Original Paper

Determination of parasite species of cutaneous leishmaniasis using Nested PCR in Damghan – Iran, during 2008

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Abstract

Background and Objective: Cutaneous leishmaniasis with two forms of rural and urban is the endemic diseases and as a health problem in our country. Identification of parasite species and type of disease is very important for treatment of disease as well as for planning of control program. The microscopic observations by Giemsa-stained smears is the most common laboratory test for the diagnosis of cutaneous leishmaniasis, but the determination of parasite species is impossible and utilization of other ways such as biochemical and molecular methods is required. This study was carried out to determine the parasite species caused cutaneous Leishmaniasis by Nested PCR in Damghan, Iran.

Materials and Methods: This descriptive study was performed on 67 patients with dermal lesions that referred to Damghan health center laboratory in Iran during 2008. The patient's information were recorded in questionnaire. DNA of Giemsa-stained slides from patients was extracted and evaluated by specific primers of kinetoplast DNA using Nested PCR.

Results: Leishmania parasites were observed in 57 patients under light microscope. The 10 patients were infected by other dermal diseases. The PCR result showed the parasite presence in lesions of 57 patients is Leishmania major. 54\% of patients were male and 46\% were female. 72\% of the patients were lived in rural areas. 50.9\% of disease was observed in over 25 years old patients. Hands were the most common region of ulcer (44.7\%). 48\% of the patients had one ulcer and the other patients had two or more ulcers. High prevalence (31.6\%) of disease was observed in October.

Conclusion: This study showed that zoonotic cutaneous leishmaniasis to be prevalent in this area and Nested PCR method is a sensitive and accurate to leishmania species characterization.

Keywords: Cutaneous leishmaniasis, Leishmania parasite, Nested PCR, Iran

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