https://www.proconference.org/index.php/usc/article/view/usc30-00-013
DOI: 10.30888/2709-2267.2025-30-00-013

УДК:616-02+616-07+616.98+616-053.2

ETIOLOGY AND CLINICAL CHARACTERISTICS OF INFECTIOUS MONONUCLEOSIS IN CHILDREN

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Abstract. *Infectious mononucleosis is an acute viral disease primarily caused by Epstein-Barr virus (EBV), with cytomegalovirus (CMV) and other pathogens also contributing to mononucleosis-like syndromes. This study aimed to analyze the etiology and clinical course of infectious mononucleosis in hospitalized children. A retrospective analysis of 40 inpatient records from 2020-2024 was conducted. The majority of hospitalized children were aged 1-6 years (56%), with a predominance of boys (65%). Fever (93%), lymphadenopathy (85%), and tonsillar syndrome (90%) were the most common symptoms. Atypical mononuclear cells were detected in 22.5% of cases, leukocytosis in 75%, and lymphocytosis in 57.5%. EBV was identified as the primary causative agent in 65% of cases, CMV in 5%, and EBV+CMV coinfection in 12.5%. The disease course was severe in 53% of cases. These findings highlight the diverse clinical presentation of infectious mononucleosis and the importance of accurate etiological diagnosis for effective management.*

Key words: *infectious mononucleosis, Epstein-Barr virus, cytomegalovirus, pediatric infection, etiology, children.*

Introduction.

Infectious mononucleosis is an acute viral disease primarily caused by Epstein-Barr virus (EBV), a member of the Herpesviridae family. It is characterized by fever, pharyngitis, lymphadenopathy, and atypical lymphocytosis. The clinical picture of infectious mononucleosis is polymorphic, which can be the cause of diagnostic errors. Knowledge of the typical signs and symptoms of infectious mononucleosis allows to distinguish it from other similar diseases, recognize complications and prescribe treatment in a timely manner [1].

Epstein-Barr virus causes polyclonal activation of B-lymphocytes, which leads to the development of B-cell lymphomas. Its role in the occurrence of nasopharyngeal carcinoma has been proven. High lymphoproliferative potential of the virus has been observed in immunocompetent individuals in recent years [2].

While Epstein-Barr virus (EBV) is the primary cause of infectious mononucleosis, accounting for approximately 80% to 90% of cases, other pathogens can induce a mononucleosis-like illness. Notably, cytomegalovirus (CMV) is responsible for about 10% of such cases. Additionally, infections with Toxoplasma gondii, adenovirus, viral hepatitis, HIV, and rubella virus have been associated with mononucleosis-like syndromes [1, 3].

Aim: to analyze the etiology and clinical course of infectious mononucleosis in hospitalized children.

Materials and methods: 40 medical inpatient records of children were analyzed. Patients were hospitalized at the Regional Infectious Diseases Hospital in 2020-2024.

Results.

Among children who were hospitalized with infectious mononucleosis, children aged 1-3 years (32%) and 4-6 years (22%) predominated. The distribution by gender was as follows: 65% boys and 35% girls. 60% were urban residents, 40% rural. Upon hospitalization, children had complaints of fever (93%), enlarged lymph nodes (85%), sore throat (55%), difficulty nasal breathing (55%), cough (15%), rash (13%).

Objective examination revealed intoxication syndrome in 92.5% of patients; tonsillar syndrome - in 90%, lymphadenopathy - in 85%; hepatosplenomegaly (62.6%), adenoiditis (55%) and exanthema (12.5%) were less frequently observed. First-degree tonsillar hypertrophy was found in 10% of patients, second-degree - in 42.5%, and third-degree - in 47.5%. In most children, infectious mononucleosis was severe (53%), and in 47% - of moderate severity.

In the complete blood analysis, leukocytosis was detected in 75% of children, lymphocytosis - in 57.5%, monocytosis - in 22.5%, atypical mononuclear cells (more than 10%) - in 22.5%, increased ESR - in 67.5%. In the biochemical blood test, cytolysis was detected in 42.5% of children. No deviations from the norm were detected in other biochemical indicators.

All children were tested for antibodies to Epstein-Barr virus by ELISA - antiVCA IgM, antiEBNA IgG, and antibodies to cytomegalovirus (CMV) - antiCMV IgM and anti CMV IgG. In 65% of cases, EBV was the causative agent, in 5% - CMV, in 12.5%,

EBV+CMV coinfection was detected, in 17.5% of cases, the etiology was not established. 60% of children with positive ELISA results were examined by PCR, in all of them, EBV DNA was detected in the blood.

Bacteriological analysis of tonsil smears revealed: Staphylococcus aureus (30%), beta-hemolytic streptococcus (27.5%), Candida fungi (25%), alpha-hemolytic streptococcus (12.5%), and others (5%). All children received symptomatic treatment, antibacterial therapy was prescribed in 67.5%, glucocorticosteroids - in 53% of cases.

Conclusions.

Among those hospitalized with infectious mononucleosis, children aged 1-6 years predominated (56%). In 53% of cases, the course of the disease was severe.

In children with infectious mononucleosis, intoxication syndrome (92.5%), tonsillar syndrome (90%), lymphadenopathy (85%) were most often detected, and hepatosplenomegaly, adenoiditis, and exanthema were detected in 62.5%, 55%, and 12.5% of patients, respectively.

Characteristic changes in the complete blood count - atypical mononuclear cells, leukocytosis, lymphocytosis, monocytosis were detected in 22.5%, 75%, 57.5% and 22.5% of children, respectively.

The causative agents of infectious mononucleosis were as follows: EBV in 65% of cases, CMV - in 5%, coinfection of EBV + CMV was detected in 12.5% of children, and in 17.5% the etiology was not established.

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Статтю відправлено: 19.03.2025 р.