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CLINICAL MANIFESTATIONS OF CYTOMEGALOVIRUS AND OTHER INFECTIONS IN INFANTS

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This work is devoted to study the clinical manifestations of CMV and other TORCH infections in infant. The relevance of this work lies in the influence of CMV and other TORCH infections to fetus during pregnancy on the central nervous system and hepatobiliary system and its subsequent manifestations after birth. In this article we discussed the clinical, neurological, neuropsychological and instrumental data of TORCH infection in children after birth.

Keywords: intrauterine infection, TORCH, infants.

Cytomegalovirus (CMV) - is a common infectious pathology, diagnosed in newborns. This infection plays a significant role because of the possibility of severe generalized process, congenital malformations, and potential risk of developing chronic disease [1, 2]. The clinical manifestation of the disease with the possible development of an extremely severe forms observed in patients with acquired immunodeficiency or physiological nature, which is characteristic, for example, for infants [3]. The clinical manifestations of infection with intrauterine infection mechanism (IUI) are different. Therefore, it is interesting to study the clinical manifestations of CMV infection and to compare them with other infections in young children.

Objective: to study the clinical manifestations of CMV infection in infants, and compare with systemic lesions in other infections with fetal development mechanism.

Materials and methods. A total of 57 infants were examined with clinical manifestations of disease, which could be the cause of intrauterine infection. To confirm the diagnosis of body fluids from sick children (blood, saliva) investigated the presence of cytomegalovirus genome, herpes simplex virus 1 and 2 of types, Chlamydia, Mycoplasma, Ureaplasma, Toxoplasma (by PCR) and specific IgM antibodies and low avidity antibodies Class IgG (ELISA). The study protocol includes methods such as neurosonography, skull radiography, computed tomography of the brain. All 57 patients were divided into 4 groups: 26 children

with cytomegalovirus infection (group 1), 10 - an infection caused by the herpes simplex virus (SPGV) 1-2 second type (group 2), 8 - with toxoplasmosis (Group 3), 13 - with chlamydia (Group 4). Statistical analysis of the results was performed using the application package Statistica 6,0 to aggregate data to Microsoft Excel 2000 on the PC. Determined by the average value of indicators (M), standard errors were calculated average values of these parameters (m), we evaluated the accuracy of the average value of the differences in the two groups using the Student t-test.

Results and discussion. In the study of the clinical manifestations of CMV infection found that nerve damage was observed in 100% of cases, including the damage of the nuclei of cranial nerves - in 2 children (1.6%), convulsive seizures or convulsive readiness - in 10 (10.6%), hypotonia - in 27 (56.7%), hyporeflexia - 26 (50.5%), strabismus - in 18 (15.7%), nystagmus - in 4 (5.6%), tremor - 8 (32.5%). Meningitis diagnosed in 6 children (3.3%), meningoencephalitis - 4 (2.2%), ventriculitis - 14 (7.8%). In 40 patients (78.6%) was found hydrocephalic syndrome, in 2 (3.3%) - microcephalic, signs of intracranial hypertension were found in 16 children (53.9%). One child (0.5%) diagnosed with uveitis, 3 patients (1.6%) - retinopathy, in 1 (0.5%) - hearing loss.

Revealed neurosonographic signs: choroid plexus cysts (52.2%), ventriculomegaly (78.6%), symptoms of acute intraventricular hemorrhage (7.3%), the presence of periventricular calcifications located in the brain (25.8%), angiopathy

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(25.8%), vascular plexus sealing (54.4%), expanding plexus (15.1%), strain plexus (20.7%), the seal of the thalamus (17.9%), induration of periventricular areas (17.9%). The data do not contradict the results of the studies presented in literature [4].

A comparative analysis of lesions of the nervous system in patients with CMV infection, and patients with other IUI (HSV 1-2 type, toxoplasmosis, chlamydia) was conducted.

It turned out that ventriculitis (7.8%), microcephaly (3.3%), periventricular calcifications (25.8%) and choroid plexus cysts in the brain (52.2%) significantly more often was detected in patients with CMV infection than in 3rd group patients. Intracranial hypertension (53.9%), meningitis (3.3%), cerebrovascular angiopathy (25.8%) and the seal of the thalamus (17.9%) were significantly more frequent in group 1 patients than in 3 and 4. Hypotonia (56.7%) diagnosed more frequently than in HV and toxoplasmosis; muscle dystonia (18.5%) - more often caused by chlamydia; hyporeflexia (50.5%), seizures (10.6%), induration plexus (54.4%) and the expansion (15.1%) - more than the infection caused by the herpes simplex virus.

