

Abstract

An indigenous case of cutaneous leishmaniasis was reported from Ambalantota, an area belonging to southern part of the country in 1992. However, it took several more years to report the next few cases. The numbers had increased since year 2000. The causative organism of the disease is *Leishmania donovani* MON 37, a visceralising parasite in some part of the world. Since a local transmission cycle has established in many parts of the country, identification of potential vectors and their distribution may be important.

Six species of sandflies belong to two genera of *Phlebotomus* and *Sergentomyia* were reported from Sri Lanka. Out of these, only *P. argentipes* was proven as a vector in the other parts of the world that was also involved with transmission of visceral leishmaniasis.

Two areas with known disease transmission were selected for the study and three methods were used to collect the adult sandflies (cattle baited traps, CDC miniature light traps and manual collection with aspirators). Few soil samples were analyzed for the presence of immature stages to establish the breeding places.

Identification of sandflies was done using morphological characters with the help of a standard key. A subset of samples was sent to CDC, USA for PCR studies.

Another PCR study was carried out at Walter Reed Army Institute of Research, USA for the presence of *L. donovani* in female sandflies.

Some of the wild caught blood fed female sandflies was subjected to gut dissection and Geimsa staining was carried out to see the presence of promastigotes within.

Two species found in selected areas in Sri Lanka (southern and northwestern areas) are *Phlebotomus argentipes* and *Sergentomyia zeylanica*. The dominant species in northwestern area was *P. argentipes* (90%). The southern parts collection consisted of 95% of *S. zeylanica* in which the transmission capability is unknown. Both identifications were confirmed by morphology as well as by PCR.

The peak aggregation of sandflies in cattle baited traps (Northwestern areas) was seen around 21.00 hr – 23.00 hr but the majority of aggregation consisted of males. The number of sandflies caught within the cattle traps was scanty in southern part of Sri Lanka when compared to northwestern parts.

The attempts made to confirm the vector species by demonstrating the presence of *L. donovani* within wild caught female sandflies were not successful.

None of the soil samples gave positive yield of immature stages.

The studies need to be extended to establish exact vectors of cutaneous leishmaniasis in Sri Lanka.