



Intrauterine infection as a developmental factor perinatal pathology

Sirojiddinova Khiromon Nuriddinovna¹
Nabieva Shoista Mustafayevna²
Ortikboyeva Nilufar Tursunbayevna³

EMAIL :

Received 26th December 2020,
Accepted 17th January 2021,
Online 06th Feb 2021

^{1,2,3}Samarkand State Medical
Institute

ABSTRACT: Despite the introduction of more informative diagnostic methods and the expansion of the spectrum of pathogens studied, the problem of intrauterine infections and intrauterine infection remains relevant in perinatology, neonatology and pediatrics [4, 10].

Intrauterine infection is a congenital infection. Among congenital infections, rubella, chlamydia, mycoplasmosis, toxoplasmosis, infections with herpes simplex virus and cytomegalovirus are currently encountered. According to estimates, up to 400 cases of congenital rubella can be observed annually in the Russian Federation [5].

The incidence of congenital cytomegalovirus infection in the Russian Federation is unknown, in the USA it is estimated as 1% of all newborns, the incidence of congenital herpes simplex virus infection is 1 case per 1000 newborns, parvovirus infection is 1 case per 400 newborns [8,9].

KEYWORDS: Broncho-Munal, Sodium Nucleinate, IgG, TB

INTRODUCTION

It is known that congenital infections are characterized by the severity of the course and a high incidence of adverse outcomes. Mortality in congenital toxoplasmosis is 12%, congenital herpes simplex virus infection is up to 90%, enterovirus infection is 80% and congenital rubella is 100%. Intrauterine infection always has clear clinical signs [2].

There are opportunistic infections (conditionally pathogenic microbiota) that are transmitted from mothers to the fetus, colonize in the body of newborns, and persist for a long time. In the perinatal and neonatal period, they cause various pathological conditions, which ultimately lead to the formation of frequently ill children [1,7].

Purpose of the study. To study the causes of perinatal pathology of newborns associated with the somatic status of mothers and to determine the etiological role of opportunistic microorganisms.

Material and research methods. To determine the cause of perinatal pathology and intrauterine infection, 140 newborns hospitalized in the Regional Children's Multidisciplinary Medical Center in the neonatal pathology department of Samarkand were examined.

In order to determine the microbial etiology in perinatal pathology, feces, blood, mucus from the pharynx and pus were taken for bacteriological examination. Also, statistical-anamnestic and partially bacteriological examination was carried out among the mothers of newborns.

Statistical processing of the results included an assessment of the reliability of differences in the mean measurement values according to the Student's test with a given level of reliability ($p < 0.05$).

Research results and their discussion. The obtained results show that of 140 examined, 106 (75.7%) newborns were admitted to ARF from 1 to 7 days of life. The rest of the newborns were admitted in the late neonatal period. The arrival of newborns in the first days of their life with various pathologies shows that they had ante- or intrapartum infection. Analysis of nosological forms of diseases in newborns revealed diarrhea, sepsis, neonatal pneumonia and other pyoinflammatory diseases (Table 1).

Table 1

Nosological forms of diseases in newborns

Number of examined	Types of neonatal pathology	Number of pathologies
140	Diarrhea	49 (35.1%)
	Sepsis	29 (20.7%)
	Neonatal pneumonia	24 (17.1%)
	Pemphigus of newborns	20 (14.3%)
	Omphalitis	16 (11.4%)
	Conjunctivitis	2 (1.4%)

A high percentage of diarrhea was revealed in comparison with other types of pathology. In second place is sepsis, which was registered in 29 (20.7%) out of 140 surveyed newborns. In total, including sepsis, purulent-inflammatory processes were observed in 67 (47.8%) newborns. It is known that in the perinatal period, the above listed diseases, sepsis, neonatal pneumonia and diarrhea are often the main or main cause of death in newborns [3,6]. Therefore, the study of clinical manifestations and the etiological role of microorganisms in perinatal pathology are of great practical interest.

