Identification and Assessment of Risk Factors Associated with Cutaneous Leishmaniasis in Northwestern Yemen

A Thesis

Submitted for the Award of Ph. D. Degree in Science (Zoology-Parasitology)

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بسم الله الرحمن الرحيم

قُلْ إِنَّ صَلاتِي وَنُسُكِي وَمَحْيَايَ
وَمَمَاتِي لِلَّهِ رَبِّ الْعَالَمِينَ لاَ شَرِيكَ لَهُ
وَبِذَلِكَ أُمِرْتُ وَأَنَاْ أَوَّلُ الْمُسْلِمِينَ

صدق الله العظيم

سورة الأنعام (الآية 162-163)

Declaration

I hereby declare that this thesis is my own work and effort and that it has not been submitted anywhere for any award. Where other sources of information have been used, they have been acknowledged

Signature:……..

Date:…….

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Abstract

The clinicoepidemiologic profile of 143 cases (93 males and 50 females) with cutaneous leishmaniasis from Hajjah, Yemen was studied. *Leishmania* species identification was done for all cases by polymerase chain reaction- restriction fragment length polymorphism (PCR-RFLP). The bioptical material was scraped from both Giemsa stained and methanol fixed smears. The molecular characterization of *Leishmania* species revealed *Leishmania tropica* as the causative agent of CL in Hajjah, Yemen. Suspected reservoir hosts were caught from the study area dogs- mice- rock hyraxes- and bats. Liver, spleen, and skin smears were collected and examined microscopically and analyzed by PCR technique. No DNA of *Leishmania* parasite could be detected, which suggest an anthroponotic transmission by the sand fly bites.

16 species of sand flies belong to two genera were identified Six *Phlebotomus* and ten *Sergentomyia*. The sex *Phlebotomus* species are important vectors of leishmaniases. PCR examination of 150 *Phlebotomus* female was negative for *Leishmania* DNA. These results can be considered as risk factors for the increased prevalence of cutaneous and visceral leishmanaisis, especially in the case of wars and armed confrontations. Which requires an integrated program of epidemiological survey in various governorates in Yemen, and a program for control the insect vectors and animal reservoir, and suitable treatment of patients.

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