Lecture 11

Malaria

- Additional Notes
- Important
- Explanation
- Examples

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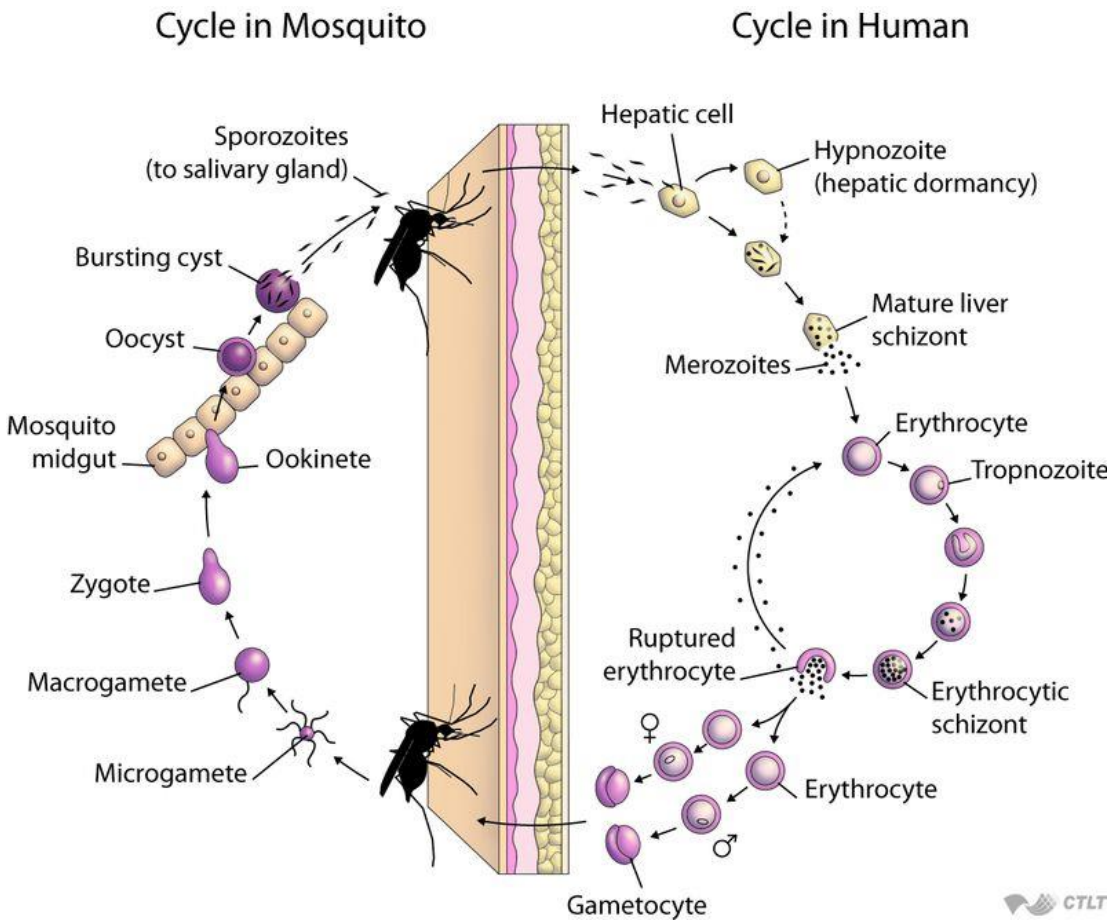
Life cycle

- Mosquito takes a blood and injects **sporozoits**
- Travel into hepatocytes & proliferate to form **schizont**. (inside the hepatocyte)
- Rapture of the schizont and releasing of the **merozoites**
- Merozoits penetrate RBCs & become **trophozoites**
- Proliferate inside the RBC to form **schizont.** (inside the RBC)
- Rupturing of scizont leads to onset of the symptoms (parasitemia)



Nicely illustrated in these videos: http://ksumsc.com/download_center/2nd/02%20GIT%20Block/Males/Microbiology/malaria%20videos/

- Five species of malaria infects humans
  - ✓ Plasmodium falciparum (quotidian[1], tertian[2] or irregular fever)
  - ✓ Plasmodium vivax (tertian fever)
  - ✓ Plasmodium ovale (tertian fever)
  - ✓ Plasmodium malariae (quartan[3] fever)
  - ✓ Plasmodium knowlesi

1.Quitidian: fever recurring every day
2.Tertian: occurring every 2 days (48 hrs)
3.Quartan: occurring every 4 days

- **Severe malaria:** symptomatic malaria (usually in a patients with P.falciparum) in his blood (parasitaemia). And usually he has one or more of the following complications:
  - ✓ Cerebral malaria (Opisthotonus, unarousable coma)
  - ✓ Generalized convulsion
  - ✓ Severe normocytic anemia
  - ✓ Hypoglycemia
  - ✓ Metabolic acidosis with respiratory distress
  - ✓ Fluid and electrolytes disturbance
  - ✓ Acute pulmonary edema and adult respiratory distress syndrome
  - ✓ Jaundice
  - ✓ Haemogliniuria (blackwater fever) → Acute renal failure
  - ✓ Circulatory collapse → Shock
  - ✓ Hyperparasitaemia (immunocompromised)
- **Non-severe (uncomplicated) malaria:** symptomatic infection with malaria parasitaemia without sign of severity and evidence of vital organ dysfunction.

Laboratory

- Microscopy:
  - ✓The gold standard for diagnosis of malaria.
  - ✓Used for identify parasite density, species diagnosis & monitoring response to treatment.
- Rapid diagnostic tests detect malaria antigens