Wuchereria bancrofti, Filariasis, It’s Symptoms, Treatment!!

WUCHERERIA

Wuchereria bancrofti is a filariod nematode, causing a very tragic, debilitating disease known as filariasis or elephantiasis.

This disease has been known from antiquity and was the first discovery of insect (culex mosquito) transmission of a human disease.

In general, infection with any of the filarial nematode may be called as filariasis. But the term filariasis refers to lymphatic filariasis caused by Wuchereria or Brugia species.

MORPHOLOGY

ADULT:

- The adult worms are whitish, translucent, threadlike worms with smooth cuticle and tapering ends.
- The head is slightly swollen and bears two circles of well defined papillae.
The female worm is larger than the male worm.
The adult worm live for many years, probably 10-15 years or more.

**JUVENILE:**

- Female wuchereria are oviparous.
- The juveniles or embryos are released in the elongated egg shell, which persists as a sheath.
- The embryos are referred to as microfilariae.
- Microfilariae are seen in blood smears and are diagnostic.
- They are 230-320 mm long.
- The cuticle of the microfilariae has well marked striations and the tail tapers gradually to a rounded tip.

**LIFE CYCLE OF WUCHERERIA**

- Wuchereria bancrofti mainly transmitted by culex and anopheles mosquito.
- Larval form of the parasite is taken up by a female mosquito when it takes a blood meal from a human infected with adult worms.
- The microfilariae develop inside the mosquito.
- When the mosquito takes another blood meal the infected filariform larvae enter the bite wound.
- Filariform larvae migrate to the lymphatics and lymph glands.
- Larvae develop into sexually mature adult worms over
3-12 months depending on the species of filarial worm.

**FILARIASIS OR ELEPHANTIASIS**

Wuchereria bancrofti and Brugia malayi are the filarial nematodes. Spread by several species in night feeding mosquitoes. It causes lymphatic filariasis or it is also known as elephantiasis.

**Definitive host:**

- Humans are the definitive host for the worms (*Wuchereria bancrofti*) that cause lymphatic filariasis.
- Brugia malayi has been found in macaques, leaf monkeys, cats and civet cats.

**Intermediate host:**

- Wuchereria bancrofti is transmitted by Culex, Aedes and Anopheles species.
- Brugia malayi is transmitted by Anopheles and Mansonia species.
FILARIASIS SYMPTOMS

- Asymptomatic: patients have hidden damage to the lymphatic system and kidney.
- Acute: attacks of ‘filarial fever’ (pain and inflammation of lymph nodes and ducts, often accompanied by fever, nausea and vomiting) increase with severity of chronic disease.
- Chronic: may cause elephantiasis and hydrocoele (swelling of the scrotum) in males or enlarged breast in female.

VECTOR CONTROL

- Covering water storage containers and improving waste water and solid waste treatment system can help by reducing the amount of standing water in which mosquitoes can lay eggs.
- Killing eggs (oviciding) and killing or disrupting larva (larvaciding) in bodies of stagnant water can further mosquito population.

FILARIASIS TREATMENT

1. Treatment of filariasis or elephantiasis involves two components:
   - Getting rid of the microfilariae in people’s blood.
   - Maintaining careful hygiene in infected person to reduce the incidence and severity of secondary (e.g.,
bacterial) infection.

2. The drug choice for the past 40 years has been diethylcarbamazine (DEC, Hetrazan) which eliminates microfilariae from the blood and careful administration usually kills the adult.

3. Albendazole kills adult worm

4. Lvermectin kills the microfilariae produced by adult worm.

5. Edematous limbs are sometimes successfully treated by applying pressure bandages which force the lymph out of the swollen area.

6. Surgical removal of elephantoid tissue is often possible.

This is the general notes on Wucherenia bancrofti, Filariasis and its Symptoms and Treatment.

Thank you.