Introduction
Filariasis is known since antiquity. It was recognized in 600 BC by Sushruta. The presence of microfilariae (mf) was first demonstrated in hydrocele fluid by Demarque in 1863. In 1866 Wucherer found them in the chylous urine (Faust and Russell 1967) and subsequently, in 1872, Lewis detected them in the peripheral blood of man (Manson-Bahr 1959).

Several species of filarial parasites have been described since then. However only eight of them have become adapted for interhuman transmission. *Wuchereria bancrofti, Brugia malayi* and *Brugia timori* are the lymphatic dwelling filarial parasites, which cause elephantiasis in man and are transmitted by mosquitoes. *Onchocerca volvulus*, the subcutaneous dwelling parasite, which causes ocular pathology and blindness (River blindness), is transmitted by black flies. *Loa loa*, the West African eye worm causing Calabar swelling is transmitted by the large tabanid horse flies. Three relatively innocuous parasites, *Dipetalonema perstans, D.streptocerca* and *Mansonella ozzardi* are transmitted by midges.

Bancroftian filariasis caused by *Wuchereria bancrofti* is the predominant type accounting for 98% of cases and is distributed widely in India. Malayan filariasis caused by *Brugia malayi* is limited to a few pockets of Kerala, Assam and Orissa where more than 90 million people are at risk. Bancroftian filariasis is transmitted mainly by *Culex quinquefasciatus*, an ubiquitous mosquito breeding in polluted water. While Malayan filariasis is transmitted by mansoniod mosquitoes which breed in aquatic weeds (Pistia, Eicnornia and Salvia) (Das 1976).
Map showing prevalence of filariasis in India (Sharma et al. 1983)

- Wuchereria bancrofti
- Brugia malayi
- State boundary

- Pakistan
- China
- Bangladesh
- Lakshadweep
- Indian Ocean
- Bay of Bengal
- Andaman Nicobar
In this country, about 307 million people are exposed to the risk of infection. Around 22 million carry microfilariae as shown by 20 cmm of night blood. Sixteen million suffer from chronic manifestations such as hydrocoele, lymphoedema and elephantiasis.

The life cycle of filarial parasites involves hematophagous arthropods (Mosquitoes) as a vector host and man as the definitive host. *W. bancrofti* is transmitted by the vector host of species *Culex*. Man is the only known definitive host of *W. bancrofti*.

The infective mosquito transmits the third stage larvae of *W. bancrofti* to human during or after the blood meal. Very little is known about the course of the infective larvae in the human body. They may grow into mature adult worms as early as the fifth month after the infection. The adult worm may be alive in the lymphatics of the host for as long as 17 years (Manson-Bahr 1959).

**Clinical manifestation**

The presence of the adult worms in the lymphatics evokes tissue responses, which are clinically expressed as lymphangitis and lymphadenitis. Lymphangitis and lymphadenitis may be accompanied by fever and rigors (Schachest and Sahyoun 1967). There may be initial soft pitting edema of the limb which is usually reversible. It later progresses to the chronic form of filariasis which is associated with the form elephantiasis. Filarial infection is also responsible for many clinical signs and symptoms such as epididymo-orchitis, chyluria and hydrocoele etc. Although most of the lymphatic damage
in man is considered to be due to the adult worms (Nelson 1979), hypersensitivity to mf may lead to occult filariasis. Tropical pulmonary eosinophilia is an example of occult filariasis. It is characterized by high peripheral eosinophilia and antifilarial antibodies.

Thus filarial parasite can cause a wide variety of clinical manifestations in the host. While majority of the people living in filariasis endemic region may not develop infection at all, others develop infection and remain as carriers or develop a variety of clinical manifestations such as "early" lymphangitis and lymphadenitis.

The host response-parasite interactions are determined on one hand by the capacity of the host to develop a strong immune response and on the other by the capacity of the parasite to evade the host immune response. The balance of host parasite interactions and variations of these reactions may ultimately decide the outcome of infection.

**Immunodiagnosis**

Diagnosis of filarial infection remains a problem because of the peculiarities of the filarial infection which makes parasitological diagnosis difficult.

Parasitological diagnosis depends on the presence of microfilariae in thick blood smears. In certain cases, demonstration of developing microfilariae or adult parasites either in abnormal sites like eye or in the lymphatic system or other organs helps in specific identification of the species
involved. In low density microfilarial states, the modified nucleopore membrane technique (Dennis and Kean 1971) efficiently screens large volume of blood and biological fluids for the presence of microfilariae.

Serological tests have been used for a long time in the diagnosis of human filariasis. A number of good reviews on the immunodiagnosis of filariasis have appeared (Ambroise 1974, Kagan 1974). A number of serological tests like the indirect fluorescent antibody (IFA) (Chowdhury and Schiller 1962, Santos et al 1976, Singh et al 1979, Young 1973). Enzyme linked immunosorbent assay (ELISA) (Barlett et al 1975), Counter-immunoelectrophoresis (Desowitz and Una 1976) and the indirect haemagglutination tests (Singh et al 1980) have been used for this purpose. The interpretation of these tests is complicated by various factors such as antigenic cross reactions between other nematodes and between different species of filarial parasites, exposure and sensitization of human populations in endemic areas to filarial parasites of animal origin and complex immunological responses of the host to different stages of parasite and its secretory and excretory products.

In the backdrop of these informations and equally good prevalence rate of bancroftian filariasis in this country, there is a need for a detailed investigation on prevalence, development of host immune response and evaluation of different diagnostic methods using easily available antigens.