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Studies on cutaneous leishmaniasis in Sri Lanka: Clinical presentation, diagnosis, molecular characterisation and screening for possible reservoir hosts.

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Abstract

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Leishmaniasis is a vector borne disease caused by the protozoan flagellate belonging to the genus *Leishmania*. Most infections are zoonoses with a wide variety of animals acting as reservoirs and man as an accidental host.

In Sri Lanka for many decades leishmaniasis was considered an exotic disease until the detection of the first locally acquired case of cutaneous leishmaniasis in 1992. The present study describes the different clinical presentations of the cutaneous form of the disease, parasitological and molecular biological diagnosis, speciation of the causative organism using molecular techniques and the screening of canines and rodents for evidence of reservoir status.

One hundred and sixteen patients having cutaneous lesions and with no history of foreign travel, were examined parasitologically and by PCR, for confirmatory diagnosis of cutaneous leishmaniasis during the period June 2001 to June 2005. Of them 86 were diagnosed positive. These patients were from 12 districts of the country and majority was from Matale, and Kurunegala districts. All were from rural hinterland having behaviour associated with scrub jungles.

Males and females were equally affected and the ages ranged from 3 yrs to 70 yrs. Most of the patients had single dry lesions, which were either papulo-nodular, nodulo-ulcerative or ulcerative. Lesions were common on the face but a significant number were also seen on the upperlimbs and lowerlimbs. Satellite lesions were not common and a few showed a hypopigmented halo around the lesion. Most patients presented at the clinic in less than 8 months after the onset of the lesion.

Giemsa stained smears provided a simple, cheap and a reliable method of diagnosis. PCR showed higher sensitivity (100%). The organism was found to be fastidious in its growth requirements and as such *in vitro* culture was not a reliable method of diagnosis.

The causative organism of CL in Sri Lanka is a *Leishmania donovani* strain with close similarity to the Indian strain (88.9%) and showing atypical presentation of a generally visceralising disease.

Two of 151 dogs examined showed *Leishmania* amastigotes in Giemsa stained smears of skin in one and in peripheral blood in the other, which, however, is not sufficient to incriminate dogs as reservoir hosts. None of the 47 rodents screened, showed any evidence of *Leishmania* infection.

Future studies need to be directed towards the confirmation of the reservoir(s) and identification of vector species and its behaviour in order to control the disease.