Fiji national typhoid fever treatment guideline – short version

Typhoid fever is common in Fiji. It is difficult to recognize, but when treatment is delayed, there is a high risk of death. It is caused by the bacterium *Salmonella* Typhi, which is only found in humans.
In Fiji, typhoid fever is most common in children. Young children also are the most at risk of severe illness and death.

Route of infection and prevention

People get infected by ingestion of food or water contaminated by stool or urine of patients and carriers, or by direct contact with patients and carriers. Hand washing is the most effective preventive measure. People should always wash their hands with soap after each visit to the toilet and before touching food or eating. People should have access to proper sanitation. Water from rivers or creeks should always be treated before drinking:

1. Bring to a rolling boil (no need to boil longer), *or*
2. Filter through a cloth and treat with chlorine (2 drops of household bleach per litre; let stand for 30 min).

After boiling or chlorinating, store it in a container where the water cannot come in contact with hands.
Uncooked foods (especially shellfish) are a risk, as well as foods handled by carriers who don't wash their hands with soap. Cooked food should be eaten while it's hot.
When preparing yaqona (grog), use safe water and wash hands with soap before handling it. The yaqona should be from an area where human waste is not used as manure.
Mothers should breastfeed their children throughout infancy.
All patients are infectious until recovery, but about 10% of untreated patients remain infectious for 3 months; 2%–5% become permanent carriers.

Symptoms

Typhoid fever is difficult to diagnose. Severe typhoid usually presents with high fever for several days, severe headache, weakness, and loss of appetite. Patients may have constipation or diarrhoea. In small children, diarrhoea is more common. Abdominal pain is also fairly common, and may be a warning sign for intestinal perforation – the most common cause of death.
The time between infection and start of illness usually is 1 to 2 weeks but can be as long as 2 months.
Laboratory tests for typhoid fever (blood- and stool culture) take time and have a high rate of false-negative results.
The Widal test is unreliable and should not be used anymore.

All suspected cases should get antibiotics and they must complete the entire course even if laboratory tests are negative.

Case definitions

Suspected typhoid fever:

1. Fever (temperature of 38 °C or higher) of unknown origin* lasting 3 days or longer; and at least one of the following: severe headache; abdominal pain; diarrhoea; constipation, *or*
2. Any fever of unknown origin in a person who lives in or has visited an area with an ongoing outbreak of typhoid fever, or who has been in contact with a known case of typhoid fever.

Confirmed typhoid fever:

Any suspected case with a blood- or stool culture positive for *S.* Typhi.

Asymptomatic carrier:

Any person who sheds *S.* Typhi in stool or urine without having symptoms.

All suspected and confirmed cases must be reported to the DMO or SDMO.

Treatment

10%–20% of untreated typhoid fever patients may die, but prompt antibiotic treatment can lower this to less than 1%. Ciprofloxacin ("cipro") is the most effective treatment. In March 2010, the Fiji Ministry of Health approved cipro as the treatment of choice for typhoid fever patients of all ages, except pregnant women. 7.5 mg/kg is given twice per day for 5 days or until the patient is free of symptoms for 24 hours, whichever is longer. See the table for dosing. Alternative drugs are chloramphenicol, amoxicillin, and cotrimoxazole; but these are less effective than cipro, and they must be given for at least 2 weeks. For pregnant women, amoxicillin or a 3rd generation cephalosporin are preferable.
To prevent antibiotic resistance, cipro should only be used for treatment of confirmed or suspected typhoid fever. Patients must be explained the importance of finishing the entire course of treatment, even when they already feel better.

Dosing of ciprofloxacin	Dose	Days
Children under 2 years	7.5 mg/kg twice a day	5
Children 2 to 7 years *	125 mg twice a day	5
Children 8 to 11 years *	250 mg twice a day	5
Adults and children 12 years and older *	500 mg twice a day	5

* Optimal dose 15 mg/kg; maximum dose 30 mg/kg per day. This estimated dosing by age can be used for simplicity or if the

Patients with severe disease should immediately be referred to the nearest hospital.