

GUIDELINES FOR PREVENTION AND TREATMENT OF TYPHOID FEVER IN IDP CAMPS IN VAVUNIYA

Introduction and mode of transmission

Typhoid fever is an acute illness associated with fever caused by the *Salmonella typhi* bacteria. It can also be caused by *Salmonella paratyphi*, a related bacterium that usually causes a less severe illness. Water and food are contaminated by faeces and urine of infected patients and carriers. The bacteria can survive for weeks in water or in dried sewage. The disease is contracted by ingestion of contaminated food or water.

About 10% of acute patients have recurrent symptoms (relapse) after feeling better for one to two weeks. About 3%-5% of patients become carriers after the acute illness. These chronic carriers can be a source of new outbreaks of typhoid fever for many years. Carriers can infect other people and need to be cured of the carrier state.

Incubation period

The incubation period is variable depending on the inoculum size and host defense. It is usually **one to two weeks**, and the duration of the illness is about **four to six weeks**.

Period of communicability

Communicability remains as long as bacilli appear in excreta and usually **from first week throughout convalescence**. If untreated, nearly 10% discharge bacilli nearly 3 months after the onset of symptoms and 2 -5% become permanent carriers.

Signs, symptoms and complications

Signs

The patient experiences poor appetite, headaches, abdominal pain, generalized aches and pains, fever, lethargy, and diarrhoea (especially in children) or constipation (especially in adults).

People with typhoid fever usually have a step like increase at the beginning and later sustained fever with high fever spikes as 103⁰ to 104⁰ F (39⁰ to 40⁰ C).

Symptoms

- Abdominal tenderness
- Mild hepato-splenomegaly
- Rose spots- small, pale red, blanching, slightly raised macules in chest and abdomen
- Relative bradycardia [early]

Complications

- Disseminated intravascular coagulation
 - Intestinal perforation
 - Intestinal bleeding
 - Necrotizing cholecystitis
- Rarely- hepatitis, meningitis, nephritis, myocarditis, bronchitis, pneumonia, arthritis, osteomyelitis, parotitis, & orchitis

If untreated- death can occur

Diagnosis

- Clinical diagnosis by the clinicians
- Widal test
 - to detect specific antibodies [agglutinating antibodies to O or H antigens] ,
 - high titre of antibodies to O antigen, >1:160 is consistent with acute typhoid.
 - Four-fold rise in antibody titre between paired serum samples is a strong evidence.
- It is advised to take blood samples for antibodies [Widal test] to confirm diagnosis in every 10th clinically suspected patient.
- Stool culture is usually positive in 2-3 weeks of symptoms to identify excretion of bacilli. Blood/ clot culture is usually positive at early stages [1-2 weeks] .

Treatment

- Drug of choice is **Chloramphenicol** to be used at camp setting. With appropriate dosage clinical response is apparent within 24 to 48 hours.

Weight bands	Dose every 8 hourly
3 - 8 kg	3 - 5ml
8 - 10kg	6 - 10 ml
10 - 15 kg	10 - 15 ml
15 - 20kg	15 - 20ml
	1 ½ capsules
	2 capsules

- Amoxicillin, Co-trimoxazole and Ciprofloxacin, should be considered in non respondent or resistant cases.
- Testing of antibiotic sensitivity is recommended whenever possible and in non respondent patients as some Salmonella species have been reported to be resistant to multiple antibiotics.
- Advises of medical expertise is recommended whenever necessary
- Supportive therapy will be given for symptomatic relief. Dehydration that results from a prolonged fever and diarrhea should be prevented.
- IV fluids are indicated in severe dehydration

[Prognosis – if untreated 10% die; if treated, only 0.1% chance to die]

Prevention of Typhoid Fever

Basic preventive measures

Cleanliness is a key to prevention.

- Educate the public regarding the importance of **hand washing** with soap and water at all possible occasions especially food handlers at the common community kitchen in IDP camps
- Water supply for preparation of food and for drinking should always be adequately treated with chlorine.
- Drinking water should be boiled at all possible occasions
- Train volunteers on health education activities to educate public in every IDP camp regarding personal hygienic measures and early identification of signs and symptoms of Typhoid Fever.
- Suspected cases should be referred early to the medical centre conducted within the camp setting for confirmation and adequate treatment.
- Isolation facilities should be arranged within the camp at one corner of the establishment, in an identified place with basic facilities to keep patients.
- Identify at least one toilet facility for an isolation area and keep it separate for usage of patients. Disposal of faeces of infected children should be done only to the identified toilet facility for patients.
- Strict hand washing with soap and water after defecation should be specified.
- Acutely ill patients should be referred for specialized medical care at the nearest hospital.
- Encourage medical officers and field staff to improve the surveillance, updates the knowledge of medical officers and PHI on the case definitions.
- Regular supervision of prevention activities.

Vaccination for prevention of Typhoid Fever

- Limited stocks of injectable **Vi polysaccharide typhoid vaccine [Typherix]** is available to be used for required high risk categories at IDP camps and requested to use only for essential **high risk categories**.
- **High risk categories** are defined as follows in the present situation

- Food handlers: People involved in cooking at the common community kitchens in IDP camp setting.
- Close contacts of patients who are living under the same tents
- Health care workers involved in regular/permanent IDP camp services

- **Therapeutic indication, dose, storage and mode of administration of vaccine**
 - Active immunization against Typhoid fever is indicated for adults and children above two years in the high risk category.
 - Vaccine [0.5 ml] is presented as a clear, colourless, liquid form in a prefilled glass syringe and need to be shaken before use.
 - A **single dose of 0.5ml intramuscularly** [containing 25µg of the Vi polysaccharide of *Salmonella typhi*] is recommended for both children and adults.
 - Vaccine should be stored at 2⁰ to 8⁰ C and should be protected from light.

- **Caution for vaccination**

- Bleeding disorders and Thrombocytopenia.
- Acute febrile illness [should be postponed]

- **Contra indication**

Known hypersensitivity to any component of the vaccine is a contra indication for use.

Possibility of co administration is tested with inactivated hepatitis A vaccine [Havix 1440 Adult] and administration to different sites is identified to develop adequate immunogenicity. Simultaneous administration of other vaccines has not specifically been tested and do not anticipate any adverse outcome.

Typhoid vaccine should not be mixed with other vaccines in the same syringe under any circumstances.

However in immunodeficiency and in medication for immunosuppressant, an expected response may not be achieved. Adequate data are not available for use during pregnancy and lactation.

- **Adverse Events Following Immunization [AEFI]**

- Mild local reactions- pain, swelling and redness
- Transient systemic reactions-fever, headache, malaise, general aches, nausea and itching
- Very rarely- anaphylaxis, allergic reactions including anaphylactic reactions and urticaria

- Sero-conversion of >95% was observed in clinical trials after two weeks of vaccination

- Protective level immunity was observed to remain for three years after administration of a single dose.

- Pharmaceutical excipients included in the vaccine are sodium chloride, dibasic sodium phosphate, monobasic sodium phosphate, phenol and water for injections.

- The expiry date of the vaccine is indicated on the label and packaging.