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INFECTIOUS MONONUCLEOSIS: CLINICAL AND LABORATORY FEATURES IN CHILDREN OF THE SAMARKAND REGION

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Abstract
Infectious mononucleosis (IM) is a clinically significant viral infection caused predominantly by the Epstein–Barr virus (EBV), a member of the Herpesviridae family. Approximately 80–90% of the global population acquires EBV infection during their lifetime. Early and accurate identification of infectious mononucleosis contributes to improved treatment outcomes, especially through reducing the duration of fever, lowering lymphoid tissue proliferation, and accelerating the resolution of hepatocellular cytolysis.

Keywords: Infectious mononucleosis, Epstein–Barr virus (EBV), atypical mononuclear cells, children, clinical features.

Introduction

Infectious diseases continue to be a dominant component of global morbidity. WHO projections indicate that in the 21st century, viral infections will play an increasingly significant role in overall disease burden. Among viral pathogens, herpesviruses represent a particularly relevant group due to their lifelong persistence in the human body.

Epstein–Barr virus, one of the most studied herpesviruses, is responsible for infectious mononucleosis — a disease frequently observed in children and adolescents. EBV infection is notable for:

- its high rate of global prevalence,
- ability to establish lifelong latency in B lymphocytes,
- potential to trigger immune dysregulation and contribute to secondary immunodeficiency.

Despite spontaneous recovery in most cases, EBV infection may lead to long-term consequences, including chronic fatigue syndrome, autoimmune disorders, and in rare cases, oncological complications (e.g., Burkitt lymphoma, nasopharyngeal carcinoma), particularly in genetically predisposed individuals.

Considering the increasing incidence of EBV-associated diseases worldwide, studying infectious mononucleosis in regional pediatric populations is clinically important.

Purpose of the Study

To investigate the clinical manifestations, epidemiological characteristics, and laboratory indicators of infectious mononucleosis caused by Epstein–Barr virus in children hospitalized in the Samarkand region.

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Materials and Methods

The study included 21 children aged 3–10 years treated at a regional infectious disease hospital. Inclusion criteria:

- typical clinical symptoms of infectious mononucleosis,
- laboratory confirmation of EBV infection.

Diagnostic procedures performed:

Diagnostic category	Methods used
Clinical evaluation	ENT examination, evaluation of lymph node involvement, abdominal palpation
General laboratory tests	CBC, urinalysis, stool examination
Specific diagnostics	**PCR for EBV DNA in serum**, detection of atypical mononuclear cells

Patients were classified by age, sex, severity of disease, and organ involvement (lymph nodes, liver, spleen). Disease severity was graded according to standard pediatric infectious disease guidelines.

Results and Discussion

Most children (57.1%) were between 3–7 years old, demonstrating the predominance of EBV infection in preschool-aged patients. Boys constituted 66.7% of cases.

A significant proportion of children initially received treatment from ENT specialists for incorrectly diagnosed tonsillitis, which delayed correct diagnosis and led to hospitalization in the second week of illness.

Symptoms observed:

Clinical manifestation	% of children
Sore throat	90.5%
Nasal obstruction	85.7%
Headache	85.7%
Malaise and weakness	76.2%
Cough	28.6%
Excessive sweating	71.4%

Hyperthermia was recorded in all children prior to hospitalization. Fever lasted 8–11 days and showed an irregular pattern.

Pharyngeal examination revealed otorhinolaryngologic forms of tonsillitis:

- Catarrhal — 52.4%
- Follicular — 28.6%
- Lacunar — 19%

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Lymphadenopathy was bilateral in all cases. Lymph nodes ranged from pea-sized to walnut-sized and remained mobile and non-adherent—signs consistent with benign reactive lymphoid hyperplasia. Due to delayed hospitalization, organ enlargement was frequently observed:

Organ change	% of children
Hepatomegaly	**85.7%**
Splenomegaly	**57.1%**

CBC revealed leukocytosis in most children, reaching up to 25.0 ×10⁹/L in severe cases. Mild anemia was detected in 85.7% of patients.

Atypical mononuclear cells — the key diagnostic marker of infectious mononucleosis — were present in 76.2% of children.

Biochemical liver abnormalities correlated with hepatomegaly: elevated AST and ALT levels were documented, although bilirubin and thymol tests remained normal, indicating moderate cytolytic syndrome without cholestasis.

Conclusion

The study demonstrates that:

- Infectious mononucleosis in children of the Samarkand region occurs predominantly in a moderate clinical form.
- Most patients present late (on days 7–14), which increases the risk of hepatosplenomegaly.
- Atypical mononuclear cells and PCR confirmation of EBV remain the most reliable diagnostic indicators.

Early recognition and differential diagnosis — particularly distinguishing IM from common tonsillitis — are essential for preventing complications and reducing unnecessary antibiotic use.

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