


INTESTINAL INFECTIONS



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Poliomyelitis



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- Poliomyelitis (polio) is a highly infectious viral disease, which mainly affects young children.
 - **Causative organism**
 - Polioviruses are nonenveloped, positive stranded RNA viruses belonging to the genus *enterovirus*, in the picornaviridae family
 - 3 antigenically distinct serotypes (types 1, 2, and 3)
 - **Mode of transmission**
 - Fecal- oral route
 - Droplet infection
 - **Incubation period**
 - 7-14 days (range 3 to 35 days)

Clinical Manifestations

Inapparent infection (subclinical infections)

- Occurs approximately in 91-96% of poliovirus infection.
- Incidence is more than 75 to 1000 times the clinical cases.
- No clinical manifestations, but infection is associated with acquired immunity.
- Recognition only by virus isolation or rising antibody titre.

Clinical Manifestations

Abortive Poliomyelitis or Minor illness

- In about 5% of patients, a nonspecific **influenza-like syndrome occurs 1–2 wk after infection, which is** termed abortive poliomyelitis.
- Mild non specific illness
 - Lasts for about 2 –3 days
- **Symptoms include:**
 - Fever
 - Headaches
 - Vomiting
 - General discomfort
- Complete recovery in 1 week
- Does not affect the CNS




Nonparalytic Poliomyelitis

- Occurs approximately in one per cent of all infections.
- Presenting features are stiffness and pain in neck and back.
- Disease lasts for 2-10 days.
- Recovery is rapid.

Paralytic polio

- Occurs in less than one per cent of infections.
- The virus enters the CNS and causes varying degree of disability with destruction of the motor nerve cells, but not the sensory nerve cells.
- Forms: spinal, bulbar, and bulbospinal.
- Paralysis usually appears within 4 days (around 7-10 days from onset of disease).
- Progression of paralysis reaches maximum in less than 4 day (may take 4-7 days)

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- Other symptoms- malaise, anorexia, vomiting, headache, sore throat, constipation and headache.
 - Signs of meningeal irritation
 - Tripod sign may be present
 - Asymmetrical, patchy flaccid paralysis
 - Deep tendon reflexes (DTR) diminished before the onset of paralysis.
 - Cranial nerve involvement seen in bulbar and bulbospinal paralytic poliomyelitis
 - Facial asymmetry, difficulty in swallowing weakness of voice
 - respiratory insufficiency may lead to death

Paralytic Poliomyelitis



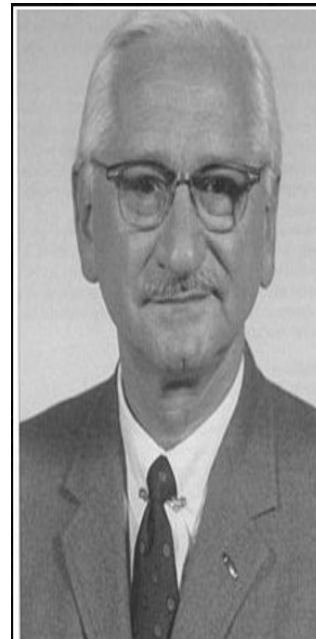
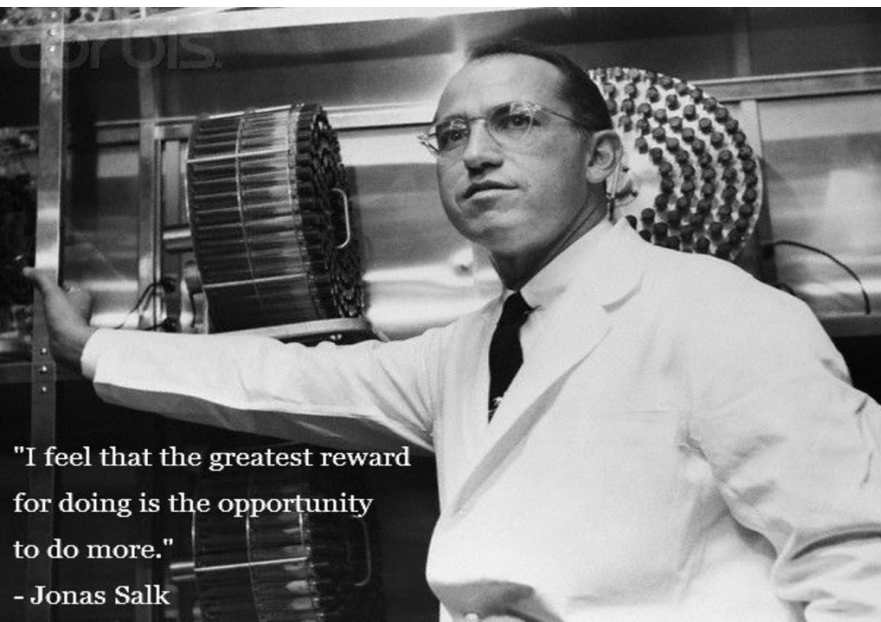


