

Principle Causes of Viral Gastroenteritis

1. Rotavirus

→ number one in these infection

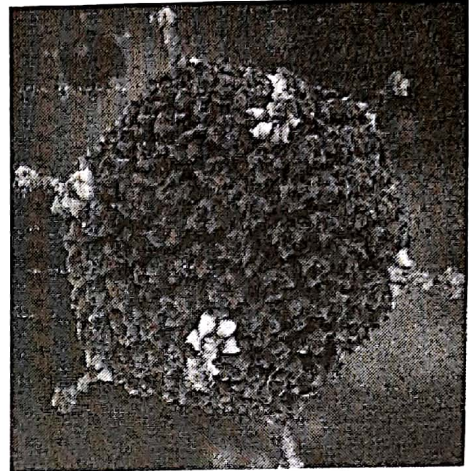
2. Other viruses

- ① ● Enteric adenoviruses
- ② ● Norwalk virus
- ③ ● Astroviruses

Enteric adenoviruses

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- Enteric adenoviruses 40 and 41 cause gastroenteritis, usually in very young children (under 2 years).
- Throughout the year, but peaks in autumn and early winter. *



- There is less vomiting and fever, but diarrhea is

protracted. For very long time

- it consider the second common cause of pediatric gastroenteritis after Rotavirus → First one

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Star Astroviruses

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SS(+) RNA

①

28-30 nm in diameter, single-stranded, positive-sense RNA.



②

Star-like morphology

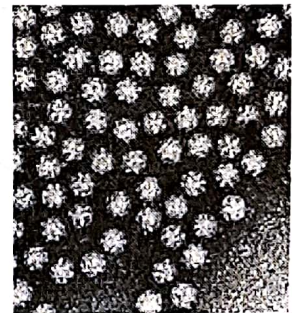
③

* Fecal-oral route *

④

- Infants and children, elderly institutionalized patients, and immuno-compromised persons (shed for prolonged periods).

very common infection



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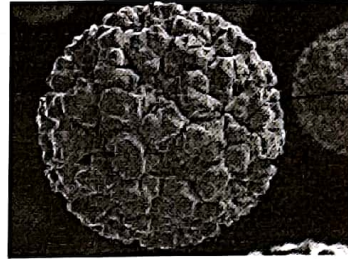
Caliciviruses

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- Small, non-enveloped, ssRNA of positive polarity.
- Norwalk virus is the main human pathogen in Caliciviruses family and is one of the most common causes of viral gastroenteritis in adults worldwide

NORWALK VIRUS

- Non-segmented, ss, positive polarity RNA genome, no virion polymerase.
- Non-enveloped.
- Icosahedral nucleocapsid.



→ has spikes
 10
 → has cup-shaped depression

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* its infection enhanced by → having low infection dose

* يفتقر الفيروس إلى غلاف واقية كبيرة
 * في الفيروسات التي تصيب الإنسان (أحد أسبابها)

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* excreted in stool after long period of recovery

Transmission & Epidemiology

- Fecal-oral route (contaminated seafood or water).
- Outbreaks typically occur in group settings (school / nurses room)

Pathogenesis & Immunity

- ① Limited to the mucosal cells of the intestinal tract.
- ② Watery diarrhea.
- ③ Many asymptomatic infections.
- ④ Re-infection can occur.

* resist chlorination of water

* stay on surface for long time

Laboratory Diagnosis

- Clinical PCR.

Treatment & Prevention

- Intravenous fluids. Personal hygiene and public health measures.

↳ diarrhea → لا ين
 has electrolyte loss

Caliciviruses
 (Norwalk)

its immunity is pref

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ROTA VIRUS

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* Disease:

Common cause of viral gastroenteritis in young children.

* Important Properties

70-nm-diameter wheel-shaped particles. Naked double-layered capsid with 11 segments of double-stranded RNA.

dsRNA

Resistant to stomach acid → reach the small intestine.

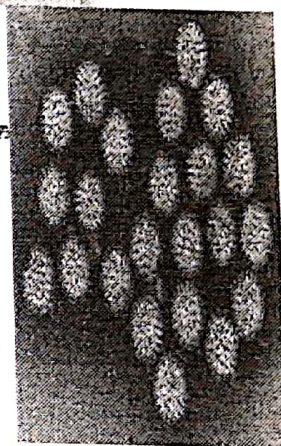
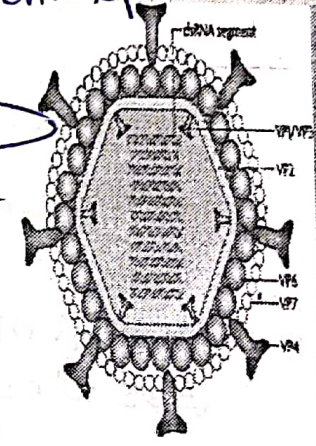
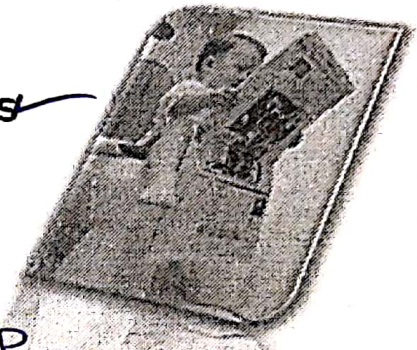
- There are at least six serotypes.

* it has also in viron

→ RNA-dependent - RNA Polymerase

outer surface protein → specific type antigen

So antibody⁴ may be specific and protective



طاباً لرسيد

Clinical Findings

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Symptom ➤ Nausea, vomiting, and watery, non-bloody diarrhea.

كاسه وقيء
كاسه زفير

➤ Gastroenteritis is most serious in young children, in whom dehydration and electrolyte imbalance are a major concern.

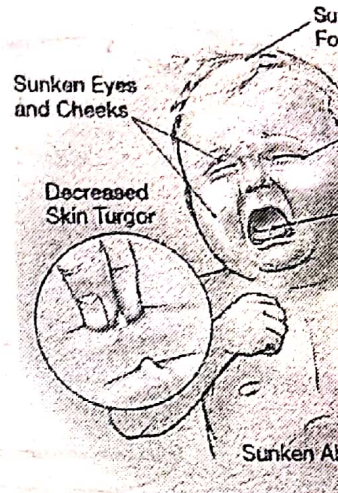
➤ Adults usually have minor symptoms.

جفاف

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Death

ضارباته الجفاف
malnourished
malnourished



Laboratory Diagnosis

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❑ The original demonstration of rotavirus in the stool was done by immunoelectron microscopy, in which antibody aggregated the virions, allowing them to be visualized in the



Treatment & Prevention

Supportive
KLS

• There is no antiviral therapy.

• Hygienic measures such as proper sewage disposal and hand washing are helpful.

• There are two rotavirus vaccines available. One is a live attenuated vaccine

(Rotarix) that contains the single most common rotavirus serotype.

