**MALARIA**

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Group 5 6th faculty 6th course.

**Malaria** is a mosquito-borne infectious disease affecting humans and other animals caused by parasitic protozoans belonging to the Plasmodium type.

 The WHO estimates that in 2015 there were 214 million new cases of malaria resulting in 438,000 deaths. The majority of cases (65%) occur in children under 15 years old. About 125 million pregnant women are at risk of infection each year; in Sub-Saharan Africa, maternal malaria is associated with up to 200,000 estimated infant deaths yearly.

Where malaria is found depends mainly on climatic factors such as temperature, humidity, and rainfall. Malaria is transmitted in tropical and subtropical areas, where Anopheles mosquitoes can survive and multiply.

Generally, in warmer regions closer to the equator transmission will be more intense

Malaria is transmitted year-round. In cooler regions, transmission will be less intense and more seasonal. There, P. vivax might be more prevalent because it is more tolerant of lower ambient temperatures.

**Plasmodium species;**

• P.Vivax , P.Ovale Can cause relapses for many years after infection. 48 hours

• P.Malaria 72 hours

• P.falciparum most dangerous type causes complicatios ie celebral malaria and black water fever. 48hours

**Life Cycle**

**1** )Female anopheles mosquitoes gets infected after taking a meal containing gametes, development of infective sporozites**. 2)** The sporozoites are are rapidly taken up in the liver. The infected hepatocytes rupture , releasing merozoites in to the blood and they are rapidly taken up by erythrocytes 4) Inside the erythrocytes the parasites multiply, changing from merozoites, to trophozoites,to schizont and finally appeare new merozoites.The erythrocytes rupture and releasing merozoites to infect other cells.

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**Clinical manifestation**

Uncomplicated malaria:

• a cold stage (sensation of cold, shivering)

• a hot stage (fever, headaches, vomiting; seizures in young children)

• and finally a sweating stage (sweats, return to normal temperature, tiredness

Severe/complicated Malaria

• Cerebral malaria

• Blackwater fever

• Severe anemia

• Hemoglobinuria

• Acute respiratory distress syndrome (ARDS)

• Abnormalities in blood coagulation

• Low blood pressure caused by cardiovascular collapse

• Acute kidney failure

• Hyperparasitemia, where more than 5% of the red blood cells are infected by malaria parasites

• Metabolic acidosis (

• Hypoglycemia

**Diagnosis**

Physical examination: icteric skin amd mucous menbranes. On palpation ,painful abdomen and heaptosplenomegaly.

Lab: CBC<Hb, <RBcs, <Thrombocytes, reticulocytosis, > glucose leels

Biochemical: > unconjugated bilirubin, > AST,ALT,

Microscopic examination; Ring form and gamates of P.flaciparum.

**Prevention**

• There is no vaccine against malaria

• Education

• Mosquito repellent i.e. picaridin, sleeping under the nets and indoor &outdoor spraying with insecticides .

• Efforts to decrease mosquito larva by decreasing the availability of open water in which they develop.

**Treatment**

Uncomplicated malaria

P.Vivax, P.Ovale,P.Malariae = Chloroquine + Primaquine

P.Falciparum (adult) Artemisin based combination thereap or (Quinine+ Docycycline) + pramaquine

P.Falciparum (pregnant) 1st trimester Quinine +Doxcycline, 2nd trimester ACT.

P.Falciparum(infants) ACT + Primaquine

Drug treatment of severe falciparum malaria in adults and children

I.V/I.M Artesunate 2.4mg/kg , I.V Quinine 20mg/kg, OR i.m Artemether 3.2mg/kg

Malaria prophylaxix for adult travellers:

No Chloroquine resistance –chloroquine 300mg weekly.

Limited Chloroquine resistane –Chloroquine 300mg + proguanil

Significant Chloroquine resistance, Melfoquine