



CHARACTERISTICS, PREVENTION AND COST OF GASTROENTERITIS CAUSED BY ROTAVIRUSES IN CHILDREN TODAY

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ABSTRACT

Rotavirus gastroenteritis is the leading cause of severe diarrhea among infants and young children worldwide. It is caused by rotavirus, a double-stranded RNA virus of the Reoviridae family. Diarrhea is usually watery and often accompanied by fever, vomiting and abdominal pain. By the age of five, almost every child in the world will be infected with rotavirus at least once. However, immunity develops with each infection and subsequent infections are less severe; rarely affects adults. There are five types of this virus, A, B, C, D and E. Rotavirus A is the most common, causing more than 90% of infections in humans.

The main part: Rotavirus infection (rotavirus) is an acute infectious disease caused by rotavirus and is characterized by damage to the gastrointestinal tract in the form of gastroenteritis with the development of dehydration (dehydration) syndrome. The causative agent of the disease is a virus of the Reoviridae family, genus Rotavirus. Rotaviruses are resistant to environmental factors, they remain viable in drinking water, open ponds and wastewater for several months, and in vegetables and fruits - up to 30 days.

The main source and reservoir of rotavirus infection is a sick person who excretes the virus with feces, as well as virus carriers, at the end of the incubation period and in the first days of the disease. The mechanism of transmission of the pathogen is fecal-oral.

Ways of transmission:

- ✓ contact-household (through dirty hands and household items);
- ✓ water (when drinking water containing viruses);
- ✓ food (often when using milk, dairy products);
- ✓ less often - by air.

The virus is transmitted through the fecal-oral route. It damages and injures the cells that line the small intestine and causes gastroenteritis (often called the "stomach flu" even though it's not related to the flu). Although rotavirus was identified by electron micrographic imaging in 1973 by Ruth Bishop and colleagues, and accounts for approximately one-third of all hospitalizations for severe diarrhea in infants and children, its importance has historically been overlooked in the public health community, particularly in developing countries.



underrated. In addition to affecting human health, rotavirus infects other animals and is a pathogen of livestock.

Rotavirus enteritis is usually an easily treatable disease in childhood, but among children under 5 years of age, rotavirus caused an estimated 151,714 deaths from diarrhea in 2019. Before the rotavirus vaccination program began in the United States in the 2000s, rotavirus caused approximately 2.7. severe cases of gastroenteritis in millions of children, nearly 60,000 hospitalizations, and about 37 deaths each year. After the introduction of the rotavirus vaccine in the United States, the rate of hospitalization decreased significantly. Public health campaigns to control rotavirus have focused on oral rehydration therapy for infected children and vaccination to prevent the disease. In countries that have added rotavirus vaccine to their childhood vaccination policies, the frequency and severity of rotavirus infections has decreased significantly.

Rotavirus A, which accounts for more than 90% of rotavirus gastroenteritis in humans, is endemic worldwide. Each year, rotavirus causes millions of cases of diarrhea in developing countries, nearly 2 million hospitalizations, and approximately 453,000 deaths in children under five. It accounts for approximately 40% of diarrhea-related hospitalizations in children under five worldwide.

In the United States alone, before the rotavirus vaccination program began, more than 2.7 million cases of rotavirus gastroenteritis were reported each year, 60,000 children were hospitalized, and about 37 children died as a result of the infection. The main role of rotavirus in causing diarrhea is not widely known.

recognized in the public health community, especially in developing countries. By the age of five, almost every child is infected with rotavirus. It is the leading cause of severe diarrhea among infants and children, responsible for approximately 20% of cases and 50% of cases requiring hospitalization. Rotavirus causes 37 percent of diarrhea-related deaths and 5 percent of deaths among children under five. Boys are twice as likely to be hospitalized than girls. Rotavirus infections mainly occur during the cool and dry season. The number associated with food contamination is unknown.

Outbreaks of rotavirus A diarrhea are common among hospitalized infants, young children attending day care centers, and elderly people in nursing homes. In 1981, there was an outbreak in Colorado caused by contaminated municipal water. In 2005, the largest recorded diarrhea outbreak occurred in Nicaragua. This unusually large and severe outbreak was associated with mutations in the rotavirus A genome that likely helped the virus escape widespread immunity in the population. A similar large outbreak occurred in Brazil in 1977.

Rotavirus B, also called adult diarrheal rotavirus or ADRV, has caused an outbreak of severe diarrhea in China, affecting thousands of people of all ages. These epidemics were caused by sewage contamination of drinking water. Rotavirus B infections also occurred in India in 1998; the causative strain was named CAL. Unlike ADRV, the CAL strain is endemic. To date, outbreaks caused by rotavirus B have been limited to mainland China, and surveys suggest a lack of immunity to this strain in the United States.

Treatment of acute rotavirus infection is nonspecific and includes



symptom management and, most importantly, maintenance of hydration. If left untreated, children can die from severe dehydration. Depending on the severity of the diarrhea, treatment consists of oral rehydration, during which the child is given additional water containing a small amount of salt and sugar. Some infections are serious enough to require hospitalization, and fluids are given intravenously or through a nasogastric tube, and the child's electrolytes and blood sugar are monitored. Antibiotics are not recommended.

Rotavirus infections rarely cause other complications, and the prognosis for a well-managed child is excellent.

Abstract: Rotaviruses infect the young of many animal species and are a

major cause of diarrhea in wild and farmed animals worldwide. As a pathogen of livestock, especially young calves and pigs, rotaviruses cause economic damage to farmers due to the high morbidity and mortality associated with treatment costs. These rotaviruses are a potential reservoir for genetic exchange with human rotaviruses. There is evidence that animal rotaviruses can infect humans either by direct transmission of the virus or by adding one or more RNA segments to reassortants with human strains. Therefore, it is necessary for all of us to do actions that meet real hygienic requirements and feed the future generation with quality food and teach them strictly following hygienic requirements.

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13. GIPERTONIYA KASALLIGINI BUGUNGI KUNDAGI DOLZARBLIGI

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