

# Community Medicine

## Control of Communicable disease (5)

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# Intestinal infection (TYPHOID FEVER)

## ***Out line :***

- ***Introduction***
- ***Definition***
- ***Etiology (Factors)***
- ***Causes***
- ***Mode of transmission***
- ***Diagnosis***
- ***Clinical manifestations***
- ***Complications***
- ***Prevention and Control of typhoid***
- ***Treatment of typhoid***
- ***Distinguish between Typhoid & Typhus***

## •*Introduction:-*

• **Typhos** in Greek means ,smoke and typhus fever got its name from smoke that was believed to cause it. **Typhoid** means typhus-like and thus the name given to this disease.

• The term Typhoid was given by **Louis 1829** to distinguish it from typhus fever. The term enteric fever or typhoid fever is a communicable disease, found only in man and includes both **typhoid fever caused by S.Typhi** and **paratyphoid** fever caused by **S.Paratyphi A, B and C** . It is an acute generalized infection of the reticulo endothelial system, intestinal lymphoid tissue, and the gall bladder.

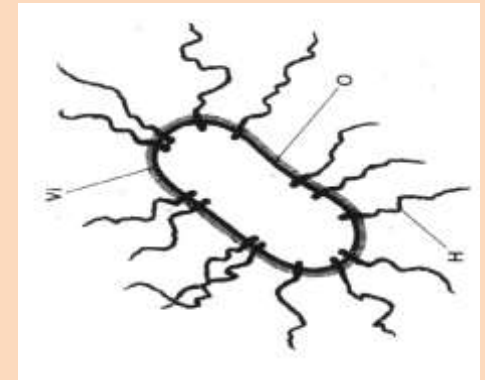
## ***Definition:-***

- Typhoid fever: An acute illness characterized by fever caused by infection with the bacterium *Salmonella typhi*.

# ***Etiology :***

- Typhoid fever is caused by a **virulent** **فتاك** **bacterium** **called Salmonella typhi** thriving in conditions of poor sanitation and crowding. **G-ve bacilli** in family **Enterobacteriaceae**

- Antigen: located in the cell capsule



- **Age group** : Typhoid fever may **occur at any age** but it is considered to be a disease mainly of **children and young adults**. In endemic areas, the highest attack rate occurs in **children aged 8-13 years**.

**Gender and race** : Typhoid fever cases are **more commonly seen in males than in females**. On the contrary, females have a special predilection ميل to become chronic carriers.

**Occupation** : **Certain categories of persons handling the infective material and live cultures of *S. typhi*** are at increased risk of acquiring infection.

**Socio-economic factors** : It is a **disease of poverty** as it is often associated with **inadequate sanitation** facilities and unsafe water supplies.

**Environmental factors** : Though the cases are observed through out the year, the peak incidence of typhoid fever is reported during **July - September**. This period coincides with the rainy **season** and a substantial **increase in fly** population.

**Social factors** : pollution **of drinking water** supplies, open air defecation, and urination, **low standards of food** and **personal hygiene**, and **health ignorance**.

**Nutritional status** : **Malnutrition** may enhance the susceptibility to typhoid fever by altering the intestinal flora or other host defences.

**Incubation period** : Usually **10-14** days but it may be as short as 3 days or as long as 21 days depending upon the dose of the inoculums.

**Reservoir of infection** : **Man** is the only known reservoir of infection - cases or carriers.

**Period of communicability**: A case is infectious as long as the bacilli appear in stool or urine.

# ***Causes:-***

1. Caused by the bacterium *Salmonella Typhi* .
2. Ingestion of contaminated food or water.
3. Contact with an acute case of typhoid fever.
4. Water is contaminated where inadequate sewerage systems and poor sanitation.
5. Contact with a chronic asymptomatic carrier.
6. Eating food or drinking beverages that handled by a person carrying the bacteria.
7. *Salmonella enteriditis* and *Salmonella typhimurium* are other salmonella bacteria, cause food poisoning and diarrhoea.



# ***Mode of Transmission:-***

- **Food and water contamination:**

by faeces or urine of a **patient** or **carrier**.

**examples :** - **Shellfish**

**( taken from sewage contaminated beds ),**

**- raw fruits, vegetables,**

**- milk ,**

**- products contam. by hands**

**(of carriers or missed cases),**

vehicle in many parts of world.

- **Flies can infect foods:**

(in which organisms may multiply to achieve an infective dose).

# ***DIAGNOSIS:***

**Typhoid bacilli can be isolated :**

- Blood culture from **blood**, **early** in disease = 1<sup>st</sup> week:.
- from **urine &/ faeces** after 1st week
- Agglutination reaction after 2nd week = 2<sup>nd</sup> week: Widal test.
- stool specimens 3<sup>rd</sup> week and after:.

