WHAT IS FILARIAISIS

- A disease that affects humans and animals and is caused by nematode parasites of the order Filariidae.
- Of the 100 described filarial parasites only 8 species cause infection in humans.
- The 8 filarial parasites are classified by the location they inhabit in host
CLASSIFICATION OF FILARIAL PARASITES

1st group- Cutaneous (of the skin)
- Loa loa
- Onchocerca volvulus
- Mansonella streptocerca

2nd group- Lymphatic (Lymphatic system)
- Wuchereria bancrofti
- Brugia malayi
- Brugia timori

3rd group- Body Cavity
- Mansonella perstans
- Mansonella Ozzardi

LYMPHATIC FILARIASIS

- "A parasitic disease caused by threadlike worms living in the human lymphatic system."
- The "threadlike worm" that can cause lymphatic filariasis is a blood-dwelling filarial nematode, from the aschelminth phyla
- 3 known species:
  - Wuchereria bancrofti
  - Brugia malayi
  - Brugia timori

WHAT ARE THE DIFFERENCE?

- Differences between W. bancrofti, B. malayi and B. timori reside in epidemiology, vectors, reservoirs, symptoms, but mainly species morphology.
**Wuchereria bancrofti**
- Well-documented
- Most widespread cause of lymphatic filariasis
- Morphologically significantly different from the other species

**Brugia malayi**
- Vector and reservoir
- Transmitted by Mansonia mosquitoes
- Animal reservoirs
- Morphology differences

**Brugia timori**
- Least common
- Least studied
- More similar to W. bancrofti than to B. malayi
- Vector Anopheles barbirostris
- No known animal reservoirs
- Symptoms and morphology resemble B. malayi
- Larger than B. malayi
HISTORY OF LYMPHATIC FILARIASIS

- Timeline of discovery
  - 2000BC Pharaoh Mentuhotep II
  - 500 AD Nok civilization in West Africa
  - Greek and Roman civilization
  - 1588-1592 symptoms
  - 1849 symptoms
  - 1863 and 1866 microfilariae
  - 1876 adult worm
  - 1877 life cycle
  - 1900 transmission

TRANSMISSION

- A wide range of mosquitoes can transmit the parasite, depending on the geographic area.
- In Africa, the most common vector is *Anopheles*
- In the Americas, it is *Culex quinquefasciatus*, and *Aedes*
- *Mansonina* can transmit the infection in the Pacific and in Asia.

TRANSMISSION

Life Cycle of *Wuchereria bancrofti*
EPIDEMIOLOGY

- Endemic in approx. 80 countries
- 120 million infected
- 40 million seriously incapacitated or disfigured
- India, Indonesia, Nigeria, & Bangladesh =70%
- 1/3 of infected live in India
- 1/3 of infected live in Africa
- Remainder are in South Asia, the Pacific and South America

Most of the infections worldwide are caused by *Wuchereria bancrofti*. In Asia, the disease can also be caused by *Brugia malayi* and *Brugia timori*. 
**PROGRESSION OF LYMPHATIC FILARIASIS**

**3 STAGES OF PROGRESSION**
- Prepatent Period
- Incubation Period
- Chronic Stage of Lymphatic Filariasis

**THE DISEASE**
- Elephantiasis

The individuals above are all infected with *W. bancrofti.*

**DIAGNOSIS**
- ICT Test
- X-Ray Detection
- Blood Test
PREVENTION AND TREATMENT

- There is no known vaccine or cure for lymphatic filariasis.
- Diethylcarbamazine (DEC) is a popular microfilaricide, and has been used in Mass Drug Treatment programs.
- Symptoms are often treated with antihistamines, and antibiotics.

ERADICATION

- Lymphatic filariasis is one of seven diseases worldwide that the WHO has targeted for eradication.
- Global Alliance to Eliminate Lymphatic Filariasis.

REVIEW

- What is filariasis?
- How it’s transmitted?
- Where it’s found?
- The disease
- Treatment, Prevention, and Eradication
REFERENCES