

Typhoid & paratyphoid fever

Identification

- **collectively → enteric fever**
- **systemic, potentially fatal, febrile illnesses**

Infectious agent

- *Salmonella typhi*, the typhoid bacillus
- *Salmonella paratyphi*; three recognized serovars A, B and C

Epidemiology

- Worldwide
- Outbreaks → sanitation, inadequate sewerage systems rare in developed nations:
 - improvements in food handling
 - water/sewage treatment
- an important killer in developing countries

- non-endemic areas → sporadic → travelers.
- endemic regions → urban > rural
children & adolescents > adult
- 1:4 paratyphoid : typhoid , but S. Paratyphi A ↑↑
- MDR → 1989 in China and SEA & disseminated widely
 - _ Resist ordinary AB.
 - _ ↓↓susceptibility to cipro [MIC 0.125–1.0 g/ml]

Reservoir

■ Typhoid:

- Human gallbladder carriers
- rarely human urinary carriers

■ Paratyphoid:

- Humans
- rarely domestic animals

Mode of transmission

Salmonella is transmitted by

- contaminated water
- poor standards of hygiene in food preparation and handling.
- rarely direct contact.

Travelers → Water, ice, raw vegetables, salads & shellfish.

Incubation period

Typhoid → usually 8–14 days
vary from 3 days to one month

Paratyphoid fever is usually 1-10 days.

Clinical features

- Septicaemic illness
- HA, F, sweating, GBA, malaise and arthralgia.
- GIT → anorexia, abd pain, N, V, diarrhea or constip.
- Signs: bradycardia, splenomegaly and 'rose spots'.
- Compl: intestinal hemorrhage, perforation in untreated or delayed.
- Paratyphoid → milder, shorter ,fewer compli.

Diagnosis

- WBC
- culture of bacilli from the blood, urine or feces. Repeated sampling may be necessary
- Widal test (??)
- Phage typing → epidemio purposes & outbreak settings.

Period of communicability

- It is communicable as long as typhoid or paratyphoid bacilli are present in excreta.
- Some patients become permanent carriers.

Susceptibility and resistance

- everyone is susceptible.
- Immunity following clinical disease or immunization is insufficient to protect against a large infectious dose of organisms

Methods of control

_Preventive measures:

- Health education
- Sanitary disposal of excreta
- Protect, purify and chlorinate public water supply
- Safe food
- Control of flies
- Quality control
- Pasteurize dairy products.
- Control of carriers by excluding them from food handling and providing patient care until 3 consecutive -ve stool cultures obtained

_Immunization; 3 typhoid vaccines;

(1) Ty21a, an oral live attenuated S.Typhi

(days: 1,3,5,7 with a booster every 5 years).

(2) Vi CPS, a parenteral vaccine consisting of purified Vi polysaccharide from capsule

(once, with booster every 2 years).

(3)The old parenteral whole-cell typhoid/paratyphoid A and B vaccine is no longer licensed, largely because of significant side effects.

- The minimal age for vaccination is 6 years for Ty21a and 2 years for Vi CPS.
- Currently, there is no licensed vaccine for paratyphoid fever.

_Control of patients, contacts and immediate environment:

- Report to LHA.
- Isolation: enteric precaution
- Concurrent disinfection
- Immunization of contacts: of limited value in contacts of active cases, but valuable for contacts of carriers.
- Investigation of contacts and source of infection.

_Specific Rx:

- Hospitalization → severe.
- AB → cipro, ceftriaxone, chlora, amoxi or cotrim.
- Resistant → common.
- Failure → cipro.
- Education of patient → importance of completing AB, relapse, persisting excretion, personal hygiene.

_Control of environment

- Public health Ix → most likely source of infection
- Identify further cases
- Asymptomatic carriers
- Contaminated food items.

_Outbreak measures:

- Ix All cases, whether sporadic or part of a cluster

- ↓↓ infection risk during an outbreak may include:
 - Selective elimination of suspected contaminated food
 - Ensuring pasteurization of milk
 - Ensuring chlorination or boiling of drinking water
 - Reviewing integrity of waste and sewerage systems.

- Widespread use of typhoid vaccine not recommended.

**Thanks
For
your attention**