Liver and spleen were detected in 73.9% of patients with CMV infection. In studying the structure of the spleen and liver lesions diagnosed with CMV hepatomegaly (13.8%), hepatosplenomegaly (17.7%), hepatitis B (4.8%, including form anicteric - 3.2%), jaundice (conjugation - 42.7%, hemolytic - 5.6%, parenchymal - 1.6%), cholestasis syndrome (1.6%), biliary atresia (1.6%), calcification of the liver (0.8%). Compared to the 2nd group (cytomegalovirus infection) was found significantly more ($p < 0.05$) anicteric forms of hepatitis (3.2% in group 1 and was not found in the 2nd). Compared with the third group (toxoplasmosis) CMV infection significantly caused more frequent hepatosplenomegaly (17.7% in group 1 and was not observed in the 3rd). Patients in Group 1 compared with patients of group 4 (chlamydia) were more fre-

quently diagnosed with hemolytic jaundice (5.6% in group 1 and was not found in the 4th).

Therefore, anicteric forms of hepatitis on cytomegalovirus infection were observed significantly more frequently than in the infection caused by the herpes simplex virus type-1-2; hepatosplenomegaly - more often than in toxoplasmosis; hemolytic jaundice - more than in chlamydia.

Conclusions

1. Structure of the clinical manifestations of CMV infection in infants is characterized by diversity and includes lesion of central nervous (100%), the hepatobiliary (73.9%) systems.

2. Structure of the lesions of the nervous system in infants with intrauterine infection (cytomegalovirus infection, an infection caused by the herpes simplex virus type 1-2, toxoplasmosis, chlamydia) is represented by inflammatory processes (meningitis, meningoencephalitis, ventriculitis), hydrocephalic and microcephalic syndromes, intracranial hypertension syndrome, intraventricular hemorrhage, development of cysts, calcifications, angiopathy, vascular plexus lesion and changes in echogenicity of the different parts of the brain (according neurosonographic examination).

3. The structure of the liver and spleen in patients with CMV infection dominated hepatomegaly, hepatosplenomegaly, hepatitis, jaundice (conjugation, hemolytic, parenchymal), and calcification of the liver and spleen, congenital malformations of bile ducts.

4. Cytomegalovirus infection in infants compared with other intrauterine infections significantly more likely to develop meningitis, meningoencephalitis, ventriculitis, microcephaly, calcifications, cysts, angiopathy and the defeat of the vascular plexus of the brain, convulsions and syndrome of intracranial hypertension; in the structure of other pathologies hepatitis, hepatosplenomegaly, hemolytic jaundice prevail.

REFERENCES

1. Mito T., Ando Y., Takeshita K., Takada K., Takashima S. Ultrasonographical and morphological examination of subependymal cysts lesions in maturely born infants // *Neuropediatrics*. - 1989. - V.20. - N 4. - P. 211-214.
2. Kudashov NI Ozerov OE Orel IV Neurological manifestations of HSV infection in newborns // *Pediatrics*. - 1997. - N5. - P.42-45.
3. Whitley R.T. Neonatal herpes Simplex infections // *J. Med. Virol.* - 1993. - V.1. - Suppl. - P.13-21.
4. MurguiapdepSierra T., Florido J., Minox T., Arriola M

et al. Neonatal herpetic encephalitis. Current concepts concerning a case. // Rev. Invest. Clin. - 1996. - V.48. - N 1. - P. 35-41.

5. Ozerov OE Kudashov NI, IV Orel Features echoencephalogram neonates with HSV infection // Ultrasound in

obstetrics, gynecology and pediatrics. - 1993. - N2. - S. 55-70.
6. Yamashita Y., Outani Y., Kawano Y., Horikawa M et al. Clinical analyses and short-term prognoses of neonates with subependymal cysts // Pediatr. Neurol. - 1990. - V.6. - N6. - P. 375-378.

РЕЗЮМЕ

КЛИНИЧЕСКИЕ ПРОЯВЛЕНИЯ ЦИТОМЕГАЛОВИРУСНОЙ И ДРУГИХ ИНФЕКЦИЙ У МЛАДЕНЦЕВ

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Данная работа посвящена изучению клинических проявлений цитомегаловирусной и других инфекций у детей. Актуальность данной работы заключается во влиянии ЦМВ и других ТОРЧ инфекции во время беременности на центральную нервную и гепатобиллиарную систему плода во время внутриутробного развития и его дальнейшие проявления. В этой статье мы обсудили клинико-неврологические, нейropsychологические и инструментальные данные ТОРЧ инфекций у детей после рождения.

Ключевые слова: внутриутробные инфекции, TORCH, младенцы.

XÜLASƏ

UŞAQLARDA SİTOMEQALOVİRUS VƏ DİGƏR İNFEKİSYALARIN KLİNİK ƏLAMƏTLƏRİ

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Təqdim edilmiş məqalə uşaqlarda sitomeqalovirus (SMV) və digər infeksiyaların kliniki əlamətlərinin tədqiqinə həsr edilib. Bu işin aktuallığı hamiləlik dövründə SMV-un və digər TORCH infeksiyaların dölün mərkəzi sinir sisteminə və hepatobiliyar sistemə təsiri və sonradan yaranan əlamətlərlə əlaqədardır. Məqalədə doğulandan sonra uşaqlarda TORCH infeksiyaların kliniki-nevroloji, neyropsixoloji və instrumental müayinə nəticələri müzakirə edilmişdir.

Açar sözlər: bətn daxili infeksiya, TORCH, uşaqlar.

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