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SOME ASPECTS OF HYPOXIC DAMAGE TO THE CENTRAL NERVOUS SYSTEM OF NEWBORNS, OCCURRING IN THE PERINATAL PERIOD

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Key words: newborns, risk factors, perinatal encephalopathy of hypoxic origin, relative risk, reliability.
Tayanch so‘zlar: chaqaloqlar, xavf omillari, perinatal ensefalopatiya, nisbiy xavf, ishonchlilik.
Ключевые слова: новорожденные, факторы риска, перинатальная энцефалопатия, относительный риск, надежность.

In current conditions, the problem of perinatal damage to the central nervous system in the neonatal period continues to occupy a leading position in the structure of early childhood pathology. Purpose: to establish the significance of some aspects of hypoxic damage of the central nervous system of newborns, occurring in the perinatal period. We analyzed the data of 120 newborns suffering from hypoxic central nervous system damage that occurred in the perinatal period: group I included 40 newborns with moderate pathology, group II included 40 newborns with severe similar pathology. We have established the modifying role of such factors as chlamydia and toxoplasma invasion, the use of antifungal drugs, rapid or prolonged labor, and weak labor activity.

PERINATAL DAVRDA YUZAGA KELGAN YANGI TUG‘ILGAN CHAQALOQLAR MARKAZIY ASAB TIZIMINING GIPOKSIK ZARARLANISHINING AYRIM JIHATLARI

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Yangi tug‘ilgan chaqaloqlar markaziy asab tizimining perinatal shikastlanishi erta bolalik patologiyasining tuzilishida muhim rol o‘ynaydi. Maqsad: yangi tug‘ilgan chaqaloqlarda gipoksiya tufayli markaziy asab tizimining shikastlanishining ba’zi jihatlari. Biz markaziy asab tizimining o‘rtacha va og‘ir perinatal shikastlanishi bilan tug‘ilgan 120 nafar chaqaloqni tekshirdik: I guruhni markaziy asab tizimining o‘rtacha perinatal gipoksik shikastlanishi bilan tug‘ilgan 40 nafar chaqaloq, II guruhni markaziy asab tizimining og‘ir perinatal gipoksik shikastlanishi bilan tug‘ilgan 40 nafar chaqaloq tashkil etdi. O‘rtacha perinatal ensefalopatiyaning modifikatsiyalovchi xavf omillari xlamidiya infeksiyasi va toksoplazmoz, zamburug‘larga qarshi dori vositalarini qo‘llash, tez va uzoq muddatli tug‘ruq, yomon tug‘ruq faoliyati hisoblanadi.

НЕКОТОРЫЕ АСПЕКТЫ ГИПОКСИЧЕСКОГО ПОРАЖЕНИЯ ЦЕНТРАЛЬНОЙ НЕРВНОЙ СИСТЕМЫ НОВОРОЖДЕННЫХ, ВОЗНИКШЕГО В ПЕРИНАТАЛЬНЫЙ ПЕРИОД

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В современных условиях проблема перинатального повреждения центральной нервной системы в период новорожденности продолжает занимать лидирующие позиции в структуре патологии раннего детства. Цель: установить некоторые аспекты поражения центральной нервной системы, вызванного гипоксией у новорожденных. Мы обследовали 120 новорожденных с умеренным и тяжелым перинатальным поражением ЦНС: I группу составили 40 новорожденных с умеренным перинатальным гипоксическим поражением ЦНС, II группу составили 40 новорожденных с тяжелым перинатальным гипоксическим поражением ЦНС. Модифицирующими факторами риска умеренной перинатальной энцефалопатии являются хламидийная инфекция и токсоплазмоз, применение противогрибковых препаратов, быстрые и затяжные роды, плохая родовая деятельность.

Relevance. In modern conditions, the problem of perinatal damage to the central nervous system in the neonatal period continues to occupy a leading position in the structure of early childhood pathology.

Purpose: to establish some aspects of the central nervous system damage caused by hypoxia in newborns, which occurred in the perinatal period of their life.

Materials and methods. Anamnestic data, clinical examination, instrumental and laboratory indicators of 120 newborns suffering from perinatal period of life-related hypoxic encephalopathy were analyzed. The children were divided into two groups: Group I consisted of 40 newborns with this pathology of moderate severity. Group II of children consisted of 40 newborns with a similar pathology, but with a severe degree. We used ICD-10 to formulate the diagnosis and determine the severity of the pathological process. Statistical analysis was performed using the "Statistica 6.0" computer program. The arithmetic mean (M), the error of the arithmetic mean (m), and Student's t-test (t) were calculated. The indicator $p < 0.05$ was considered statistically significant.

Results and their discussion. We studied the medical and biological risk factors, and also calculated the relative risk for each of these parameters. The 95% confidence interval was taken

1 table.

Analysis of some medical and biological risk factors for hypoxic encephalopathy in group I newborns.

Factor	I group (n=40)		Control group (n=30)		P	RR	CI min	CI max
	abs.	%	abs.	%				
Hereditary diseases in the family	4	10.0	-	-	<0.05	1,974	1,567	2,301
Heavy form of anemia	32	80.0	12	40	<0.05	2,397	1,311	4,448
Anemia (moderate form)	2	5	1	3,3	>0,5	1,175	0,540	2,688
Obesity	6	15	2	6.7	<0.05	1.368	0.864	2.165
Chronic foci of infection	25	62.5	10	33.3	<0.05	1.667	1.078	2.578
Exacerbations of chronic diseases	12	30	2	6.7	<0.05	1.714	1.222	2.404
Acute bacterial infections diseases	6	15.0	2	6.7	>0.5	1.368	0.864	2.165
Acute laryngitis	11	27.5	1	3.3	<0.05	1.703	1.178	2.348
Acute pyelonephritis	7	17.5	2	6.7	<0.05	1.438	0.946	2.186
Acute salpingitis or endometritis	3	7.5	-	-	<0.05	1.897	1.513	2.312

Note: P – statistical significance, RR-relative risk.