Treatment

- There is no specific antiviral treatment for poliomyelitis.
- The management is supportive and aimed at limiting progression of disease, prevention of ensuing skeletal deformities etc

Prevention

- Immunization is the effective means of preventing poliomyelitis.
- Two types of vaccines
 - Inactivated (Salk) polio vaccine(IPV)
 - Oral (Sabin) polio vaccine (OPV)



A scientist who is also a human being cannot rest while knowledge which might be used to reduce suffering rests on the shelf,

— *Albert Sabin* —

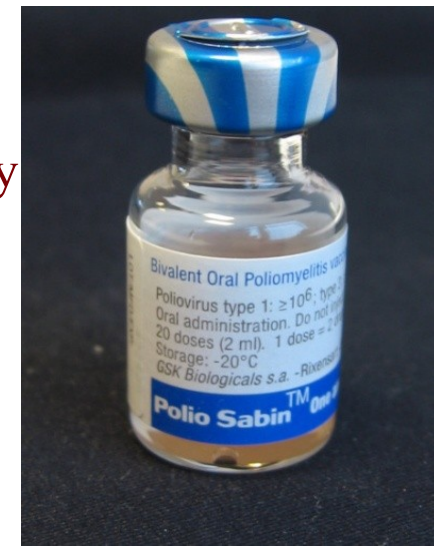
Inactivated (Salk) polio vaccine

- Contains 3 serotypes of vaccine virus
- Route of administration-intramuscular/ Subcutaneous.
- Schedule
 - First dose given at the age of 6 weeks
 - Next 2 doses 1-2 months apart
 - 4th dose after 6-12 month of 3rd dose
 - Additional doses prior to school entry
 - Repeated doses every 5 year after that till age of 18
 - Highly effective in producing immunity to poliovirus



Oral (Sabin) Polio Vaccine

- Contains 3 serotypes of vaccine virus
- Route of administration-intramuscular/ Subcutaneous.
- Schedule
 - Zero dose vaccination recommended in hospital delivery
 - First dose given at the age of 6 weeks
 - Next 2 doses 1-2 months apart
 - One booster dose 12-18 months later recommended
 - Highly effective in producing immunity to poliovirus





Pulse
Polio

Pulse polio immunization campaign

Pulse polio is an immunization campaign established by the government of India to eliminate person and by vaccinating children under age of Five years against polio virus . It was established in 1995-96.



