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Epidemiology of cutaneous leishmaniasis and molecular characterization of its causative agents in naturally infected sand flies in endemic foci of Kerman City, Southeastern Iran

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Cutaneous leishmaniasis (CL) is emerging and resurging in many parts of Iran despite various control measures and prevention strategies. Kerman Province (southeastern Iran) is one of the high-incidence foci of leishmaniasis where all three types of leishmaniasis, namely anthroponotic CL, Zoonotic CL and Kala-azar are present. However, in Kerman city, the etiological agents and their corresponding vectors have yet to be molecularly confirmed. This cross sectional study was carried out from March to November 2014 during which 1075 sand flies were collected and morphologically identified. Two prevalent *Phlebotomus* species namely *Ph. sergenti* and *Ph. papatasi* were found to comprise 94.3 and 5.7 percent of the catches respectively. To identify parasite in individual sandflies, DNA extraction was performed to provide for kDNA minicircles amplification using Nested-PCR assay. In order to provide evidence on the development of promastigotes stages in *P. sergenti*, engorged parous female sand flies were subjected to nested PCR assays. The agent of ACL, *Leishmania tropica* was detected in *Ph. sergenti* at the rate of 3.6 percent. To find about blood meal preference of *Ph. sergenti*, PCR-RFLP technique was carried out to amplify mitochondrial cytochrome B gene (mtDNA) which then underwent enzymatic digestion by *HaeIII* and *XhoI*. PCR-RFLP assay revealed that 41.8 percent of field collected sand flies fed on human blood. This is the first study to molecularly demonstrate *Leishmania tropica* as the main causative agent of cutaneous leishmaniasis transmitted by *Ph. sergenti* sand flies as a predominant and highly anthropophilic vector in the city of Kerman.

Biography

Mohammad Saaid Dayer has completed his MSc and PhD at the University of Newcastle upon Tyne (UK). He is an Assistant Professor in the Department of Parasitology and Medical Entomology of the Faculty of Medical Sciences in Tarbiat Modares University, Tehran, Iran. He is an Insect Pathologist and has published more than 27 papers both in national and international journals. His is currently focusing on ectoparasites, their involvement as vectors of infectious diseases and their control.

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