

The Virus



Rotaviral infection is caused by rotavirus, a double-stranded RNA virus belonging to the family Reoviridae. It is called rotavirus because by electron microscopy the virus particle resembles a wheel.

Route of spread

Rotavirus spreads among humans by the faecal-oral and respiratory routes. There are seven different groups (A–G). Group A rotaviruses are the major cause of human infection, but groups B and C also infect humans. Rotavirus infections occur in most animal species, and although they can infect humans, are mostly associated with mild or no human disease, and no onward transmission.

Prevalence

Rotavirus infections are common in childhood and have a high morbidity with associated mortality in poor developing countries. In the UK, by the age of 5 years 90% of children have been infected. Re-infection can occur throughout life, but only the first infection after loss of maternal protection is associated with severe symptoms, and re-infections in older children and adults tend to be mild or asymptomatic. Infection usually occurs between November and March.

Incubation period

The incubation period of rotavirus is 1–2 days.

Infectious period

Patients are most infectious when symptomatic with diarrhoea and vomiting.

At-risk groups

Infection most frequently occurs in very young children under the age of 2 years. Re-infection occurs throughout life, but elderly persons over 60 years in age are particularly susceptible to symptomatic re-infection because of declining immunity. Immuno-compromised persons are more likely to have more severe and persistent symptoms, with prolonged diarrhoea and virus excretion.

Symptoms

Rotavirus infection is associated with watery diarrhoea and vomiting.

Differential diagnosis

Other viruses such as noroviruses, astroviruses, sapoviruses and adenoviruses can cause sporadic cases of diarrhoea and vomiting. Rotaviruses are seldom associated with outbreaks of diarrhoea and vomiting, but outbreaks can occur in very young and old patients.

Treatment

There is no antiviral treatment. Rehydration is appropriate in severe cases, especially in very young children.

Prophylaxis

There are oral vaccines, which can prevent rotavirus associated disease, but none are licensed in the UK or the West. These vaccines are being trialled in countries with a high incidence of rotavirus infection in children e.g. countries in the Indian subcontinent and Africa.

Infection Control

Rotaviruses are spread by the faecal-oral route and can cause outbreaks in hospitals and in the community. In hospitals, infected patients should be put into single rooms (with the door

closed) or cohorted until they are asymptomatic. Staff should wear aprons and gloves, and should wash their hands with soap and water before and after patient contact.

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