WORLD
POLIO
DAY **24**
OCTOBER


END POLIO WITH POLIO DROPS

- 💧 *BOOST YOUR IMMUNE SYSTEM*
- 💧 *BUST THE MYTHS*
- 💧 *INCLUDE EVERY CHILD BELOW 5*



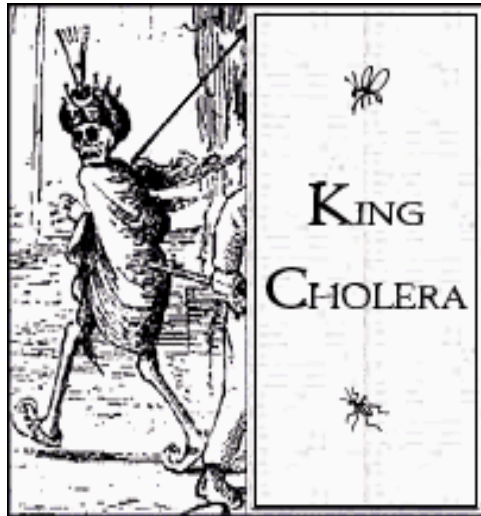
TWO DROPS OF LIFE

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A close-up photograph of a person's right arm and hand. The hand is a prosthetic, appearing as a black, textured grip. The arm is holding a silver, adjustable walking stick. The person is wearing a black wristband. The background is a scenic landscape featuring a paved road that stretches into the distance towards a bright sunset or sunrise. The sky is filled with soft, golden light and some clouds. The overall mood is one of resilience and hope.

Difficulties
in your life
don't come
to destroy you,

but to help you realize
your hidden potential.



CHOLERA



Cholera is an acute diarrhoeal disease caused by *V.cholerae*



■ Mode of transmission

- Faecally contaminated water
- Contaminated food and drinks
- Direct contact

■ Incubation period

- From few hours up to 5 days, but commonly 1-2 days.



Clinical features

- The severity of cholera depends on the rapidity and duration of fluid loss.
- A typical case of cholera shows 3 stages
 - Stage of evacuation
 - The onset is abrupt with profuse, painless, watery diarrhoea followed by vomiting
 - Patient may pass 40 stools in a day
 - Stools may have **rice water** appearance.



□ *stage of collapse*

■ The classical signs are

- Sunken eyes
- Hollow cheeks
- Scaphoid abdomen
- Sub normal temperature
- Washermans hands and feet
- Absent pulse
- Unrecordable BP
- Loss of skin elasticity
- Shallow and quick respirations
- Urine output decreases and may ultimately cease
- Death may occur at this stage



□ *Stage of recovery*

- If death does not occur, the patient begins to show signs of clinical improvement.

Prevention

Drink and use safe water/Eat safe food



Boil water, and bring it to a complete boil for at least 1 minute



Use one of the locally available water treatment products, or if not available, add 2 drops of household bleach for every 1 litre of water and wait 30 minutes before drinking



Boil water: Make sure to bring it to a complete boil for at least 1 minute

Cook food well for at least 30 minutes, and covered, at 60 °C



Eat food hot, and peel fruits and vegetables



Wash your hands often with soap and safe water



Before you eat or prepare food

Before feeding your children



After using the latrine or toilet

After cleaning your child's bottom



After taking care of someone who has diarrhoea, touching them, their stools, vomit or clothes



If no soap is available, scrub hands often with ash or sand and rinse with clean water

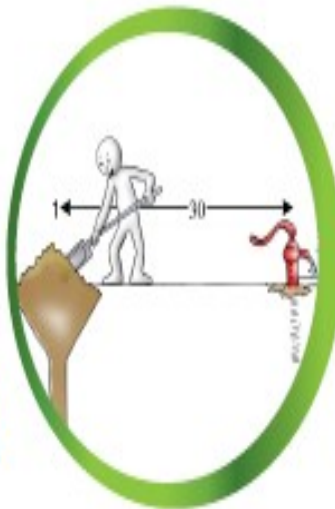
Use latrines or bury faeces; do not defecate in any body of water

Use latrines or other sanitation facilities, to dispose of faeces

Keep the latrine clean



If no latrine is available, defecate at least 30 metres away from any source of water and then bury the faeces properly