Analysis of the data obtained shows (Table 2) that, in the composition of the feces, gram-positive flora predominated. It was noted that in sepsis and purulent-inflammatory diseases, gram-negative bacilli and streptococci gave way to staphylococci. Apparently, these changes in the etiological structure of a number of pyoinflammatory diseases occurred under the influence of many factors, but mainly as a result of the acquisition of resistance by staphylococci to many antibiotics.

To study the pathogenic properties and antibiotic sensitivity, pathological material of 1-2 staphylococcus strains was isolated from each sample. A total of 150 strains were isolated and studied. All of them were hemolytic, had a golden pigment color and 96 (64%) out of 150 coagulated plasma.

Table 2
Microbial landscape of perinatal pathology of newborns

amount survey bathrooms	View pathology	Material for issled.	Qty Sample	View microbe	Discovered
140	Diarrhea	Stool - neniya	49	St.aureus5	16 (32.7%)
				St.aureus5 + Candida	12 (24.5%)
				EPEC5 + Candida	11 (22.5%)
				EPEC5	6 (12.2%)
				Candida	4 (8.1%)
	Sepsis	Blood	29	St.aureus	19 (65.7%)
				St.aureus + Candida	3 (10.5%)
				Streptococ- cus	4 (13.9%)
				E.Coli	2 (6.9%)
	Neonatal pneumonia	Slime out throat	24	St.aureus + Candida	15 (62.5%)
				Klebsiella + Candida	9 (37.5%)
	Pemphigu s of newborns	Pus	20	St.aureus	12 (60%)
				Streptococ- cus	4 (20%)
				St.aureus + Candida	4 (20%)
	Omphaliti s	Pus	16	St.aureus	10 (62.5%)
				St.aureus + Candida	6 (37.5%)
	Conjuncti vitis	Pus	2	St.aureus	2 (100%)

The study of antibiotic sensitivity shows that of the antibiotics used (Table 3), only staphylococcal strains were resistant to amikacin, amoxiclav, cefazolin and ciprofloxacin. Of 150 strains, only 20 strains (13.3%) showed high sensitivity to amikacin, 10 (6.6%) to amoxiclav, 17 (11.3%) to cefazolin, and 33 (22%) to ciprofloxacin. The rest of the strains had medium and low sensitivity. Staphylococcal strains

were highly sensitive to gentomycin (60 - 40%), cefotakim (45 - 30.1%) and ceftriaxion (61 - 40.6%). Thus, the most effective antibiotics against staphylococci are gentomycin, cefotaxime, ceftriaxion.

Table 3
Antibiotic sensitivity of staphylococci

Types of antibiotics	Sensitivity degree			Number of strains studied
	High	Average	Weak	
Amikacin	20 (13.3%)	43 (28.6%)	87 (58.1%)	150
Amoxiclav	10 (6.6%)	48 (32.1%)	92 (61.3%)	
Gentomycin	60 (40%)	36 (24%)	54 (36%)	
Cefazolin	17 (11.3%)	45 (30.1%)	88 (58.6%)	
Ciprofloxacin	33 (22%)	69 (46%)	48 (32%)	
Cefotaxime	45 (30.1%)	38 (25.3%)	67 (44.6%)	
Ceftriaxion	61 (40.6%)	16 (10.7%)	73 (48.7%)	

Note: high sensitivity - the diameter of the growth retardation zone is 25 mm and more, medium - from 15 to 25 mm, weak from 10 to 15 mm.

A study of the anamnestic data of mothers of newborns with perinatal pathology shows that all mothers (100%) had anemia, during pregnancy, of 34 mothers, 24 had influenza, toxicosis was observed in 17, the threat of miscarriage in 11 and nephropathy in 7. Suffered from TORCH infection - 4, preeclampsia - 5. The physiological course of the labor period was noted in 17 cases, intravenous and intramuscular stimulation was performed in 7 cases, delivery occurred with cesarean section in 4. Amniotic fluid was dirty in 13 mothers.

