CYTOMEGALOVIRAL INFECTION

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Cytomegaloviral infection is a wide-spread human infection with different mechanisms of transmission. A variety of clinical manifestations of the disease is determined by the ability of the human cytomegalovirus to infect nearly all the body cells. Cytomegalovirus may affect immunodeficient individuals, which has resulted in an ongoing increase in cytomegaloviral infection incidence not only among the pediatric, but also among the adult population. According to the European regional bureau of World Health Organization, cytomegaly is classified as a "new and mysterious" infection. A clinical experience case specifies a possibility of disease development in primarily immunocompetent people.

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The WHO Regional Office for Europe includes cytomegalovirus in the group of "new and mysterious" infections [1]. Diseases caused by cytomegalovirus (CMV) are anthroponotic viral infections and are characterized by a variety of clinical manifestations: from latent course to generalized forms with damage to the nervous system and internal organs [1; 3; 7]. The essence of the CMV problem is that it is a so-called opportunistic infection, the clinical manifestation of which is possible only under conditions of primary or secondary immunodeficiency [5]. In

individuals with a normally functioning immune system, in the overwhelming majority of cases, the infection occurs as a virus carrier [1; 4]. On average, 90-95% of the adult population has antibodies to CMV [1]. The number of seropositive patients in different countries fluctuates on average from 44 to 85%, sick - from 0.2 to 3% [5]. The prevalence of cytomegalovirus infection, the possibility of long-term persistence of the pathogen in the human body with damage to various organs and systems, difficulties in laboratory diagnostics, and the lack of reliable treatment and preventive measures convincingly emphasize the relevance of this infection.

The causative agent of human cytomegalovirus is cytomegalovirus (Cytomegalovirus hominis) of humans is an opportunistic pathogen belonging to the family of betaherpesviruses of the fifth type. The human CMV genome is the largest of all genomes of representatives of the herpesvirus family [1]. The source of infection is a sick person with one or another form of the disease or a chronic virus carrier, which is most dangerous in the active phase of primary infection or during an exacerbation of the infection. The routes of transmission of CMV are: vertical, sexual, parenteral, aspiration, oral. Transmission factors are blood, cervical and vaginal secretions, sperm, and breast milk [4]. Infection can also occur through donor organs and tissues transplanted to recipients. CMV persists in leukocytes for a long time, which leads to the risk of developing this infection in recipients of blood and its components [1; 3; 7].

Primary infection of immunocompetent adults is usually asymptomatic and only in 5% of cases in the form of mononucleosis- like syndrome, the distinctive signs of which are fever, asthenia, lymphomonocytosis , atypical mononuclear cells in the blood , although angina and lymphadenopathy are not always characteristic [1; 6]. Hepatomegaly is observed in 100% of cases, described as the initial manifestation of CMV or as granulomatous hepatitis accompanying mononucleosis- like syndrome [1; 3; 6]. In the absence of pathology on the part of

the immune system, acute CMV becomes latent with the lifelong presence of the virus in the human body. Detection of specific IgM in people with normal immunity indicates the presence of an active infection and ensures earlier diagnosis of CMV. Seroconversion is a reliable sign of primary CMV [5]. A high CMV IgM titer indicates a primary infection, since recurrent CMV infection rarely produces high IgM titers . However, not all individuals are capable of producing IgM antibodies. In individuals with weakened immunity, IgM to CMV is not formed even in the case of clinically expressed infection. The determination of anti-CMV IgG in dynamics by the ELISA method with a fourfold increase in antibody titers confidently indicates an acute infectious process [3; 4].

We present an example of the medical history of patient R., born in 2003, with clinical manifestations of cytomegalovirus disease without initial signs of immunodeficiency, who was hospitalized at the Municipal Institution of Clinical Hospital No. 4 of the City of Ufa in September 2010. The patient was admitted on the 8th day of illness complaining of dry cough, sweating, prolonged subfebrile body temperature, heaviness in the lumbar region to exclude the diagnosis of HFRS. From the epidemiological anamnesis : there is a kindergarten in the Ufa district, the day before the illness there was hypothermia after a bath. Works as a programmer. Had chickenpox, rubella, acute respiratory infections. Denies blood transfusion, surgical interventions, casual sexual contacts, drug use. Married, has a child. Objectively, at the time of examination, petechial rash on the shins and feet of the capillary toxicosis type , isolated petechiae on the lateral surfaces of the body were detected, submandibular lymph nodes up to 0.2 * 0.2 cm were palpated, the lumbar region tingling symptom was negative, the edge of the liver protruded 1.0 cm from under the rib. Hard breathing was heard in the lungs during auscultation , respiratory rate 22 per minute, heart rate 96 per minute, blood pressure 140/50 mm Hg . On the chest X-ray: without focal and infiltrative shadows, an increase in the pulmonary pattern is determined. In the general blood test on admission: Le - 12.6

