

Typhoid Fever and Paratyphoid Fever



Causative agents

Typhoid and paratyphoid fever are caused by the bacteria *Salmonella* Typhi and *Salmonella* Paratyphi respectively.

Clinical features

Typhoid fever is a systemic infection that can affect many organs. Common symptoms of typhoid fever include prolonged high fever, headache, malaise, nausea, abdominal pain, loss of appetite and constipation or diarrhoea (in adults, constipation occurs more often than diarrhoea). In some cases, rose-coloured spots appear on the trunk and enlarged spleen and liver may be present. In severe cases, there may be life-threatening intestinal bleeding and perforation. Apart from symptomatic patients, some asymptomatic infected individuals are able to shed bacteria in their faeces or urine. In addition, a small number of carriers continue to shed the bacteria in their faeces after recovery from the disease. Paratyphoid fever presents a similar clinical picture but the illness tends to be milder.

Mode of transmission

Typhoid and paratyphoid fevers are mainly transmitted via the faecal-oral route. The causative bacteria are passed in the faeces and urine of infected people, which may contaminate food, water or beverages and cause infection in those who have consumed the contaminated items. Types of food which are susceptible to contamination include shellfish (particularly oysters), raw fruits and vegetables and unpasteurised milk and dairy products. Transmission through sexual contact, especially among men who have sex with men, has rarely been documented.

Incubation period

The incubation period of typhoid fever usually ranges from 7 to 21 days (may also be ranged from 3 to 60 days). The incubation period of paratyphoid fever is usually 1 to 10 days.

Management

Infected individuals should seek medical advice for management. The infection can be effectively treated by antibiotics. Symptomatic treatment such as fluid replacement and adequate rest is also important. Strict personal hygiene should be observed in order to prevent transmission of the bacteria to others. The majority of patients can fully recover after treatment. However, about 2 to 5% of patients will become carriers of the bacteria and they may require long-term follow-up.

Prevention

1 Maintain good personal hygiene

- ▶ Perform hand hygiene frequently, especially before handling food or eating, and after using the toilet or handling faecal matter
- ▶ Wash hands with liquid soap and water, and rub for at least 20 seconds; then rinse with water and dry with a disposable paper towel or hand dryer. If hand washing facilities are not available, or when hands are not visibly soiled, hand hygiene with 70 to 80% alcohol-based handrub may be considered.
- ▶ Wear gloves and a surgical mask while disposing of or handling vomitus and faeces, and wash hands thoroughly afterwards
- ▶ Exclude infected persons and asymptomatic carriers from handling food and from providing care to children, elderly and immunocompromised people

- ▶ Refrain from work or attending school, and seek medical advice if suffering from vomiting or diarrhoea

2 Maintain good food hygiene

Adopt the 5 Keys to Food Safety in handling food, i.e. Choose (Choose safe raw materials); Clean (keep hands and utensils Clean); Separate (Separate raw and cooked food); Cook (Cook thoroughly); and Safe Temperature (keep food at Safe Temperature) to prevent foodborne diseases.

Be careful with procedures of cooking and preparing food

- ▶ Drink only boiled water from the mains or bottled drinks from reliable sources
- ▶ Avoid drinks with ice of unknown origin
- ▶ Wash fruits and vegetables thoroughly under clean running water and avoid eating those with damaged skin
- ▶ Scrub and rinse shellfish in clean water. Remove the viscera before cooking, if applicable. Heating to an internal temperature of 90°C for 90 seconds is necessary for cooking of molluscan shellfish. If possible, remove the shells before cooking as they impede heat penetration. Otherwise, boil at 100°C until their shells open; boil for additional three to five minutes afterwards. Discard any shellfish that do not open during cooking
- ▶ Cook all food thoroughly before consumption, particularly seafood and shellfish
- ▶ Keep the kitchen, cooking and eating utensils clean
- ▶ Use separate utensils (e.g. knife and chopping board) to handle raw food and cooked or ready-to-eat food

Hygienic food storage environment

- ▶ Eat food promptly after cooking. Leftovers should be cooled promptly and stored in the refrigerator within 2 hours. Perishable foods that has been kept at room temperature for more than 4 hours should be discarded

- ▶ Refrigerated leftovers should be reheated thoroughly before consumption, and should not be reheated more than once. Dispose of leftovers that have been kept in the refrigerator for more than 3 days

- ▶ Store food properly in a sealed or covered container
- ▶ Keep food that requires no refrigeration in a cool and dry place
- ▶ Handle and store raw and cooked food separately. Store raw meat, poultry, and seafood below ready-to-eat food or cooked food in the fridge to prevent juices from dripping onto other food
- ▶ Do not overload the refrigerator to allow cold air circulation
- ▶ Clean and clear the refrigerator and food cabinet regularly. Check the temperature of the refrigerator with a thermometer and ensure the fridge is kept at or below 4°C and freezer at or below -18°C

* Please visit the website of Centre for Food Safety for more information on food safety.

3 Other related information

- ▶ Immunisation for typhoid fever is not routinely recommended. Even vaccinated individuals should take care to avoid consumption of potentially contaminated food and water as the vaccine does not provide full protection from infection
- ▶ Travellers who visit endemic areas of typhoid fever may consider vaccination. For more information, please visit Travel Health Service website at <https://www.travelhealth.gov.hk>

Centre for Health Protection Website
www.chp.gov.hk

Health Education Infoline of the Department of Health
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