

## **Typhoid and Paratyphoid Fever**

Typhoid and paratyphoid fevers are infectious intestinal diseases caused by bacteria. Due to good sanitary and hygienic conditions, hygienic disposal of sewage and waste, and above all due to the supply of safe drinking water, these diseases are very rare in Slovenia. Reported cases in Slovenia are imported from other countries where infection is common, such as Africa, Asia, China, Central and South America.

### **Cause**

Typhoid fever is caused by the bacteria *Salmonella Typhi*, and paratyphoid fever is caused by the bacteria *Salmonella Paratyphi*.

### **Incubation period**

The time from infection to the first signs of illness ranges from 7 to 21 days, with an average of 14 days.

### **Transmission**

The source of typhoid and paratyphoid pathogens is humans. Patients or infected individuals excrete the pathogens into the environment through faeces and urine, which is why the disease can spread to other people:

- By drinking contaminated water;
- By eating contaminated food;
- Through contaminated hands.

### **Susceptibility to infection**

Anyone is susceptible to infection. The infection is particularly dangerous for young children, the elderly, and people with weakened immune systems.

### **Symptoms**

The symptoms of typhoid and paratyphoid fevers are similar, except that paratyphoid fever has a more rapid and violent onset, but the disease is milder and shorter in duration. The time from infection to the first signs of illness lasts from 7 to 21 days, but can be as long as 60 days. This time depends in the number of microbes ingested. The infection can proceed without health problems (carriers), atypically for typhoid fever, or very violently. The typical course of typhoid fever is as follows: the disease begins slowly, with headache, fatigue, muscle pain, and fever, which gradually increases. The patient experiences constipation and a dry, irritating cough. In the second week of the disease, the symptoms intensify, nausea may occur, the fever remains high, the skin is dry, and 20% to 50% of patients develop a mild rash, most often on the front of the chest and abdomen, which fades within a few hours or days. In the third week, sensory perception is also affected, and the patient becomes apathetic, drowsy, or restless and delirious. Diarrhoea occurs. The abdomen is tense, the spleen is enlarged, and sometimes the liver and lymph nodes are also enlarged. In the fourth week, the fever slowly begins to drop and the patient's condition improves very slowly. Antibiotic treatment shortens the duration of the illness. Various complications are possible during the course of the disease (meningitis, inflammation of the heart muscle, liver failure, high temperature, bone marrow suppression, etc.). In 8% to 12% of patients, the disease recurs; 1% to 3% of patients remain chronic carriers. The mortality rate is 1% to 3%.

## **Prevention**

Infection can be prevented by following basic hygiene principles. In addition to general recommendations for protection against infectious intestinal diseases, in places with poor hygiene condition, do not eat food prepared on the street and follow the advice: "COOK IT, PEEL IT, OR DON'T EAT IT!". Vaccination against typhoid fever is recommended for particularly vulnerable groups (relatives of carriers, municipal workers, travellers to countries where infection is common).