Rotavirus Infection

Rotaviruses are a group of viruses which cause acute stomach and bowel upset (*gastroenteritis*) in all ages. Several names (such as, infantile diarrhea, winter diarrhea, acute nonbacterial infectious gastroenteritis, and acute viral gastroenteritis) are given to the infection. It is caused by this most common and widespread group A rotavirus. Children 6 months to 2 years of age, premature infants, the elderly, and the immunocompromised are more likely to get severe symptoms caused by infection. Rotavirus gastroenteritis, in time, gets well without treatment. A person with rotavirus diarrhea often has large numbers of viruses in his/her feces. You can get an infection through contaminated hands, objects, or utensils.

Rotavirus is one type of virus that causes diarrhea. This occurs especially in young children. It is a common cause of infection and diarrhea in the child care setting. Rotavirus infection usually occurs during the winter months. Some children have no symptoms of rotavirus infection. But others may have severe vomiting, watery diarrhea, and fever. In some cases, there may also be a cough or runny nose.

CAUSES

- Rotaviruses are transmitted by the fecal-oral route. This means hands dirty with human waste (*fecal contaminated*) come in contact with your food or mouth.
- Person-to-person transfer through contaminated hands is probably the most common way rotaviruses are spread in groups of people.
- Infected food handlers may contaminate foods. This can occur with foods that require handling and no further cooking. Examples are salads, fruits, and hors d'oeuvres.
- Rotaviruses are quite stable. They can be hard to control and eliminate in water supplies.

SYMPTOMS

- It causes mostly vomiting, watery diarrhea, and low-grade fever.
- The incubation period (after infection but before symptoms show) ranges from 1-3 days.
- Symptoms usually begin with vomiting. Diarrhea follows for 4 to 8 days. Temporary dairy (*lactose*) intolerance may occur.
- Recovery is usually complete. **Severe diarrhea without fluid and electrolyte replacement may result in death.**

DIAGNOSIS

The disease is diagnosed by identifying the virus in the stool of the patient (bowel movements).

TREATMENT

There is no cure for rotavirus. Most people develop an immune response. This eventually gets rid of the virus. While this natural response develops, the virus can make you very ill. The majority of people affected are young infants. So the disease can be dangerous. The most common symptom is diarrhea. This alone can cause severe dehydration. It can also cause an electrolyte imbalance. Treatments for rotavirus are supportive. They are aimed at re-hydration. They can prevent the severe effects of dehydration. Anti-diarrheal medicines are not recommended. These may prolong the infection. They may prevent you from passing the viruses out of your body.

ORAL REHYDRATION THERAPY (ORT)

The primary treatment for dehydration in developing countries is ORT (*oral rehydration therapy*). This means the replacement of fluids. With diarrhea, levels of an electrolyte (*sodium*) drop. Simply giving saline (*sodium*) solution will not work. The ability to absorb sodium in the bowel is not normal. Extra sodium in the bowel could actually lead to more water loss. The ability of the body to absorb sugar (*glucose*) is not affected by diarrhea. If sodium is given with glucose, it helps the sodium be absorbed.

When the amount of sodium in the blood rises, water reabsorbs from the gut instead of being passed through. **This discovery led to the development of ORT. It was adopted by the World Health Organization (WHO) in 1978 as its main method for preventing diarrheal deaths.**

CONTENTS OF ORAL REHYDRATION SALTS (ORS) RECOMMENDED BY WHO:

Reduced osmolarity ORS
Sodium Chloride, 2.6 g/L
Glucose, anhydrous, 13.5 g/L
Potassium chloride, 1.5 g/L
Trisodium citrate, dihydrate, 2.9 g/L

Total Weight 20.5 g/L

Reduced osmolarity ORS

Sodium, 75 mMol/L
Chloride, 65mMol/L
Glucose, anhydrous,75 mMol/L
Potassium, 20 mMol/L
Citrate, 10 mMol/L

Total Osmolarity 245 mMol/L

These packets cost only a few cents each. The problem is distribution. It is estimated that ORT is used to treat about half the cases of diarrhea in the developing world. But millions of children have yet to be reached.

HOMEMADE ORT

In addition to these packets, ORT can be made at home. The ingredients are:

- **1 liter of water (a little more than 32 ounces or a quart).**
- **1 level teaspoon of salt.**
- **8 level teaspoons of sugar.**

Proper measurement is important. Too much sugar (more than 3%) can make diarrhea worse.

SEEK IMMEDIATE MEDICAL CARE IF:

- There is decreased urination.
- You have a dry mouth, tongue or lips.
- You notice decreased tears or sunken eyes.
- You have dry skin.
- Your breathing is fast.
- The fingertip takes more than 2 seconds to turn pink again after a gentle squeeze.
- There is blood in the vomitus or stool.
- Your abdomen becomes distended or very tender.
- There is persistent vomiting

Most of this information is courtesy of the Center for Disease Control and Prevention of Food Illness Fact Sheet.

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