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# Modern examination methods and pathogenesis for the detection of entereviruses

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**Abstract.** The article presents modern information about the etiology, epidemiology, and clinical manifestations of enterovirus infection in children and adults. Issues of differential diagnosis, the use of laboratory research methods, treatment and prevention of infection are considered.
**Keywords:** enterovirus infection, clinical picture, epidemiology, etiology, diagnostic principles, treatment.

## Introduction

*According to modern concepts, the term "enterovirus infection" unites a group of diseases caused by numerous viruses of the genus Enterovirus and Parechovirus of the Picornaviridae family, characterized by an intoxication syndrome and polymorphism of clinical manifestations. Enteroviruses (EV) and parechoviruses (PE) are ubiquitous microorganisms that are transmitted from person to person through direct and indirect contacts [1-3]. They cause a wide range of diseases in people of all ages, but most often in children. Enterovirus infection (EVI) is a typical anthroponosis, the sources of infection in which are patients or virus carriers*

## Materials And Methods

*The traditional classification divides enteroviruses into five groups [5]. Each of them contains a variable number of serotypes.*

- *Polioviruses - serotypes 1-3.*
- *Coxsackie viruses group A - serotypes 1-22, 24.*
- *Coxsackievirus group B - serotypes 1-6.*
- *Echoviruses (ECHO) - serotypes 1-9, 11-21, 24-27, 29-33.*
- *Enteroviruses - serotypes 68-71, 73-91, 93-102, 104-107, 109-111, 113, 114, 116.*

*The number of new enterovirus serotypes continues to grow.*

*ECHO viruses 22 and 23, previously classified as enteroviruses, were isolated in 2019 into the independent genus Parechovirus and received the designations HPEV1 and HPEV2 [3]. Parechoviruses have common biological, clinical and epidemiological characteristics with enteroviruses, but differ significantly from them in the genomic sequence. Currently, 11 serotypes of parechoviruses have been described.*

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**Results And Discussion**

Enteroviruses exist in nature thanks to two reservoirs: natural (soil, water, food) and the human body, in which they can accumulate and through which, accordingly, spread. The main epidemiological feature of the infection is the ability to form the so-called in humans. "healthy virus carrier" with long-term, up to several weeks, release of the pathogen into the external environment. This factor contributes to the survival of the virus in the human population, despite the high level of immune individuals. For the same reason, enteroviruses, along with influenza viruses, are the most common cause of nosocomial viral infections.

Infection with enteroviruses and parechoviruses occurs throughout the year, but a significant increase in the incidence of EVI in the northern hemisphere occurs in the summer and autumn months. In warm regions, this periodicity is absent; in the tropics, the infection is recorded all year round [4].

EVI occurs in all age groups. However, its incidence is inversely proportional to age. Approximately 75% of EVIs recorded annually by WHO occur in children under 15 years of age. Children under 1 year old get sick several times more often than older children and adults [2]. For unknown reasons, males are at greater risk of developing EVI.

The main mechanism of infection transmission is fecal-oral, carried out through food, water and household contact. Less commonly, the infection is transmitted by airborne droplets and transplacentally (from mother to fetus). Apparently, droplet introduction of the virus into the respiratory tract is accompanied by subsequent evacuation of the pathogen into the oropharynx, where, after ingestion, it enters its ecological niche—the intestines, followed by the traditional development of the infectious process.

The incubation period for EVI lasts from 2 to 35 days (usually 2-3 days). A unique feature of enteroviruses is their ability to cause "unpredictable variants" of the disease. The same type of virus can cause both very mild, erased forms of the disease affecting, for example, the respiratory tract or intestines, and extremely severe variants affecting the nervous and cardiovascular systems. One type of virus can cause both large epidemics and isolated diseases. At the same time, enteroviruses of different serotypes can cause the same clinical syndromes.

Some syndromes are more common in certain age groups: for example, aseptic meningitis is usually observed in infants, and myalgia and myopericarditis - in adolescents and young adults; herpetic sore throat - in children aged from 3 months to 16 years, acute hemorrhagic conjunctivitis - in patients aged from 20 to 50 years.

The vast majority of cases of EVI (more than 80%) are asymptomatic, about 13% of cases are mild febrile illnesses, and only 2-3% of cases develop a severe form of the disease, mainly in young children and people with impaired immune systems.

Laboratory confirmation of the diagnosis of EVI is:

— detection of enteroviruses or their RNA in sterile types of clinical material;

— detection of enteroviruses or their RNA in non-sterile types of clinical material in the presence of an etiologically deciphered outbreak of EVI and in the presence of a clinical picture of the disease characteristic of this outbreak in the patient;

— detection of enteroviruses or their RNA in non-sterile types of clinical material in the absence of an outbreak and the correspondence of their sero- or genotype to the specific

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clinical picture of the disease (HFMD, herpangina, acute hemorrhagic conjunctivitis, uveitis and others);

— detection of enteroviruses or their RNA in two samples of non-sterile clinical materials of different types

**Conclusion**

Active immunoprophylaxis against EVI has not been developed (with the exception of poliomyelitis). Preventive measures come down to compliance with sanitary and hygienic standards. In foci of infection, medical observation of contact persons is established: 10 days - upon registration of mild forms of EVI (in the absence of obvious signs of damage to the nervous system): enterovirus fever, epidemic myalgia, herpetic sore throat and others; 20 days - when registering forms of EVI with damage to the nervous system [3].

**References**

1. Overview of Enterovirus Infections Last full review/revision June 2013 by Mary T. Caserta, MD Content last modified August 2013.
2. Ooi M.H., Wong S.C., Lewthwaite P. et al. Clinical features, diagnosis and management of enterovirus 71 // Neurol Lancet. - 2010. - Vol. 9. - R. 1097.
3. Harvala H, Walters KC, Simmonds P. Parechoviruses children: understanding a new infection // Curr Opin Infect Dis. - 2010. - Vol. 23. - P. 224.
4. Ankudinova L.A. Circulation of enteroviruses of the Coxsackie and ECHO groups among healthy children of Kyrgyzstan (St. Petersburg, November 15-16, 2011) // Proceedings of the Scientific Conference with international participation “Achievements of domestic epidemiology in the 20th century. A look into the future". St. Petersburg, 2011. - P. 143.
5. Adams, M.J., King, A.M.Q. and Carstens, E.B. Ratification vote on taxonomic proposals to the International Committee on Taxonomy of Viruses // Archives of Virology. — 2013. — Vol. 158. - R. 2023-2030.