

MALARIA



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By

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INTRODUCTION:

Malaria is a potentially life-threatening disease caused by a parasite called Plasmodium, which is transmitted to humans through the bites of infected mosquitoes. There are several species of Plasmodium that can cause malaria and can be passed from person to person through blood transfusions, organ transplants, or from a mother to her unborn child.

There are several different species of Plasmodium parasites that can cause malaria in humans. The most common species that cause human malaria are:

1. **Plasmodium falciparum:** This is the most severe form of malaria and is responsible for most malaria-related deaths. It is prevalent in sub-Saharan Africa, but can also be found in other parts of the world.
2. **Plasmodium vivax:** This species is found mainly in Asia and South America, and can cause recurrent episodes of malaria.
3. **Plasmodium ovale:** This species is found mainly in West Africa, and can cause mild to severe malaria.
4. **Plasmodium malariae:** This species is found worldwide and can cause chronic, low-grade infections.
5. **Plasmodium knowlesi:** This species is found in Southeast Asia and can cause severe and sometimes fatal malaria.

CAUSES/ETIOLOGY:

- Female Anopheles mosquitoes bite
- Any Species of Plasmodium (most common Plasmodium falciparum)
- Blood transfusions
- Organ transplants, or from a mother to her unborn child.

PATHOGENESIS:

Malaria is a disease caused by the Plasmodium parasite, and it is transmitted to humans through the bites of infected mosquitoes. The life cycle of malaria involves both the human host and the mosquito vector.

1. Mosquito infection: The malaria parasite starts its life cycle in the gut of an infected female Anopheles mosquito. When the mosquito bites a human, the parasites are injected into the person's bloodstream.
2. Liver infection: The parasites travel to the liver, where they infect liver cells and multiply. During this stage, people may not experience any symptoms.
3. Blood infection: After several days, the parasites leave the liver and enter the bloodstream, where they infect red blood cells. The parasites multiply within the blood cells, causing the cells to burst, which releases more parasites into the bloodstream. This stage is associated with symptoms such as fever, chills, and flu-like symptoms.
4. Mosquito transmission: When a mosquito bites an infected person, it takes in the malaria parasites with the blood. The parasites then develop and multiply inside the mosquito, eventually making their way to the mosquito's salivary glands.
5. Human infection: When the infected mosquito bites another person, it injects the parasites into the person's bloodstream, and the cycle begins again.

CLINICAL MANIFESTATION:

- **Fever and chills:** The most common symptom of malaria is a high fever that typically comes and goes in cycles.
- **Headache:** Many people with malaria also experience severe headaches.
- **Muscle aches and joint pain:** Malaria can cause severe pain in the muscles and joints.
- **Nausea and vomiting:** Some people with malaria experience nausea and vomiting, especially during the early stages of the infection.
- **Fatigue:** Malaria can cause extreme fatigue and weakness, making it difficult to carry out daily activities.
- **Sweating:** Profuse sweating is a common symptom of malaria.
- **Anemia:** Malaria can cause a decrease in the number of red blood cells, leading to anemia.

DIAGNOSIS/CLINICAL EVALUATION:

- **Blood test:** The most reliable way to diagnose malaria is by taking a blood sample and examining it under a microscope to look for the malaria parasite. This is called a blood smear test. There are also rapid diagnostic tests (RDTs) available that can detect antigens produced by the malaria parasite in the blood.
- **Travel history:** If a person has traveled to a region where malaria is common, and they have symptoms consistent with the disease, it increases the likelihood that they have malaria.

PHARMACOLOGICAL MANAGEMENT:

- Chloroquine: This is an older, widely used drug that is still effective in some regions where malaria is common. However, there is growing resistance to chloroquine in some areas.
- Artemisinin-based combination therapy (ACT): This is a group of drugs that includes artemether-lumefantrine, artesunate-amodiaquine, and dihydroartemisinin-piperaquine. These drugs are highly effective against malaria and are recommended as first-line treatment in many areas.
- Quinine: This is an older drug that is still used for the treatment of severe malaria, particularly in areas where other drugs are not available or effective.
- Mefloquine: This is a drug that is used for both treatment and prevention of malaria, particularly in areas where chloroquine resistance is high.
- Doxycycline: This is an antibiotic that can be used for the prevention and treatment of malaria, particularly in areas where there is a risk of contracting both malaria and other infections.

NON PHARMACOLOGICAL MANAGEMENT OF MALARIA:

- Avoid mosquito bites: Use mosquito repellents, wear long-sleeved clothing, and use bed nets to avoid mosquito bites.
- Take antimalarial medications: Depending on the region where you are traveling, taking antimalarial medications can be an effective preventive measure.

- **Keep your environment clean:** Mosquitoes breed in stagnant water, so keeping your environment clean and free of stagnant water can reduce the number of mosquitoes.
- **Wear light-colored clothing:** Mosquitoes are attracted to dark colors, so wearing light-colored clothing can make you less attractive to them.
- **Seek medical attention if you have a fever:** If you develop a fever while traveling in a malaria-endemic area or within a few weeks of returning, seek medical attention immediately.