FACTSHEET TYPHOID FEVER

Expertenkomitee für Reisemedizin
Comité d'experts pour la médecine des voyages
Comitato di esperti per la medicina di viaggio
Expert committee for travel medicine

Key aspects briefly summarized

- Typhoid fever, also called enteric fever, is caused by the bacteria *Salmonella* Typhi and *Salmonella* Paratyphi.
- Infected persons shed the bacteria in their feces. In countries with low sanitation standards, the bacteria can then enter the drinking water system and lead to infections in other people.
- Frequent sources of infection are contaminated food and beverages.
- The main preventive measure therefore is "cook it, peel it, boil it or forget it" – meaning: avoid drinking uncooked water or water from unsealed bottles; avoid cooled/frozen products (e.g. ice cubes in drinks, ice cream) unless from a known safe source; avoid uncooked vegetables, peel and clean fruit and vegetables yourself and only with known safe drinking water.
- A vaccine is available and recommended: a) for travelers to the Indian subcontinent or to West Africa, b) for travelers visiting friends and relatives or for long-term travelers also to other sub-/tropical areas.

Disease

Typhoid fever is a bacterial disease that affects the whole body and mainly presents with high fever, often accompanied by drowsiness ("typhos" in Greek stands for delirium) and severe headaches. If the infection is treated with appropriate antibiotics, mortality is very low. If left untreated however, complications may follow, which can lead to significant mortality. Typhoid fever must be clearly distinguished from salmonellosis, caused by a large range of non-typhoidal salmonella species that mainly cause benign diarrheal symptoms worldwide.

Occurrence / Risk areas

The highest occurrence of typhoid fever is on the Indian subcontinent (Afghanistan, Pakistan, Nepal, Bhutan, India and Bangladesh). This is also the region with a steady increase in antibiotic resistance. The disease also occurs in the whole sub-/tropical region, but with lower frequency. It used to occur also in Europe and North America, but the disease has disappeared thanks to improved water and sanitation standards.

Transmission

Typhoid fever is transmitted via the fecal-oral route: bacteria are shed in the feces of infected persons and – if insufficient hand hygiene is practiced – infected persons may contaminate the food and drinking water supply of their families. In regions with low sanitation standards, contaminated feces may also contaminate the public drinking water supply.

Symptoms

The incubation period – time between infection and first symptoms – can vary between 3 days to 3 weeks. The principle symptom of typhoid fever is high-grade fever (39° - 41° C) accompanied by strong headache and drowsiness. In the initial phase of the disease, patients often complain of constipation. In later stages, this may turn into diarrhea. In later stages of the disease – and in the absence of correct treatment – complications such as septicemia, intestinal hemorrhage or perforation can follow, which may lead to considerable mortality.

Treatment

Appropriate antibiotic treatment cures typhoid fever. Treatment should be adapted according to the resistance profile of the bacteria. On the Indian subcontinent, some strains may be multi-resistant, necessitating broad-spectrum intravenous antibiotic treatment. In severe typhoid fever with reduced consciousness (delirium) or coma, treatment with corticosteroids may need to be added.

Prevention

"Cook it, boil it, peel it or forget it" – this simple slogan would be sufficient to prevent typhoid fever nearly entirely. However, only few travelers fully adhere to this advice. Nevertheless, the value of food and water hygiene cannot be stressed enough: avoid buying water bottles without proper sealing, avoid drinking tap water from unknown sources, avoid eating cooled / frozen foods (i.e. ice cubes in water or ice cream) and avoid eating raw fruits and vegetables that you yourself have not peeled and washed with clean drinking water.

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Two types of vaccines are available:

a) Oral (live) vaccine consisting of three capsules to be taken on alternate days on empty stomach. These capsules require refrigeration before use. Protection from this vaccine is approximately 70% and starts 10 days after the third dose. After 1 to 3 years, the vaccine needs to be taken again before a new travel into at-risk areas. This vaccine cannot be given to patients with a severe chronic gastrointestinal disease (such as Crohn's disease or ulcerative colitis) or with severe immunosuppression.
b) The single-dose vaccine is an inactivated vaccine and is injected intramuscularly. Protection also reaches around 70% and starts 14 days after the injection. This vaccine can be given to patients who should not take the oral vaccine. However, it is not registered in Switzerland, but most doctors with specialization in tropical and travel medicine and all travel health centres have the vaccine on stock. Duration of protection is around 3 years.

Of note

- Vaccination against typhoid fever is advised for long-term travelers and for travelers visiting areas where the risk of transmission is particularly high and/or the disease more difficult to treat due to severe antibiotic resistance.

Further Information

Bundesamt für Gesundheit:
https://www.bag.admin.ch/bag/de/home/krankheiten/krankheiten-im-ueberblick/typhus-abdominalis-paratyphus.html