Original Article

Sensitivity and Specificity of Nucleic Acid Sequence-Based Amplification Method for Diagnosis of Cutaneous Leishmaniasis

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Abstract

Background and Objective*:* Culture, microscopic method is a gold standard method for identification of *Lishmania* parasite. The use of Molecular methods such as RT- PCR compared to microscopic methods has a higher sensitivity and specificity; however, it is not widely used due to its expensive equipment and the time requested. The use of nucleic acid sequence based amplification (NASBA) method is highly valuable for diagnosis of live parasite because there is no need for to use Thermo cycler. We aimed to assess sensitivity and specificity of NASBA for molecular detection of cutaneous Leishmaniasis.

Material and Methods: First, the RNA was extracted from 28 skin biopsies suspected cutaneous Leishmaniasis. Then, by means of specific primers designed for 18srRNA region, this region was amplified using NASBA isothemal amplification. To increase the sensitivity, the product was electroforesed in TBE (IX) buffer, using Syber Gold Flourecent probes. Using specific primers, RT- PCR was conducted on the samples too.

Result: For diagnosis of Leishmania parasites, NASBA and RT-PCR had the sensitivity of 81% and 51%, respectively, and specificity of 100%.

Conclusion: NASBA isothermal method with high sensitivity and specificity can be applied for identification of cutaneous leishmaniasis.

Keywords: Cutaneous Leishmanisis, NASBA, 18S rRNA

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