2 table.

Analysis of some medical and biological risk factors for hypoxic encephalopathy in group II newborns.

Factor	II group (n=40)		Control group (n=30)		P	RR	CI min	CI max
	abs.	%	abs.	%				
Hereditary diseases in the family	4	10	-	-	<0.05	1,833	1,471	2,285
Heavy form of anemia	37	92,5	12	40	<0,05	5,286	1,832	15,252
Anemia (moderate form)	3	7.5	1	3.3	>0.5	1,338	0.731	2,449
Owerweight or obesity	8	20	2	6.7	<0.05	1,500	1,016	2,215
Presence of chronic foci of infection	23	57.5	10	33.3	>0.5	1,517	1,001	2,299
Exacerbations of chronic diseases	10	25	2	6.7	<0.05	1,611	1,130	2,297
Acute bacterial infectious diseases	8	20	2	6.7	<0.05	1,500	1,016	2,215
Acute upper respiratory tract infections pathways	10	25	1	3.3	<0.05	1.788	1.308	2.445
Urogenital infection	12	30	2	6.7	<0.05	1.714	1.222	2.404
Gynecological infection	5	12.5	--	-	<0.05	1.857	1.483	2.326

Note: P – significance of differences between groups, RR-relative risk.

into account. In the first group of newborns, the modifying role and statistical significance of factors such as hereditary pathology in the family RR 1,974 (1,567; 2,301), heavy form of anemia RR 2,397 (1,311; 4,448), chronic foci of infection RR 1,667 (1,078; 2,578), exacerbation of chronic diseases RR 1,714 (1,222; 2,404), acute laryngitis RR 1,703 (1,178; 2,348) and salpingitis, or endometritis RR 1,897 (1,513; 2,312) were established (Table 1).

Analysis of the relative risk of developing encephalopathy of hypoxic origin, of severe degree, occurring in newborns of group II in the perinatal period, showed statistically significant significance of such factors as genetically determined pathology in the family - RR 1.833 (1 471; 2 285), pronounced anemia - PP 5.286 (1.832; 15.252), the presence of excess body weight and obesity - PP 1.500 (1.016; 2.215), the presence of chronic infection foci in the mother's body - RR 1.517, bacterial infectious diseases in the acute stage - RR 1.500 (1.016; 2.215), acute laryngitis - RR 1.788 (1.308; 2 445), as well as acute pyelonephritis, salpingitis, or endometritis in women during pregnancy with this child - 1 714 RR (1 222; 2.404) and gynecological pathology 1,857 RR (1,483; 2,326) (Table 2).

When analyzing the risk of perinatal encephalopathy by the presence of intrauterine infection according to the relative risk criteria in groups I and II of newborns, it was found that the se-

3 table.

Analysis of the risk of perinatal encephalopathy by the presence of intrauterine infection according to the relative risk criteria in group I.

Intrauterine infection	group I (n=40)		Control group (n=30)		P	RR	CI min	CI max
	abs.	%	abs.	%				
Herpes infection	13	32.5	4	13.3	<0.05	1.501	1.033	2.180
Cytomegalovirus infection	7	17.5	2	6.6	<0.05	1.438	0.946	2.186
Chlamydia infection	2	5.0	--	-	<0.05	1.789	1.449	2.210
Toxoplasmosis	12	30.0	--	-	<0.05	2.071	1.587	2,704

Note: P – significance of differences between groups, RR-relative risk.

4 table.

Analysis of the risk of perinatal encephalopathy by the presence of intrauterine infection according to the relative risk criteria in group II.

Intrauterine infection	group II (n=40)		Control group (n=30)		P	RR	CI min	CI max
	abs.	%	abs.	%				
Herpes infection	10	25	4	13.3	<0.05	1.333	0.884	2.012
Cytomegalovirus infection	9	22.5	2	6.6	<0.05	1.557	1.076	2.253
Chlamydia infection	3	7.5	--	-	<0.05	1.811	1.460	2.247
Toxoplasmosis	13	32.5	--	-	<0.05	2.111	1.606	2,766

Note: P – significance of differences between groups, RR-relative risk.

verity of the pathological process in the brain is most likely affected by chlamydia infection (1,789 RR (1,449; 2,210) in group I and 1,811 RR (1,460; 2,247) and toxoplasmosis 2,071 RR (1,587; 2,704) in group I and 2,111 RR (1,606; 2,766) in Group II) (Table 3, 4).

Conclusions: Thus, our analysis of the relative risk (RR) for a number of parameters in newborns of the main and control groups revealed that the modifying factors in the formation of moderate-degree hypoxic encephalopathy, occurring in newborns in the perinatal period of life, are the body's infection with chlamydia and toxoplasma, the use of antifungal drugs, rapid or prolonged labor activity, and weak labor activity, in addition, infections of the urinary and reproductive systems of the woman's body, NSAID use, rapid and prolonged labor, and chronic fetal hypoxia.

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