IN THE DEVELOPMENT OF CONGENITAL HEART DEFECTS

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Perinatal risk factors congenital heart.

Was studied perinatal risk factors in 80 infants with congenital heart disease, where poor obstetric history revealed the mother in the I-st trimester, physical illness mother and dysfunctional family.

Было изучено перинатальные факторы риска у 80 детей раннего возраста с врожденными пороками сердца, где выявлено плохой акушерский анамнез у матери в I-м триместере, соматические заболевания матери и неблагополучная семья.

Ключевые слова: дети, факторы риска, врожденные пороки сердца. Юрак тугма нуқсонларининг перинаталь хавф омиллари. 80 та юрак туғма нуқсонли болаларнинг перинатал хавф омиллари ўрганилди ва носоғлом оила фарзанди, онанинг соматик касаллиги, ҳомиладорликнинг 1-учойлигининг ёмон ўтганлиги аниқланди.

Калитли сўзлар: бола, хавф омиллари, юрак туғма нуқсонли.

Relevance of the problem. In the origin of congenital defects, a certain role is played by the influence of environmental factors on embryo- and fetogenesis; genetic inheritance, as well as a combination of these reasons [1, 2].

In this regard, the study of biological, infectious, economic, social and other factors affecting the embryo and fetus is important. The adverse effects of these factors can not only contribute to the development of birth defects, but probably influence the course of congenital heart disease in children, both in infancy and at an early age [3].

One of the objectives of our study was to resolve the problem of the influence of various factors associated with the health of the mother during pregnancy, the fetus and the newborn on the nature and characteristics of the course of congenital heart disease: ventricular defects (VSD) and interatrial septal defects (ASD).

Materials and methods: The work was based on observations and examinations of 80 young children with congenital heart defects and 20 apparently healthy ones. The research was carried out in two stages: at stage I - the study of



perinatal factors, taking into account the clinical and instrumental signs of congenital heart disease in 80 young children. We observed 3 groups of children with defects: 1st group - patients with isolated VSD; 2nd - patients with isolated ASD; Group 3 consists of children with a combination of these defects. The work took into account antenatal history data and the results of ante- and postnatal diagnosis of congenital heart disease. In 57 children, heart defects were diagnosed antenatally, in 13 newborns - in the first days and months of life. In 10 cases, congenital heart disease was detected later, in the first year of life, during an in-depth study during acute illnesses.

The diagnosis of congenital heart disease was established antenatally with ultrasound diagnostics and, subsequently, postnatally - with clinical and instrumental examination using ECG, chest radiography, echocardiography and Doppler echocardiography. When studying the antenatal history, we paid attention to the presence of pathological conditions during pregnancy in the mother: previous respiratory diseases in the first trimester of pregnancy, somatic diseases in women and gynecological pathology. Along with this, congenital heart disease in relatives in the first and second generations was taken into account.

Results and discussion: We analyzed the characteristics of the course of pregnancy in each of the groups, taking into account the following factors: area of residence of the family, dysfunctional families (parental alcoholism), single-parent families, first pregnancy over the age of 30 years, somatic diseases in the mother : anemia of pregnant women, diabetes mellitus, NCD, nephropathy. In addition, a burdened obstetric history was taken into account, including: previous abortions and miscarriages, stillbirths, third or more pregnancies. Attention was drawn to the complicated course of the first trimester of pregnancy: early gestosis, threat of miscarriage, acute respiratory infections of the mother, herpes virus infection.

Late gestosis, disturbances of uteroplacental blood flow, the condition of the placenta, features of the course of labor in the form of incoordination and weakness of labor, cesarean section and premature birth were also included by us in the group of factors taken into account.

In addition, their combinations were not uncommon: option I. - first pregnancy over the age of 30 years, complicated obstetric history, anemia of pregnant women, complicated course of the first trimester of pregnancy, weakness of labor; II - burdened obstetric history, NCD in the mother, late gestosis, disturbances of uteroplacental blood flow, premature birth; III - first pregnancy over the age of 30 years, anemia of pregnant women, complicated course of the first trimester of



pregnancy, cesarean section. Along with this, the following were taken into account: the presence of congenital heart disease in relatives in 1-3 degrees of kinship, 3 or more stigmas of dysembryogenesis in newborns and children of the first years of life; chromosomal abnormalities: Down syndrome, Shershevsky-Turner syndrome, Patau syndrome; intrauterine growth retardation of dysplastic and hypotrophic types, hypoxic-ischemic encephalopathy and hypoxic-ischemic cardiopathy.

The first group was dominated by children living in Surkhandarya (15) and Fergana (12), dysfunctional families 16, single-parent families, first pregnancy in mothers over 30 years old - 21, anemia of pregnant women in 56, early gestosis - 28, neurocirculatory dystonia in 27, nephropathy in 5, diabetes in 2 mothers.

Among the features of the obstetric history, it was established: previous miscarriages - 13, stillbirths - 4, 3rd or more pregnancies - 17, previous abortions - 23. In the first trimester of pregnancy there were: acute respiratory infections in 22 mothers, herpesvirus infections - 4, threat of termination of pregnancy - 43.

Late gestosis occurred in 17, disturbances of uteroplacental blood flow - 34, weakness and incoordination of labor - 33, premature birth - 13, cesarean section - 22, a combination of factors: a) variant I of combinations - 28; b) II variant of combinations - 24; c) III variant of combinations - 11 (Table 1).

