OPEN ACCESS Freely available online

ISSN: 2329-891X
Journal of Tropical Diseases & Public Health

Perspective

Etiology and Life Cycle of *Wuchereria Bancrofti* Parasite

Zhao Lin*

Department of Veterinary Sciences, Central South University, Changsha, China

DESCRIPTION

Wuchereria Bancroft parasite has been difficult to study as it cannot be cultured or maintained in laboratory animals. Thus, only limited amount of parasite material have been available for study, and techniques for defining species and differentiating sub strains or subspecies have been slow to develop. Even the biochemical nature of different stages of each parasite is not well understood. Further for some of the less common filarial infections, it is not even certain where the adult parasite resides, and there is very little information on how the parasite migrates and mates during the long prepatent period of this infection. One of the most intriguing aspects of these filarial infections, especially those caused by lymph dwelling parasites, is the extremely broad spectrum of clinical presentation found among individuals in endemic regions. At one extreme there are many individuals with no clinical manifestation or indication of filarial infection at all, though one can demonstrate that these people are exposed to infective larvae to the same extent as those with filariasis. A second clinical presentation is also entirely asymptomatic but is characterized by the presence of microfilariae circulating in the peripheral blood. Most common of the symptomatic clinical syndromes is characterized by the recurrent episodes of "filarial fevers" seen in many infected individuals.

Man is the definitive host of *W.bancrofti* and Culex mosquito is the intermediate host and act as a vector. The adult parasites are usually found in the lymphatic system of man. Females are viviparous following copulation they produce microfilariae, which find their way into the blood stream. The life span of the microfilariae is not accurately known and may vary from 6 weeks to 30 months. The adult parasites live for about 10 years or longer. In the mosquito vector the life cycle begins with the ingestion of microfilariae by female mosquito along with the blood meal. In the mosquito which acts as vectors, the following stage of development takes place.

The first stage larva escapes first from the sheath in which it is enclosed within 1 to 2 hours after getting into the stomach of the mosquito. The second stage larva, after ex-sheathing, the larva penetrates through the stomach wall in 6 to 12 hours and migrates to the thoracic muscles where it grows and develops. It shortens and becomes quite thick and resembles as sausage. The second stage larva increases in length with the development of an alimentary canal and is relatively inactive. The third stage larva is thin, long and very active. It may be found in any part of the insect. When it migrates into the head and down the labium of the mouth parts of the mosquito, it is ready to infect the new host. Under optimum conditions of temperature and humidity, the duration of mosquito phase of the life cycle (extrinsic incubation period) lasts for about 10 to 14 days. The fourth stage larva the whole process of development from microfilaria to the infective stage takes around two weeks under favourable conditions in the mosquito. This duration is notably affected by temperature. The infective larvae then migrate to the proboscis of the mosquito where they await transmission to the definitive host. Inside the definitive host they migrate subcutaneously to the lymphatic system where they undergo 3rd moult to become the 4th stage larvae. 30 to 40 days after the entry of the 3rd stage larva, final moult occurs and the parasite becomes a juvenile adult. In man, the pre-patent period, i.e., the time taken from infection to the production of micro-filariae is about 11 months for *W. bancrofti* and about 3 months for *B.malayi*.

Correspondence to: Zhao Lin. Department of Veterinary Sciences, Central South University, Changsha, China, E-mail: lin123@gmail.com

Received: 01-Feb-2023, Manuscript no: JTD-23-19666, **Editorial assigned**: 06-Feb-2023, PreQC no: JTD-23-19666 (PQ), **Reviewed**: 21-Feb-2023, QC no: JTD-23-19666, **Revised**: 28-Feb-2023, Manuscript no: JTD-23-19666 (R), **Published:** 07-Mar-2023, DOI: 10.35241/2329-891X.23.11.367

Citation: Lin Z (2023) Etiology and Life Cycle of *Wuchereria bancrofti*. J Trop Dis. 11:367.

Copyright: © 2023 Lin Z. This is an open-access article distributed under the terms of the Creative Commons Attribution License, which permits unrestricted use, distribution, and reproduction in any medium, provided the original author and source are credited.