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Original Article

Detection of Leishmania major In Naturally Infected Sand Flies Using Semi Nested-PCR

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Abstract:

Background: The aim of this study was to assess *Leishmania* infection in sand fly species from areas where leishmaniasis is endemic. This is important for prediction of the risk and expansion of the disease.
Methods: In this cross-sectional study we used a PCR-based method for detection of *Leishmania* minicircle DNA within individual sand flies from Orzoieh, a new endemic leishmaniasis focus in southern Iran.
Results: We detected minicircle DNA in 6 of 92 (6.5%) *Phlebotomus (Phlebotomus) papatasi* collected indoor, while all of previous microscopic examination of sand flies specimens was negative for *Leishmania* promastigotes in the region. The species were identified as *Leishmania (Leishmania) major* by comparison of PCR products with a *L. major* positive control. All the *Leishmania*-positive sand flies were confirmed as *P. (P.) papatasi* by using a morphological key of Iranian sand flies.
Conclusion: Since PCR method is relatively easy and can process a large number of samples, it will be a powerful tool for the rapid identification of *Leishmania* species as well as monitoring the infection rate in sand fly populations in areas of low endemicity of leishmaniasis.

Keywords:

Leishmania major ، *Sand fly* ، *Leishmaniasis* ، *PCR* ، *Iran*

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