

## Case Report

## Rotavirus Diarrhoea-implications of vaccination

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### Abstract

Rotavirus diarrhoea is very common in infants and young children. 40% of hospitalized diarrhoea cases in children are due to Rotavirus. The clinical features of rotavirus infection include early vomiting, diarrhoea, irritability and dehydration. Mild fever can occur. Treatment is essentially correction of dehydration by Oral Rehydration Salt Solution (ORS) which should be given slowly till vomiting stops. There are no effective antibiotic against Rotavirus. In view of the highly infectious nature of the virus, vaccination is an urgent necessity. A number of vaccines have been developed to prevent Rotavirus infection in children.

**Keywords:** Rotavirus; Diarrhoea; Infants; dehydration; Vaccine

### Introduction

Acute watery diarrhea is caused by a number of bacterial, viral and parasitic microorganisms. Rotavirus virus, under the electron microscope, looks like a curt wheel (spokes of a wheel) is a double stranded RNA virus. The virus was documented by Ruth Bishop and her coworkers from biopsy specimens of duodenal mucosa of patients with acute diarrhoea in Australia in 1973 and is the commonest cause of acute diarrhoea in infants and young children below 5 years of age. The highest incidence is between 6 months and 2 years. Amongst hospitalized children with diarrhoea, 40% cases are due to Rotavirus. The virus enters the body through fecal oral route. It enters the small intestine and infects the cells [1-3].

### Diagnosis

Diagnosis of infection with rotavirus is made by screening of stool samples of diarrhoeal children for Rotavirus by enzyme linked immune sorbent assay (ELISA) and SDS phage electrophoresis. There are several licensed test kits on the market which are sensitive, specific and detect all serotypes of rotavirus. Other methods, include electron microscopy and RT-PCR, are used in research laboratories. Reverse transcription-polymerase chain reaction

(RT-PCR) can detect and identify all species and serotypes of human rotavirus [4-6].

### Clinical features and treatment

The clinical features of rotavirus infection include diarrhoea, early vomiting, irritability and dehydration. Mild fever can also occur. Treatment is essentially correction of dehydration by Oral Rehydration Salt Solution (ORS) which should be given slowly till vomiting stops. Outbreaks of Rotavirus diarrhoea occur more in winter months. The diagnosis is easy when we find hospital beds for children are full of diarrhoea cases that have mild fever, vomiting and are irritable. The children are~ 2 years of age. The illness subsides in about 3-5 days [7].

### Vaccine development and Implications

Rotavirus infection still occurs in the developed countries like the United States despite of improvement of sanitation and safe water. Since Rotavirus is a highly contagious disease and antibiotics are ineffective, the best strategy for prevention is vaccination in neonates. The vaccines that are available include Rotarix by Glaxo-smith Kline, Rota-teq by Merck, Rota shield, UK based bovine-human reassortant vaccine, RV3 neonatal stain vaccine and few others. A number of children after Rotavirus vaccination in the United States of America developed intussusceptions, which were attributed to the vaccine. However, later after thorough investigation, it was found out that the occurrence of intussusceptions were no more than background noise and not linked to the vaccine. The

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vaccination was resumed. Following development of Rotavirus vaccines and vaccination there has been a dramatic decrease in hospitalizations and emergency room visits for rotavirus in the developed countries. Physicians have recommended that rotavirus vaccination should be included in the Expanded Immunization Programme (EPI) [8-10].

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