Most children in this group have 3 or more stigmas of dysembryogenesis - 18, chromosomal diseases: Down syndrome - 7, Patau syndrome - 2, the presence of congenital heart disease in relatives in the 1st generation - 2, in the 2nd - 3, in the 3rd - 2.

In addition, intrauterine growth retardation of the fetus was determined by the dysplastic type - 22, by the hypotrophic type - 30. The majority of children had signs of hypoxic-ischemic encephalopathy, half of them had manifestations of hypoxic-ischemic cardiopathy (Table 1).

In the second group - children with congenital defects of the interatrial septum, there were 11 age-old first-time mothers, with the highest frequency of families living in Navoi (8) and Kashkadarya regions (7).

The obstetric history of mothers is less burdened than that of women of group 1. At the same time, there were 15 stillbirths, 9 previous abortions, 11 previous miscarriages. During the first trimester of pregnancy, the greatest role was played by: acute respiratory infections in the mother - 12, there were 6 threats of termination of pregnancy. Late gestosis - 8. disorders of uteroplacental blood flow amounted to 10, weakness of labor and cesarean section did not exceed their number in group 1,



although premature birth (11) and a combination of various factors (18) were less common.

Hypoxic-ischemic encephalopathy and cardiopathy occurred with equal frequency in groups I and II. In the second group of children, intrauterine growth retardation of the dysplastic type was noted less often than in the others - b, body weight retardation - 8. Stigmata of dysembryogenesis - 6, chromosomal diseases were detected in isolated cases. No congenital defects were registered in relatives (Table 1).

In children, hypoxic-ischemic encephalopathies and cardiopathy were concomitant.

Consequently, an unfavorable combination of these factors, which have a significant impact on the formation of the cardiovascular system, often leads to the occurrence of severe heart defects.

It was established that variant 1 of the combination of factors occurred more often than others. At the same time, the leading factors in the development of the analyzed heart defects are late pregnancies, a burdened obstetric history, complicated course of the first trimester of pregnancy, etc. This indicates, first of all, the multifactorial nature of these defects.

The results of exposure to unfavorable perinatal factors can manifest themselves in the period of neonatal adaptation and in the further development of the child.

Table 1

Frequency of occurrence of factors in congenital heart defects in children

№	Factors	Children's groups		With a congenital heart defect
		1 гр.	2 гр.	3 гр.
		π = 40	π = 28	π = 12
1	2	3	4	5
2	Families:	16	10	4
	a) socially problematic			
	б) incomplete	6	11	2
3	First pregnancy over 30 years old	21	15	5
4	Somatic diseases of the mother:			
	a) anemia in pregnancy	28	15	7
	b) NCD in mother	17	15	6



	c) diabetes	2	-	1
	d) nephropathy	5	-	3
5	Characteristics of obstetric history:			
	a) early gestosis	28	7	11
	b) previous abortions	22	9	4
	c) previous miscarriages	13	11	1
	d) stillbirth	4	9	1
	e) three or more pregnancies in a row	17	11	2
6	A complex course in the first trimester of pregnancy:			
	a) risk of miscarriage	13	6	5
	b) acute respiratory infections	22	12	3
	c) herpes virus infection	4	-	1
7	Late gestosis	17	8	5
8	Violation of blood exchange between the uterus and placenta	14	16	5
9	Slow birth process			3
10	Improper delivery	16	10	2
11	With a significant change in the placenta	7	11	2
12	The practice of caesarean section	12	14	2
13	Premature birth	13	11	1
14	The presence of family ties between relatives	7	-	1
15	Chromosomal abnormalities:			
	a) Shereshevsky-Turner s-m	-	-	1
	b) Patau s-m	2	-	-
	c) Daun s-m	7	10	-
16	Dysembryogenesis stigmas 3 or more	18	6	5
17	intrauterine growth restriction			
	a) by dysplastic type	22	6	4
	b) hypotrophic type	6	9	3
19	Hypoxic-ischemic encephalopathy	28	15	7
20	Hypoxic-ischemic cardiopathy	12	14	5



Conclusions.

1. In the first group, the leading factors, in terms of frequency of occurrence, are: somatic diseases of the mother, complicated course of the first trimester of pregnancy, disturbances of uteroplacental blood flow and various combinations of these factors.

2. In the second group, the following factors predominate: a burdened obstetric history, somatic diseases of the mother; acute respiratory infections of the mother suffered in the first trimester of pregnancy; variant combinations were found much more often.

3. The third group of children was distinguished by the predominance of a combination of the 1st (10) and 11th (8) variants of perinatal factors.

LITERATURE

1. Boqueria J.I.A. Modern society and cardiovascular surgery // Abstracts of cardiovascular surgery. - Novosibirsk. - 1999. - S.

2. Serdyuk N.A. Assessment of functional reserves of the myocardium in patients with heart defects in the prognosis of their surgical treatment. Author's abstract. dis. ... doc. honey. Sci. - Yerevan. - 1988. - 34 p.

3. Shkolnikova M.A. Pediatric cardiology in Russia at the turn of the century // Bulletin of Arrhythmology. - 2000. - No. 18. - P.15-22.