Dig new latrines or temporary pit toilets at least half a metre deep and 30 metres away from any body of water



Treatment

- Effectively treated by rehydration therapy.
- May be oral or intravenous
- Intravenous rehydration therapy used in severely ill patients who are unable to drink
 - IV ringer lactate is preferred
- Tetracycline 500mg four times a day is given orally for 3 days.
- Vaccination
 - Cholera vaccine is suspension of killed vibrios preserved in phenol.
 - 1^o immunization 2 doses are given s.c at interval of 4-6 hours
 - Boosters recommended every 6 months.
 - Two types of oral cholera vaccines are also available



*Typhoid
fever
(Enteric fever)*



- Typhoid fever is characterized by a continuous fever for 3 to 4 weeks, relative bradycardia, with involvement of lymphoid tissue & constitutional symptoms

- **Causative organism**

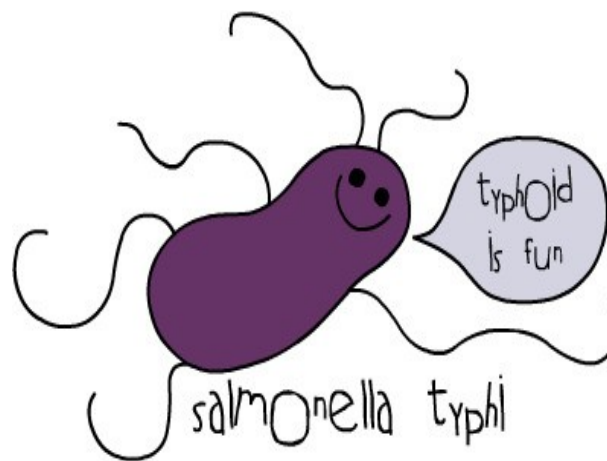
- Salmonella typhi*

- **Mode of transmission**

- Fecal – oral route
- Urine – oral route
- Direct transmission through contaminated hands or fingers
- Indirect transmission through ingestion of contaminated water, milk, food etc

- **Incubation period**

- Usually 10-14 days
- May be short as 3 days or long as 3 weeks.



Clinical features

■ **First week:**

- malaise, headache, cough & sore throat in prodromal stage.
- step-ladder fashion rise in temperature (40 - 41°C) over 4 to 5 days, accompanied by headache, vague abdominal pain, and constipation or pea soup Diarrhoea.

■ **Second week:**

- Between the 7th -10th day of illness, mild hepatosplenomegally occurs in majority of patients.
- Relative bradycardia may occur
- rose-spots may be seen.



- **Third week:**

- appear in the "typhoid state"
- a state of prolonged apathy, toxemia, delirium, disorientation and/or coma.
- Diarrhoea will then become apparent.
- If left untreated by this time, there is a high risk (5-10%) of intestinal hemorrhage and perforation.
- Rare complications: Hepatitis, Pneumonia, Thrombophlebitis, Myocarditis, Cholecystitis, Nephritis, Osteomyelitis, and Psychosis.

Treatment

- **General:** Supportive care includes Maintenance of adequate hydration, Antipyretics, Appropriate nutrition.
- **Specific:** Antimicrobial therapy is the mainstay treatment.
 - Chloramphenicol, Ampicillin, Amoxicillin, Trimethoprim & Sulphamethoxazole, Fluroquinolones
 - In case of quinolone resistance – Azithromycin, 3rd generation cephalosporins (ceftriaxone)

Immunization

- Its a complimentary approach to prevent typhoid.
- It doesn't get a 100% protection, but lowers incidents & complications of infection.
- Given to any age above 2 years.
- Its recommended to:
 1. Who living in endemic area.
 2. Household contact.
 3. Groups at high risk (school children, Hospital staff)
 4. Travellers proceeding to endemic area.

Typhoid fever prevention

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Wash hands



Drink boiled water



Clean fruits and vegetables



Get vaccinated