Based on the study of the biological properties of Candida, Streptococcus, Klebsiella, E. Coli isolated from medical personnel, mothers and newborns, it is impossible to establish the source of infection, since these microorganisms are identical in all sources. However, by studying the phage sensitivity of staphylococci, it is possible to determine the source of infection in perinatal pathology of newborns.

For this purpose, we isolated 56 strains of staphylococci from the nipples of mothers and 96 strains from different pathological foci of newborns and studied their phage type.

As the results of phage typing showed, the majority of staphylococcal cultures were lysed by phages of groups I and III. We were interested in the coincidence of the results of phage typing among staphylococcal strains isolated from mothers and their newborns. Note that the phage landscape of staphylococci isolated from the nipples of mothers and from various foci of lesions of newborns are very similar and among them epidemic phage types prevail: 80, 81, 83A.

This circumstance suggests that in the conditions of maternity wards, when perinatal pathology of newborns occurs, the role of mothers is great.

Findings.

1. Based on the studies carried out, it can be said that anemia, preeclampsia, viral infection suppress the mother's natural defense factors, which negatively affect the formation of the immune status of the fetus and the development of perinatal pathology.
2. Among perinatal pathology, diarrhea takes the predominant place, followed by sepsis and pneumonia. The etiological role is attributed mainly to gram-positive opportunistic staphylococci.
3. The coincidence of the phage type of staphylococci isolated from mothers and from newborns proves that mothers are the main source of infection in newborns.

LIST OF REFERENCES

1. Kasokhov T.B., Shleikher A.N., Merdenova Z.S., Bitakova M.R., Dzgoeva I.S. Features of immune status indicators in premature infants with infectious and inflammatory diseases. // Russian Bulletin of Perinatology and Pediatrics - 2013; Number 3; P.98.
2. Lobzin Yu.V., Vasiliev VV, Skripchenko NV. and other Topical issues of congenital infections in Russia. Zhurn.infectol - 2010; 2: 2: 14-24. (Lobzin YV, Vasilyev VV, Skripchenko NV et al. Actual aspects of congenital infections in Russian Federation. Zhurn infektol - 2010; 2: 2: 14-24).
3. Malancheva T., Ziatdinova N., Akhmadieva L. The problem of frequently ill children at the present stage. Pharmaceutical Bulletin. - 2009, No. 11, p. 112.
4. Melnikova I.M., Mizernitsky Yu.L., Marushkov V.I., Dorovskaya N.L. Clinical and social aspects of frequently ill children. Health and healthy lifestyle: state and prospects (medical and psychological, social, legal and environmental aspects). Smolensk. - 2007, p. 219.
5. Guidelines 3.1.2.2356-08 "Epidemiological surveillance of congenital rubella". - 2012; 31: 3: 123-131. spravo.ru/rossijskoje/bs-pravila/04k.htm (Methodical instructions 3.1.2.2356-08 "Surveillance of congenital rubella." [spravo.ru / rossijskoje / bs-pravila / 04k.htm](http://spravo.ru/rossijskoje/bs-pravila/04k.htm) - 2012; 31: 3: 123- 131).
6. Strachunsky LS, Krechkova OI, Reshedko GK, et al. Antibiotic sensitivity of pneumococci isolated from healthy children from organized groups. Clinical Microbiology and Antimicrobial Chemotherapy - 2009, vol. 1, no. 1, p. 31.
7. Shabalov N.P. "General biological problem: patterns and consequences of perinatal human infection" Pediatrics / 2012 / Volume 91 / No. 3 pp. 27-30.
8. Robert-Gangneux F., Dardy M.-L. Epidemiology of and diagnostic strategies for toxoplasmosis. Clin Microbiol Rev - 2012; 25: 2: 264-296.
9. Uneke CJ, Yale J. Impact of placental Plasmodium falciparum malaria on pregnancy and perinatal outcome in sub-Saharan Africa: effects of placental malaria on perinatal outcome. Biol Med - 2007; 80: 3: 95-103.
10. Zagar S., Lofler-Badzek D. Broncho-Vaxom in children with rhinosinusitis. A double-blind clinical trial. ORL. - 2008, v. 60, p. 404.