**GASTROENTERITIS**

Gastroenteritis is a water-borne disease which is characterized by the inflammation of the stomach or intestines.

**Transmission**: The infection process is mainly spread by the **fecal-oral route** and the viruses responsible for the occurrence of **gastroenteritis disease** are the **most active** and easily transmit the disease when the **temperature is low** in comparison to the bacteria-caused diarrheal diseases that usually come about during summer or warmer season. Infants (1 to 11 months of age) are more prone to viral gastroenteritis which leads to poor absorption of food material by the small intestine (malabsorption), impairment of sodium transport, and diarrhea. The impairment is attributed to the fact that virus attacks the upper intestinal epithelial cells of the villus thereby causing childhood deaths particularly in developing countries.

It has been reported that in developing countries where malnutrition is the common problem, diarrheal diseases lead to 5 to 10 million deaths per year. Current estimates are that viral gastroenteritis produces 30 to 40% of the cases of infectious diarrhea in the United States, far outnumbering documented cases of bacterial and parasitic diarrhea (the cause of approximately 40% of presumed cases of diarrhea remains unknown). In the United States, rotaviruses account for about 3.5 million cases of illness, resulting in 35% of the hospitalizations for gastroenteritis, and 75 to 150 deaths each year.

**Symptoms**: The disease can be asymptomatic, however, vomiting, mild diarrhea with headache and fever to a severe and occasionally fatal dehydration has been observed. The disease can be cured by replacing oral fluids with isotonic liquids, analgesics (reduces pain), and antiperistaltic agents.

**Causative Agent**: The disease is mainly caused by four major categories of viruses: **Rotaviruses, Norwalk and Norwalk-like viruses, Caliciviruses, and Astroviruses**; the epidemiological and clinical characteristics of which have been described in the table below:

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| **Virus**  | **Epidemiological Characteristics**  | **Clinical Characteristics** |
| Rotaviruses Group A | Endemic diarrhea in infants worldwide | Dehydrating diarrhea for 5–7 days; fever, abdominal cramps, nausea, and vomiting common |
| Rotaviruses Group B | Large outbreaks in adults and children in China  | Severe watery diarrhea for 3–5 days |
| Rotaviruses Group C | Sporadic cases in children in Japan | Their characteristics are similar to group A |
| Norwalk and Norwalk-like viruses  | Epidemics of vomiting and diarrhea in older children and adults; occurs in families, communities, and nursing homes; often associated with shellfish, other food, or water and infected food handlers | Acute vomiting, fever, myalgia, and headache lasting 1–2 days |
| Caliciviruses other than the Norwalk group | Pediatric diarrhea; associated with shellfish and other foods in adults | Rotavirus-like illness in children; Norwalk-like in adults |
| Astroviruses | Pediatric diarrhea; reported in nursing homes | Watery diarrhea for 1–3 days |

**Reference**: *Microbiology* (Lansing M. Prescott)