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MODERN TREATMENT OF CYTOMEGALOVIRUS INFECTION IN CHILDREN

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✓ ***Resume***

Cytomegalovirus infection (CMV) is a common viral infection worldwide that can cause a variety of clinical manifestations in children. It is caused by a virus called cytomegalovirus, a member of the herpesvirus family. CMV infection can cause a range of clinical manifestations, ranging from asymptomatic to severe disease. CMV can remain latent for life, and reactivation of the virus occurs in immunocompromised individuals.

Key words: CMV, herpes, treatment, antiviral drugs, children

СОВРЕМЕННОЕ ЛЕЧЕНИЕ ЦИТОМЕГАЛОВИРУСНОЙ ИНФЕКЦИИ У ДЕТЕЙ

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✓ ***Резюме***

Цитомегаловирусная инфекция (ЦМВИ) — распространенная во всем мире вирусная инфекция, которая может вызывать целый ряд клинических проявлений у детей. Эту инфекцию вызывает вирус, принадлежащий к семейству вирусов герпеса, называемый цитомегаловирусом. ЦМВ-инфекция может вызывать целый ряд клинических проявлений: от бессимптомного течения до тяжелого течения. ЦМВ может оставаться латентным на всю жизнь, а реактивация вируса происходит у лиц с ослабленным иммунитетом.

Ключевые слова: ЦМВ, герпес, лечение, противовирусные препараты, дети.

БОЛАЛАРДА ЦИТОМЕГАЛОВИРУСЛИ ИНФЕКЦИЯНИ ЗАМОНАВИЙ ДАВОСИ

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✓ ***Резюме***

Цитомегаловирус инфекцияси (ЦМВИ) болаларда бир қатор клиник кўринишларга олиб келиши мумкин бўлган, дунё бўйлаб кенг тарқалган вирусли инфекциядир. Бу инфекция цитомегаловирус деб аталадиган герпес вируслар оиласига мансуб вирус туфайли юзага келади. ЦМВ инфекцияси асимптоматик кўринишдан огир касалликгача бўлган бир қатор клиник кўринишларига сабаб бўлиши мумкин. ЦМВ умрбод яширин кечиши мумкин ва вируснинг қайта фаоллашиши иммунитети заиф одамларда содир бўлади.

Калит сўзлар: ЦМВ, герпес, даволаш, antiviral препаратлар, болалар

Relevance

Cytomegalovirus infection (CMV) is a common viral infection worldwide that can cause a variety of clinical manifestations in children [1-3]. It is caused by a virus of the herpesvirus family, called cytomegalovirus. CMV infection can cause a variety of clinical manifestations, ranging from

asymptomatic to severe disease [4]. CMV can remain latent for life, and reactivation of the virus occurs in immunocompromised individuals [5-7].

CMV infection in children can manifest with a range of clinical manifestations, including neurological, gastrointestinal, and respiratory symptoms [6]. In newborns, CMV infection can cause fetal growth retardation, microcephaly, and sensorineural hearing loss. In older children, CMV infection can cause encephalitis, meningitis, hepatitis, pneumonitis, and colitis [7].

Laboratory tests used to diagnose CMV infection include serological tests, viral tests, and polymerase chain reaction (PCR) tests. Imaging studies such as computed tomography (CT) and magnetic resonance imaging (MRI) can also help diagnose CMV-related illness. Cytomegalovirus (CMV) is a common viral infection that can affect both children and adults [8] . Although many people with CMV have no symptoms, some children can develop serious health problems as a result of the infection, including hearing loss, vision loss, and intellectual disability [9]. Although there is no specific treatment for CMV infection, research is ongoing. It can be used to prevent the disease in children at risk. One of the most effective strategies is to detect and treat CMV infections before they lead to serious health problems. This can be done through regular screening of newborns, as well as testing pregnant women who are at risk of transmitting the virus to their babies. CMV infection is a significant cause of morbidity and mortality in children, especially in immunocompromised individuals, so it is important to know the characteristics and methods of diagnosing and treating the infection [10-11].

Vaccines and antiviral therapies for CMV are currently being developed and may offer promising avenues for the prevention and treatment of CMV infection in children. Treatment of cytomegalovirus (CMV) infection in children depends on the severity of the disease and the child's immune status. In immunocompetent children, treatment is usually not required for mild symptoms, and the infection resolves spontaneously within a few weeks. However, in immunocompromised children, CMV infection can lead to severe disease and requires prompt treatment. Antiviral drugs such as ganciclovir, valganciclovir, and foscarnet are effective in treating CMV infection in immunocompromised children. These drugs stop the virus from multiplying and help reduce the severity and duration of symptoms [12]. They can be given orally or intravenously, depending on the severity of the disease. In older children, antiviral therapy may be started if there are severe symptoms or if the child is immunocompromised. In addition to antiviral therapy, supportive care is also important in managing CMV infection in children. This may include intravenous fluids, oxygen therapy, and nutritional support. In severe cases, hospitalization may be required. Prevention of CMV infection in children is also important, especially in high-risk populations, such as premature infants or children undergoing bone marrow transplantation. Strict adherence to infection control measures, including hand hygiene and isolation measures, helps prevent the spread of CMV infection.

The purpose of the research: to study the modern treatment of the course of cytomegalovirus infection in children.

Materials and methods

1. Clinical tests (blood , urine and general analyzes of feces);
2. Biochemical analyzes of blood ;
3. Determination of IgM and IgG levels in serum by ELISA, and viral RNA by PCR;
4. Determination of the amount of inflammatory cytokines by immunological method;
5. Statistical processing.