* 109 /l, Er - 5.31 * 1012 /l, Hb - 149 g /l, Tr - 132 * 109 /l, ESR - 5 mm / h, in the leukocyte formula : band neutrophils - 1%, eosinophils - 2%, segmented neutrophils - 43%, lymphocytes - 42%, monocytes - 12%. In the general urine test, protein was not detected. In the biochemical analysis: urea up to 5.0 mmol /l, creatinine - 138 μmol /l, ALT - 130 U, AST - 104 U, C-reactive protein is positive, LE cells are not detected, PTI - 90%. On the 13th day of the disease, the dry spasmodic cough intensified, the temperature remained at 37˚C, constant sweating, weakness, and palpitations were of concern. The patient was examined by an ENT doctor and a cardiologist: no pathology was found.

Given that the patient still had fever, non-productive dry cough with a spasmodic component, sweating, interstitial pneumonia was suspected. A chest X-ray was repeated: signs of bronchitis were found. Atypical mononuclear cells up to 17% appeared in the general blood test. Examination by ELISA for chlamydia, mycoplasma infection revealed signs of only latent infection. In ELISA for EBV: VCA IgM - 0.09 (N 0.25), EA IgG - 0.07 (N 0.24), EBNA IgG - 0.79 (N 0.17). In ELISA for CMV: CMV IgM - 2.8 (N 0.34), CMV IgG - 0.38 (N0.14) were detected. In dynamics, after 10 days, the following values were determined in the ELISA for CMV: CMV IgM - 1.9; CMV IgG - 2.6. Blood for HIV infection in the ELISA: the result is negative. Clinical diagnosis: primary cytomegalovirus infection (cytomegalovirus disease), severe course. He received treatment with antibiotics: ceftriaxone 1.0 g twice per muscle, azithromycin 500 mg once per os , tavanic 500 mg No. 5, immunoglobulin 3.0 ml per muscle every other day, cycloferon according to the regimen, Valtrex (valacyclovir) per os 500 mg 2 times 10 days, vitamin therapy. Before discharge, in the complete blood count: ESR 41 mm / h, Le - 9.0 * 109 / l, Er - 4.64 * 1012 / l, Hb - 134 g / l, Tr - 299 * 109 / l, in the leukocyte formula : segmented - 32%, monocytes - 5%, eosinophils - 3%, lymphocytes - 57%, mononuclear cells - 6%. Discharged under the supervision of a local therapist.

Thus, on the 32nd day of the disease, the patient continued to have lymphocytosis, and atypical mononuclear cells continued to be detected . The diagnosis of cytomegalovirus infection, primary acute form, severe course (cytomegalovirus disease) was made taking into account a long-term subfebrile fever of up to a month or more, sweating, persistent dry cough with a spastic component, petechial rash of the capillary toxicosis type , thrombocytopenia (which is considered one of the typical and early symptoms of cytomegalovirus infection), lymphomonocytosis . Detection of atypical mononuclear cells in the absence of signs of tonsillitis and polylymphadenopathies , IgM antibodies to CMV in ELISA with an increase in IgG over time made it possible to prove this diagnosis.

LITERATURE

1. Isakov, V.A., Arkhipova E.I., Isakov D.V. Human herpesvirus infections: a guide for doctors. - St. Petersburg: SpetsLit ., 2006. - 300 p.

2. Isakov, V.A. Modern therapy of herpesvirus infections: a guide for doctors. - St. Petersburg, 2004. - 168 p.

3. Kitsak , V.Ya. Viral infections of pregnant women: pathology of the fetus and newborns: information and methodological manual.-Koltsovo, 2005.-P.59-69.

4. Abdulloev M. et al. View Of An Infectious Disease Specialist On The Course Of The Cortex In Children // AMALIY VA TIBBIYOT FANLARI ILMIY JURNALI. - 2023. - Vol. 2. - no. 12. pp. 930-939.

5. Ziyodulloevich AM EFFICIENCY OF ETIOTROPIC TREATMENT IN CHRONIC VIRAL HEPATITIS //Galaxy International Interdisciplinary Research Journal. – 2023. – T. 11. – No. 4. – pp. 450-454.

6. Ziyodullayevich AM Studies on the Determination of Cytokines in Patients with Chronic Hepatitis C with Criglobulinemia //American Journal of Pediatric Medicine and Health Sciences (2993-2149). – 2023. – T. 1. – No. 10. – pp. 487-495.

7. Sial . IG, Patel R. New strategies for prevention and therapy of cytomegalovirus infection and disease in solid-organ transplant recipients. Clinic. Microbiol. Reviews 2000; 13(1): 83-121.