

Difference Between Malaria and Typhoid

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Key Difference - Malaria vs Typhoid

Malaria and typhoid used to be two of the commonest [infectious diseases](#) seen in the tropical world. Malaria is an infectious disease caused by [protozoa](#) that are transmitted by the anopheline mosquitoes. On the other hand, enteric fever is an acute systemic illness characterized by fever, [headache](#), and abdominal pain and typhoid and paratyphoid are the two variants of enteric fever caused by *Salmonella typhi* and *paratyphi*. **Although malaria is caused by a protozoan, enteric fever (Typhoid or Paratyphoid fever) is caused by a bacterium.** This is the **key difference** between the two diseases.

What is Malaria?

Malaria is an infectious disease caused by protozoa that are transmitted by the anopheline mosquitoes. There are four main types protozoa that can cause human malaria;

- *Plasmodium vivax*
- *Plasmodium falciparum*
- *Plasmodium malariae*
- *Plasmodium ovale*

There is a high rate of incidence and prevalence of malaria in the tropical countries because of the climate and monsoon rains that favour the breeding of vector mosquitoes as well as the survival of the disease-causing protozoan.

Clinical Features

There is an incubation period of 10-21days. Usually, there is a persistent fever initially. Later the typical tertian or quaternary fever appears. Along with fever, the patient can have malaise, nausea, vomiting, and diarrhea. Clinical picture can vary according to the type of protozoan that causes the disease.

Plasmodium vivax and Plasmodium ovale

There is usually a mild infection with progressively worsening [anemia](#). Tertian fever is the hallmark feature of the disease caused by these protozoa. Hepatosplenomegaly can also be present. Recurrence can occur due to the reactivation of hypnozoites that remain dormant.

Plasmodium falciparum

This is the most severe form of malaria. In most of the occasions, the disease is self – limiting but can give rise to fatal complications in a minority of cases. The condition of the patient can deteriorate rapidly, and death can occur in a matter of few hours. High parasitemia is a reliable indicator of disease severity. Cerebral malaria is the most feared complication of falciparum malaria. Altered consciousness, confusion, and convulsions are the suggestive signs of cerebral malaria.

Features of severe Falciparum Malaria

- CNS – prostration, cerebral malaria
- Renal – uremia, oliguria, hemoglobinuria
- Blood – severe anaemia, disseminated intravascular coagulation, bleeding
- Respiratory – [tachypnea](#), acute respiratory distress syndrome
- Metabolic – [hypoglycemia](#), metabolic acidosis
- Gastrointestinal – [diarrhea](#), [jaundice](#), splenic rupture

Diagnosis

Identification of parasites in thick or thin blood films is the diagnostic test. In endemic areas, malaria should be suspected whenever a patient presents with a febrile illness.

Management

Uncomplicated Malaria

Chloroquine is the drug of choice. Primaquine is started once the parasitemia has been successfully eliminated in order to eradicate the hypnozoites. The drug course should be continued for 2-3 weeks.

