Abstract

OBJECTIVES: Leishmaniasis may cause not only cutaneous lesions, but also systemic, life-threatening infections in visceral organs. In Turkey, visceral leishmaniasis (VL) caused by Leishmania infantum, and cutaneous leishmaniasis (CL) caused by L. tropica and L. infantum have been recorded.

METHODS: Suspected of VL, patients extracted bone marrow samples and referred them to Parasitology Laboratory.

RESULTS: Histopathological and immunocytochemical analysis of patient’s bone marrow biopsy samples showed positive Giemsa-stained smear and IFA test. L. tropica was identified from bone marrow.

CONCLUSION: CL-causing L. tropica is well-recognized in Turkey, with cases identified previously in many provinces, including Manisa. It is also common in the endemic areas of southern Turkey.

Discussion

• Pathogenicity of leishmaniasis may differ according to the virulence of the Leishmania strain infecting the patient as well as the immune competence of the individual.

• Genetic exchange has already been reported between Leishmania strains in nature, which yielded the development of hybrid strains.

• Genomic and proteomic variations are identified in hybrid strains, which help them adapt to their environment.

• These hybrids may cause more severe clinical manifestations, with worse prognosis in patients.

Materials and Methods

• All patients examined are immunocompetent patients.
• Bone marrow samples were stained with Giemsa, inoculated in NNN and Enriched medium and used for Real Time PCR targeting ITS-1 region of Leishmania spp.
• Bone marrow sample of one patient was partly inoculated in the peritoneal cavities of three Balb/C mice for diagnosis.

• Development of infection in mice was observed regularly, and the lesions and symptoms are recorded.

• Giemsa-stained smears (+) Leishmania amastigotes.

• Real Time PCR targeting ITS-1 region => "Leishmania tropica"

• Examination of L. tropica-infected Balb/C mice from Patient 1

Results

PATIENT 1 (VL): Male, 50 years old. Admitted to hospital with fever, enlargement of both liver and spleen, nausea, diarrhoea, vertigo, extreme sweating and fatigue. Examination of his blood smear showed pan­cytopenia. VL was diagnosed with positive Giemsa-stained smears, culture and IFA test. CL was absent.

PATIENT 2 (VL): Male, 53 years old. Admitted to hospital with fever, enlargement of both liver and spleen, quick weight loss, extreme sweating and fatigue. Examination of his blood smear showed pan­cytopenia. VL was diagnosed with positive Giemsa-stained smears, culture and IFA test. CL was absent.

PATIENT 3 (VL): Male, 10 years old. Admitted to hospital with fever, fatigue, enlargement of both liver and spleen, and failure to thrive. Examination of his blood smear showed pan­cytopenia. Leishmaniasis was diagnosed with positive Giemsa-stained smears, culture and IFA test. CL was absent.

CL patient from Manisa: Female, 47 years old. First lesion as an itching acne 10 months before admission on the top of her nose, followed by three lesions around it. Giemsa-stained smear (+), Culture (+) Real Time PCR => "Leishmania tropica."

The question is:
Why do some L. tropica isolates involve only cutaneous regions (act like Dr. Jekyll) while some invade visceral organs and threaten life (act like Mr. Hyde)?

Leishmania tropica as Dr. Jekyll and Mr. Hyde: Visceralization of a well-known cutaneous leishmaniasis agent

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References