# ***Clinical manifestations***

- **Fever up to 39-40<sup>0</sup>C in 5-7 days**
- **headache**
- **chills**
- **toxic tired**
- **sore throat**
- **cough**
- **abdominal pain**
- **diarrhea or constipation**

# Complications

## Intestinal bleeding or perforation

The most serious complication of typhoid fever

## Other, less common

- Myocarditis
- Pneumonia
- pancreatitis
- UTI
- Osteomyelitis
- Meningitis
- Psychiatric problems

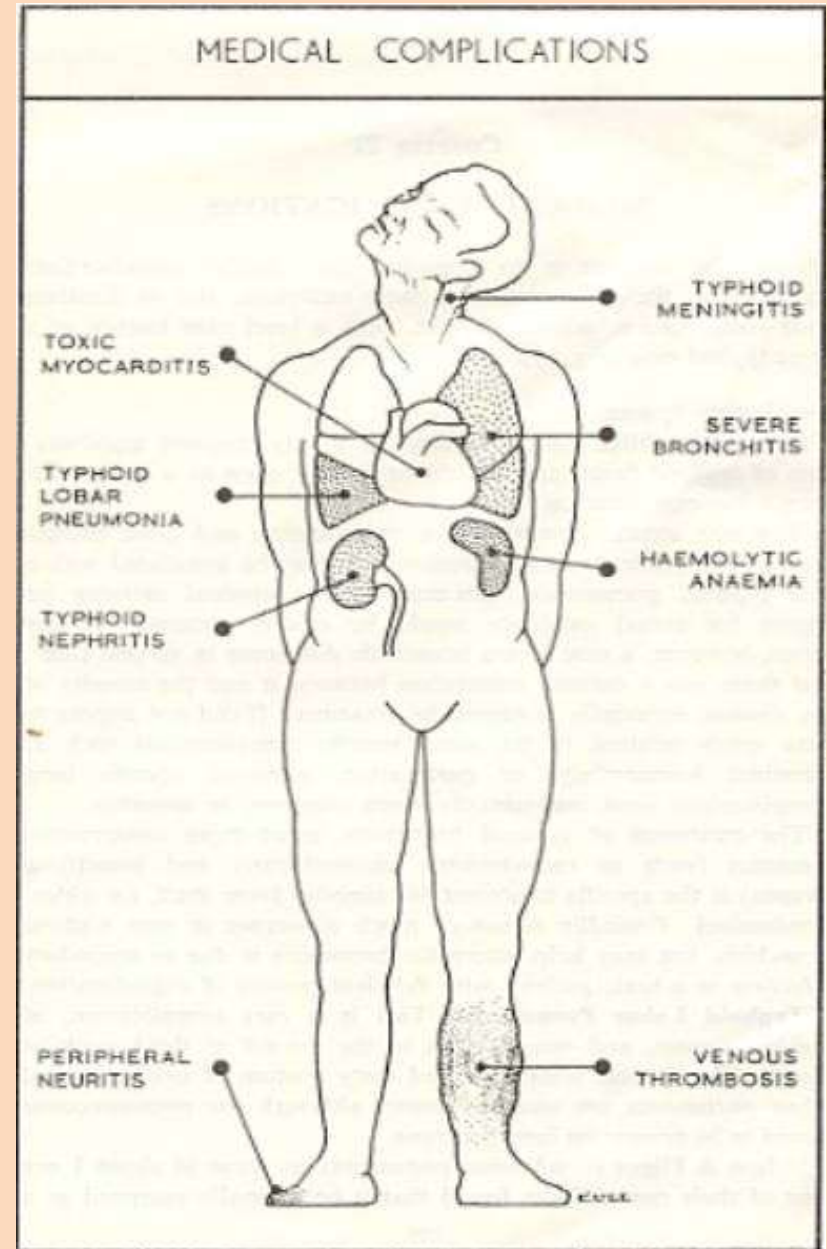


FIG. 31

# ***Prevention:-***

- Cutting the link between the agent and susceptible host through the environment:-

## ***A- Environment measures:-***

- Sanitary water supply
- Sanitary disposal of refuse and sewage.
- Control of flies.
- Sanitary control foods particularly raw food.

## ***B- Prevent measures for reservoir:-***

- Identification and control carriers

## ***C- Prevent measures for susceptible:-***

- Health education as regards personal hygiene.
- Exclusion of carriers from food handling.
- Encourage breast feeding for infants
- Vaccination is a complementary

# ***TREATMENT***

## **1-General :**

- ☐ Isolation and rest**
- ☐ suitable diet include easy digested food or half-liquid food and drinking more water**
- ☐ IV fluid to maintain water and acid-base and electrolyte balance**
- ☐ Symptomatic : antipyretic**

# ***Drug treatment***

- ***Ciprofloxacin***: 15 mg/kg/d for 7 days
- For quinolone-resistant: ***azithromycin*** 10mg/kg/d for 7 days OR ***ceftriaxone*** 75mg/kg/d for 10-14 days

## ***Distinguish between Typhoid & Typhus:-***

- Typhoid is a **food borne illness**, while Typhus is a **flea-borne disease**. There is a **typhoid vaccine that is recommended** for most travelers visiting undeveloped nations. It is often found in the colder mountainous regions of Africa, South America and Asia. Like typhoid, it most commonly occurs in areas where overcrowding and poor hygiene are common.
- It is a disease of poor environmental sanitation and hence occurs in parts of the world where water supply is unsafe and sanitation is substandard. The World Health Organization does not have a vaccine against typhus.
- Typhus:** Abdominal pain, rash, high fever, cough, headache, joint and muscle pain, nausea, chills, confusion and low blood pressure
- Typhoid:** Abdominal tenderness, agitation, bloody stool, chills, confusion, delirium, hallucinations, nose bleeds and fatigue.

## Distinguish between Typhoid & Typhus:-

- **Treatment:** Typhoid treatment involves fluids and electrolytes as well as low-grade antibiotics. Typhus treatment requires specific antibiotics and may need intravenous fluids or oxygen.
- **Prevention:** Typhoid is preventable through vaccination and avoiding contaminated food and water sources. Typhus prevention is more difficult, requiring repellents and insecticides. Maintaining proper hygiene is a must for preventing both diseases.

**Thank  
you**