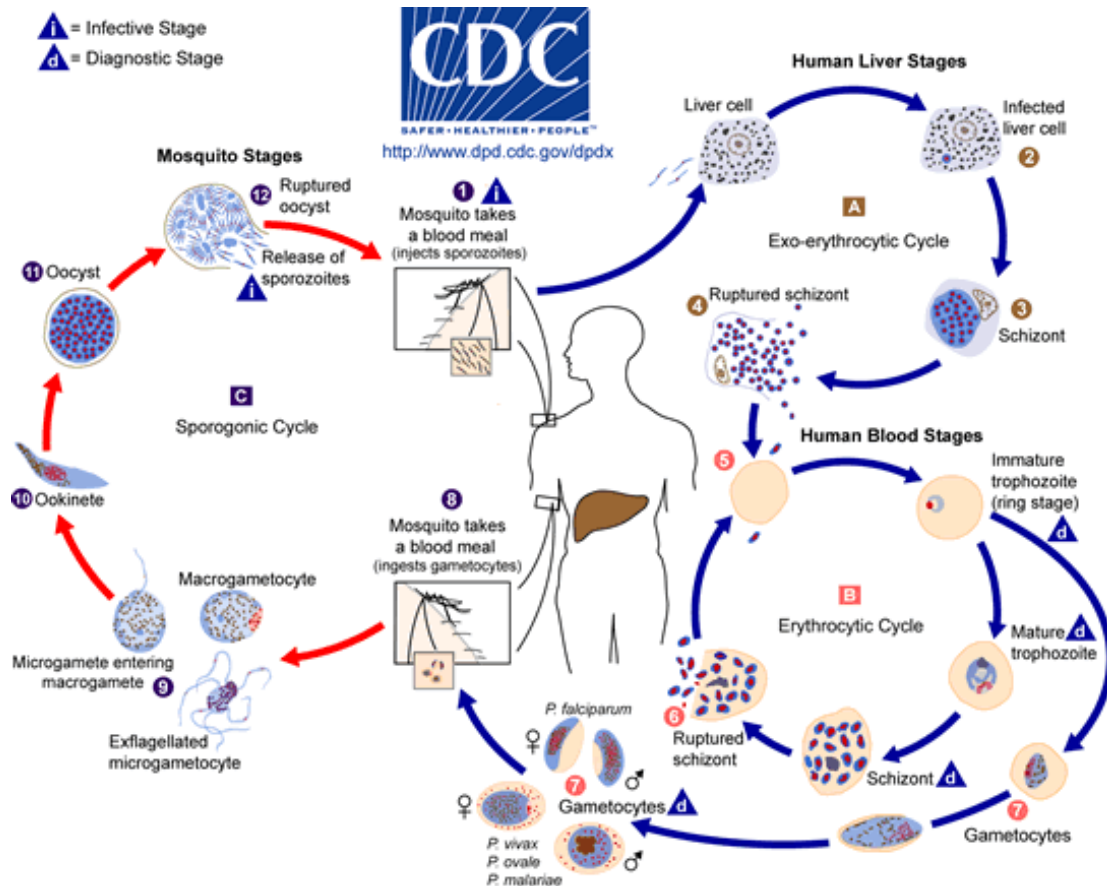


Figure 01: Life cycle of Malaria-causing Protozoan

Complicated Malaria

The use of intravenous artesunate is more effective during the treatment. Intensive care may be needed. Transfusion is advocated in severe anemia.

What is Typhoid?

Enteric fever is an acute systemic illness characterized by fever, headache, and abdominal pain. Typhoid and paratyphoid are the two variants of enteric fever caused by *Salmonella typhi* and *paratyphi* respectively. The infectious agent is transmitted by the consumption of contaminated water and food.

Clinical Features

Clinical features appear after an incubation period of 10-14 days.

- Intermittent fever
- Headache
- Abdominal pain

- Hepatosplenomegaly
- [Lymphadenopathy](#)
- Maculopapular rash
- If not treated, the patient can get complications such as intestinal perforations, lobar pneumonia, [meningitis](#) etc.

Diagnosis

Definitive diagnosis is through the culture of organisms from blood samples obtained from the patient. Leucopenia is common but nonspecific.



Figure 02: Salmonella typhi

Management

Nowadays quinolones are the drug of choice in the management of enteric fever. Earlier cotrimoxazole and amoxicillin were also used, but their importance has gone down due to the emerging resistance against them.

What is the Similarity Between Malaria and Typhoid?

- Both malaria and typhoid are infectious diseases.

What is the Difference Between Malaria and Typhoid?

Malaria vs Typhoid	
Malaria is an infectious disease caused by protozoa that are transmitted by the anopheline mosquitos.	Enteric fever (Typhoid) is an acute systemic illness characterized by fever, headache, and abdominal pain.
Transmission	
Protozoan is transmitted by anopheline mosquito	Typhoid is transmitted by the consumption of contaminated food and water.
Infectious Agent	
The infectious agent is a protozoan.	The infectious agent is a bacterium
Clinical Features	
<p>There is an incubation period of 10-21 days.</p> <p>Usually, there is a persistent fever initially. Later the typical tertian or quaternary fever appears. Along with fever, the patient can have malaise, nausea, vomiting, and diarrhoea. Clinical picture can vary according to the type of protozoan that causes the disease.</p> <p>In vivax and ovale malaria,</p> <p>There is a tertian fever with Hepatosplenomegaly.</p>	<p>Clinical features appear after an incubation period of 10-14 days.</p> <ul style="list-style-type: none"> • Intermittent fever • A headache • Abdominal pain • Hepatosplenomegaly • Lymphadenopathy • Maculopapular rash • If not treated, the patient can get complications such as intestinal perforations, lobar pneumonia, meningitis etc.

Diagnosis	
Identification of parasites in thick or thin blood films is the diagnostic test. In endemic areas, malaria should be suspected whenever a patient presents with a febrile illness.	Definitive diagnosis is through the culture of organisms from blood samples obtained from the patient. Leucopenia is common but nonspecific.
Treatment	
<p>Treatment of uncomplicated malaria</p> <p>Chloroquine is the drug of choice. Primaquine is started once the parasitemia has been successfully eliminated in order to eradicate the hypnozoites. The drug course should be continued for 2-3 weeks.</p> <p>Treatment of complicated malaria</p> <p>The use of intravenous artesunate is more effective. Intensive care may be needed. Transfusion is advocated in severe anaemia.</p>	<p>Nowadays quinolones are the drug of choice in the management of enteric fever. Earlier cotrimoxazole and amoxicillin were also used, but their importance has gone down due to the emerging resistance against them.</p>

Summary - Malaria vs Typhoid

Malaria is an infectious disease caused by protozoa that are transmitted by the anopheline mosquitos whereas enteric fever is an acute systemic illness characterized by fever, headache, and abdominal pain. Typhoid and paratyphoid are the two variants of enteric fever caused by *Salmonella typhi* and *paratyphi*. The difference between the two illnesses is, a group of protozoa causes malaria, but it is a group of bacteria that causes typhoid fever.

Reference:

1.Kumar, Parveen J., and Michael L. Clark. Kumar & Clark clinical medicine. Edinburgh: W.B. Saunders, 2009.

Image Courtesy:

- 1.'Malaria lifecycle-CDC' By [Centers for Disease Control and Prevention \(CDC\)](#) (Public Domain) via [Commons Wikimedia](#)
- 2.'Salmonella typhosus, cause of typhoid fever' by Kat Masback [\(CC BY-SA 2.0\)](#) via [Flickr](#)

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