

Q:- Define Malaria? write down its casual agents, prevention measures and ^{Symptoms} _{treatment}.

Malaria :-

"Malaria is a life-threatening mosquito-borne infectious disease caused by Parasites of the Plasmodium genus."

- It is transmitted to human through the bites of infected female Anopheles mosquitoes. There are several species of Plasmodium that can infect humans, with P. falciparum being the most deadly.

Symptoms :-

The symptoms of malaria typically include

- (1) Fever :- Often recurring in cycles
- (2) Chills and Sweats :- Rapid changes in body temperature.
- (3) Headache :- Severe headaches are common
- (4) Fatigue :- A feeling of extreme tiredness
- (5) Muscle and joint pain :- Aches and pain in the muscle and joints.
- (6) Nausea and vomiting :- Especially in the early stage.
- (7) Anemia :- Due to the destruction of red blood cells

"In severe cases, malaria can lead to complications such as organ failure and death."

According to World Health Organisation
WHO:-

There were an estimated 247 million cases of malaria in 2021, and estimated numbers of malaria death stood at 69,000.

"The WHO African Region carries a disproportionately high share of global malaria burden."

In 2021, they accounted for nearly 80% of all malaria deaths in the WHO African Region.

Causal Agents:

Malaria is caused by parasites of the Plasmodium genus. The five species that infect human are as

- (1) *P. falciparum*
- (2) *P. vivax*
- (3) *P. ovale*
- (4) *P. malariae*
- (5) *P. knowlesi*

Among these *P. falciparum*, is the most lethal.

Prevention Measures:

- (1) Mosquito Control:- Use insecticides-treated bed nets, wear long-sleeved clothing and use insect repellent to reduce mosquito bites.

(2) Chemoprophylaxis: Taking antimalarial drugs before, during and after travel to malarial endemic areas can prevent infection. The choice of medication depends on the specific region and the type of malaria parasite present.

According to Centers for Disease Control and Prevention: (CDC)

People often malaria experiences (fever, chills, and flu like illness) - Left untreated, malaria may develop severe complication and die.

In 2020 an estimated 241 million cases of malaria occurred world-wide and 627,000 people died. About 2000 cases of malaria are diagnosed in the US each year.

In 2023, Joining Forces in the Global Fight Against Malaria?

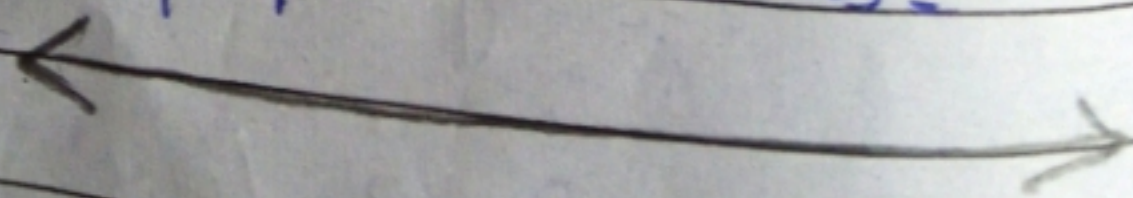
African Command (AFRICOM) "Africa Malaria Task Force Entomology Symposium"

The event brought together more than 50 military and health sector representatives from the US and 16 African nations.

"An additional 126 million people could be at risk of malaria"

Treatment of Malaria:

Effective treatment of malaria involves the use of antimalarial medications. The choice of medication depends upon factors such as species of Plasmodium causing the infection. Commonly used drugs include Chloroquine, artemisinin-based combination therapies (ACTs).

- As Malaria is a complex disease with varying factors, individuals travelling to malaria-endemic areas should consult a healthcare professional or travel medicine specialist for personalised advice on prevention and treatment based on their specific circumstances.
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Q:- Define Typhoid? write down its symptoms, casual agents, preventive measures and treatment.

Typhoid:

Typhoid fever is a systemic bacterial infection caused by *Salmonella enterica* serotype Typhi. It is a significant public health concern, particularly in areas with poor sanitation and inadequate access to clean water.

Typhoid fever is transmitted through the ingestion of contaminated food or water and is characterized by prolonged fever and other systemic symptoms.

Symptoms:

- (1) Sustained High Fever:-
• Often lasting for several days or week.
- (2) Headache:- Intense and persistent
- (3) Abdominal Pain:- Discomfort and tenderness in the abdominal area.
- (4) Constipated or Diarrhea:- Gastrointestinal symptoms can vary.
- (5) Rose spots:- Small, red spots on the abdomen and chest.
- (6) Weakness and Fatigue:- A general feeling of lethargy.
- (7) Enlarged Spleen and Liver:-

In some cases, this disease occur.

In October 2017, the Strategic Advisory Group of Experts on Immunization (SAGE) on Vaccine Use, issued a recommendation for the typhoid conjugate vaccine to be added to routine childhood immunization programmes in typhoid endemic countries. SAGE also called for the introduction of typhoid conjugate vaccine to be prioritised for countries with the highest burden of typhoid disease or high level of antibiotic resistance to *Salmonella Typhi*.

(World Health Organization)

Causal Agents :-

Typhoid fever is caused by the bacterium "*Salmonella enterica*" Serotype Typhi. It is primarily transmitted through the ingestion of contaminated food and water.

"The bacteria can survive for weeks in water and for months in human waste, making it a significant risk in areas with poor sanitation."

Preventive Measures:

(1) Vaccinations

Typhoid vaccines are available and are recommended for travels to areas where typhoid is endemic and for individuals at high risk of exposure.

(2) Hygiene and Sanitation:

Practicing good hygiene, such as handwashing and ensuring access to clean water can help prevent the spread of the bacteria.

(3) Safe food Handling:

Properly cooking and avoiding the consumption of raw or undercooked food can reduce the risk of infection.

Typhoid fever and paratyphoid fever cause similar symptoms. People with these diseases usually have a fever that can be as high as 103 to 104°F (39 to 40°C). They also may have weakness, stomach pain, headache, diarrhea or constipation.

Center for Disease Control (CDC):

Some people have a rash of flat, rose-colored spots, internal bleeding and death can occur but are rare.

Treatment of Malaria / Typhoid

These are following treatments of Typhoid:

(1) Antibiotics :-

Antibiotic Therapy is the primary treatment for typhoid fever. Commonly used antibiotics include (Ciprofloxacin and Ceftriaxone) Drug resistance in a country and the choice of antibiotics may be guided by local resistance patterns.

(2) Supportive Care :-

In severe cases, hospitalization may be required and supportive care, including (rehydration and management of complications) is essential.

