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ORIGINAL ARTICLE

Correlation between presence of Leishmania RNA virus 1 and clinical characteristics of nasal mucosal leishmaniosis☆,☆☆

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Leishmaniosis mucocutaneous;
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Abstract
Introduction: Mucosal leishmaniosis (ML) is a severe clinical form of leishmaniosis. Complex factors related to the parasite and the host are attributed to the development of mucosal lesions. Leishmania RNA virus 1 (LRV1) can disrupt immune response, and may be the main determinant of severity of the disease; it should be investigated.
Objective: To study the existence of clinical differences between patients with ML with endosymbiosis by LRV1 and. those without it.
Methods: A cross-sectional cohort study with clinical evaluation, polymerase chain reaction (PCR) detection of Leishmania, species classification, and search of LRV1 was performed. Only patients with confirmed diagnosis of ML by positive PCR and with nasal mucosa injuries were included in this analysis.
Results: Out of 37 patients, 30 (81.1%) were diagnosed with *Leishmania braziliensis*, five (13.5%) with *Leishmania guyanensis*, and two (5.4%) with mixed infection of *L. braziliensis* and *L. guyanensis*. LVR1 virus was present in 26 (70.3%) of the cases.

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Conclusion: Correlation between clinical phenotype and presence of LRV1 was not observed, although the frequency of the virus is two-fold higher in mucosal lesions than that found in the literature on skin lesions in the same geographical area.

PALAVRAS-CHAVE
Leishmaniose mucocutânea;
Leishmaniose;
Leishmania braziliensis;
Leishmania guyanensis;
Leishmaniavírus

Correlação entre a presença de Leishmania RNA Vírus 1 e as características clínicas da leishmaniose de mucosa nasal

Resumo
Introdução: A leishmaniose de mucosa (LM) é uma forma clínica grave da leishmaniose. Fatores complexos ligados ao parasita e ao hospedeiro são atribuídos ao desenvolvimento das lesões de mucosa. Leishmania RNA Vírus 1 (LRV1) pode subverter a resposta imune, podendo ser o principal determinante da gravidade da doença e deve ser pesquisado.
Objetivo: Estudar a existência de diferenças clínicas entre pacientes portadores de LM com endosimbiose por LRV1 e as que não possuem.
Método: Foi realizado um estudo de coorte histórica com corte transversal com avaliação clínica, detecção da Leishmania por técnica de PCR, classificação da espécie e pesquisa de LRV1. Foram incluídos na análise da pesquisa somente os pacientes com diagnóstico confirmado de LM com PCR positivo, com lesão de mucosa nasal. Resultados: Dos 37 pacientes, 30 (81,1%) foram diagnosticados com *L. braziliensis*, 5 (13,5%) com *L. guyanensis* e 2 (5,4%) com infecção mista de *L. braziliensis* e *L. guyanensis*. O vírus LVR1 estava presente em 26 casos (70,3%).
Conclusão: A correlação entre o fenótipo clínico e a presença do LRV1 não foi constatada, porém a frequência do vírus é duas vezes maior em lesão de mucosa do que encontrado em trabalho, da mesma região, sobre lesão cutânea.

Introduction

Leishmaniosis is a neglected tropical disease that is largely ignored in the discussion of important tropical diseases. Contributing to this neglect are a complex epidemiology, ecology, lack of simple management tools, and a lack of data.[1] In 2010, the World Health Organization (WHO) estimated there were1 19,600 cases of American cutaneous leishmaniosis (ACL) in Brazil; they employed a 2.8–4.6 fold underreporting grade that is considered mild.[1] Vega et al. calculated the actual per capita cost (medical and non-medical expenditure) of cutaneous leishmaniosis (CL) treatment in Colombia to be US$ 345. Projecting the same cost to Brazil, the mean expenditure for ACL would be US$ 7,586,490 per year for new cases. The estimated cost of years of life lost to disease (DALY-WHO) per patient in Colombia was US$ 15,000.[2] If only mucosal leishmaniosis (ML) is considered, treatment and DALY costs would be much higher.

Mucosal leishmaniosis (ML) is an important and severe clinical form of leishmaniosis, due to the destructive potential of its injuries. ML is caused by a protozoan of the genus *Leishmania* that features an extranuclear DNA and a mitochondrial organelle, the kinetoplast. ML has two developmental forms during its life cycle: amastigote, which is a mandatory intracellular parasite in vertebrates, and promastigote, existing in invertebrate vectors (phlebotomines).[3]

There are indications that leishmaniosis may be native to the Amazon region. The Spanish chronicler Pedro Pizarro reported that people living in hot valleys of Peru were decimated by a nose disease on the Amazon side. The Andean theory, formulated by Rabello, has its origin from Peruvian *huacos* (pieces of pre-Columbian ceramics) discovered, depicting people with nose deformities. Based on epidemiological studies of *Leishmania braziliensis*, Marzochi and Marzochi proposed that leishmaniosis has its origin in the western Amazon.[4,5]

Leishmania are divided into two subgenera, *Viannia* and *Leishmania*. In Brazil, at least seven species that cause disease are recognized; cutaneous leishmaniosis is caused mainly by *L.* (*V.*) *braziliensis*, *Leishmania* (*V.*) *guyanensis*, and *L.* (*L.*) *amazonensis*, and, more rarely, by *L.* (*V.*) *laisoni*, *L.* (*V.*) *naiffi*, *L.* (*V.*) *shawi*, and *L.* (*V.*) *lindenbergi*, all of interest to the Amazon region. The first three species are involved in mucosal leishmaniosis, while *L.* (*L.*) *chagasi* is the causal agent of visceral disease.[3,6–8] *L. braziliensis* is the main cause of ML; however, a recently published study revealed significant prevalence of *L. guyanensis*, mainly north of the Amazon river.[9] *L. amazonensis* may also cause ML.[3] No case of ML by *L.* (*V.*) *panamensis* was reported in Brazil.

ML can manifest itself with nasal obstruction, epistaxis associated with crust production, rhinorrhea, and mild pain. At the initial stage, there is edema and anterior septal