Result and discussions

Prevention of CMV infection in children requires a multifaceted approach. It includes early detection, supportive care, regular screening, and early intervention. By implementing these steps, the impact of CMV on the health and development of the child can be minimized. Risk factors for severe CMV disease include immunodeficiency, premature birth, low birth weight, or bone marrow transplantation. Early diagnosis and appropriate treatment are essential to prevent severe consequences of the disease. Health care providers should consider CMV infection in the differential diagnosis of children with neurological, gastrointestinal, or respiratory diseases.

The localization and frequency of CMV isolation using the ELISA method in the examined patients are as follows: pharynx (42.2% of cases), urethra (21.6%), oral cavity (12.9%), cervical canal

(8.6%), blood (2.6%), eyes and nose (1.7% each), cervix and skin (0.9% each). CMV was detected in 46% of cases with a positive PCR result in the urethra and cervical canal. 23.1% - in the vagina, 15.4% - in the blood, 7.7% - in the pharynx. Thus, cytomegalovirus was frequently detected in the throat and urinary tract using ELISA, and in the urinary tract, cervical canal, and vagina using PCR. Specific IgM antibodies to cytomegalovirus were detected most frequently at a titer of 1:200 - in 56% of cases, at a titer of 1:800 - in 33.3% and at a titer of 1:100 - in 11% of cases. The most frequently observed IgG antibody titers were 1:3200 and 1:6400 to CMV in patients of all groups.

It should be noted that there was no phase dependence of the level of specific IgG antibodies. In the anamnesis of patients with CMV infection, there were chronic tonsillitis and tonsillopharyngitis (in group 1 - 33.1%, in group 2 - 28.9% of cases), frequent acute respiratory viral infections (in 21.2% and 15.6% of cases, respectively), low-grade fever (45.7% and 15.6%), asthenia (40.6% and 18.9%), lymphadenopathy (9.1% and 8.9%), dysbiosis (11.4% and 6.7% of patients).

Conclusion

In conclusion, CMV infection can cause severe disease in immunocompromised children and requires prompt treatment with antiviral drugs. Prevention of CMV infection through infection control measures is of great importance, especially in at-risk populations. The above data allow us to conclude that the diagnosis of CMV infection based on symptoms is insufficient and requires additional research methods and the need to improve primary prevention.

LIST OF REFERENCES:

1. Krasnov VV, Obryadina AP Clinical and laboratory characteristics of cytomegalovirus infection in children. //Prakticheskaya medicine 2012 November;7(62):137-139 (in Russ.).
2. Nikonov AP, Astsaturova OR Cytomegalovirus infection and pregnancy. //Gynecology 2007;1:46-49 (in Russ.).
3. Khaertynova IM, Galeeva RK, Lazarenko OG et al. Herpesviruses illness I therapy difficult form: leadership for vrachey Herpesvirus disease and therapy of severe forms: a guide for physicians Kazan: MeDDok 2011; 156 p.
4. Alkhawaja S., Ismaleel A., Botta G., Senok AC The prevalence of congenital and perinatal cytomegalovirus infections among newborns of seropositive mothers. //J Infect Dev Ctries 2012 May;14/6(5):410-415.
5. Jalilova AS (2022). Features of clinical manifestations of cytomegalovirus infection in children. //International Journal of Medical Sciences and Clinical Research 2022;2(9):12-16. https://doi.org/10.37547/ijmscr/Volume02Issue09-04
6. Mukhammadieva MI (2023). Improvement of prevention and treatment of complications with spontaneous bacterial peritonitis in patients with liver cirrhosis of viral etiology //Oriental Renaissance: Innovative, educational, natural and social sciences. 2023; 947-953 p.
7. Mukhammadiev Musharraf Ibrokhimovna (2023). Improving the prevention and treatment of complications of spontaneous bacterial peritonitis in patients with liver cirrhosis of viral etiology. //Galaxy International Journal of Interdisciplinary Research 2023;11(4):388-394. Retrieved from https://giirj.com/index.php/giirj/article/view/5168
8. Oblokulov AR, MIMukhammadieva. (2022). Clinical and biochemical characteristics of liver cirrhosis patients of viral etiology with spontaneous bacterial peritonitis //Academicia Globe: Indersciense Research. 2022; 210-216 p.
9. Abdulloyevna M.S. (2023). Fast-Fast Sick Was In children Acute Respiratory Diseases Clinical-Laboratory Features //Scientific journal of applied and medical sciences, 2023;2(12):29-34. Retrieved from https://sciencebox.uz/index.php/amaltibbiyot/article/view/8680
10. Облоқулов А., Муҳаммадиева М. (2022). Клинико-лабораторная характеристика спонтанного бактериального перитонита при циррозе печени вирусной этиологиии. //Журнал вестник врача, 2022;1(3):66-69. извлечено от https://inlibrary.uz/index.php/doctors_herald/article/view/2016
11. Mukhtorova SA (2022). Clinical and laboratory features of acute respiratory disease in frequently ill children. //Web of science: International scientific research journal, 2022;1026-1030.
12. Mukhtorova Shokhida Abdulloevna. (2023). Characteristic features of the course of citomegalovirus infection in children. //Galaxy International Interdisciplinary Research Journal, 2023;11(4):484-487. Retrieved from https://giirj.com/index.php/giirj/article/view/5150.

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