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3rd Annual Congress on

INFECTIOUS DISEASES

August 21-23, 2017   San Francisco, USA

Evaluation of the enzyme iron superoxide dismutase (Fe-SODe) as a molecular marker in the diagnosis and identification of *Leishmania spp* in the school-age population of central Mexico

Catalina A López-González[1], Manuel Sánchez-Moreno[2], Juan Mosqueda-Gualito[1], Hernández-Montiel Hebert Luis[1], José A de Diego-Cabrera[3], María Elena Villagrán-Herrera[1], Ricardo F Mercado-Curiel[1] and **Nicolás Camacho-Calderón[1]**
[1]UAQ, Mexico
[2]UGR, Spain
[3]UAM, Spain

Statement of the Problem: The current method for diagnosing a *leishmanias* is infection in Mexico is to perform a biopsy of the effected tissue, by observing amastigotes within macrophages. This procedure is very invasive for the patient (1). Another method uses indirect immunofluorescence. Since it uses the entire parasite, this implies low sensitivity and specificity (2). In addition, the limitation becomes evident when the parasitaemia in clinical samples is low (3). These methods do not discriminate between species of *Leishmania*, impeding optimal treatment for the patient (4, 5). The purpose of this study was to evaluate the potential of the enzyme iron superoxide dismutase (Fe-SODe) excreted by *Leishmania spp*, used as an antigenic fraction by ELISA and western blot as a reference test for the search anti-*Leishmania* antibodies in central Mexico's school-age population.

Methodology: 131 serums from 6-12 year old children were collected and analyzed by the ELISA and western blot, using the homogenate (H) and Fe-SODe like antigen.

Findings: A prevalence of 22.1% (29/131) for L. mexicana, 9.9% (13/131) for L. infantum and 14.5% (19/131) for L Braziliensis. WB-FeSODe reported 23.66% (31/131) for L. mexicana, 9.9% (13/131) for L. infantum and 12.97% (17/131) for L. braziliensis. The sensitivity obtained for ELISA-Fe-SODe on WB was 82.4% for L. braziliensis, 92.3% for L. infantum and 93.5% for L. mexicana. The specificity obtained with this technique was 95.6% for L. braziliensis, 100% for L. mexicana and 99.2% for L. infantum. The Kappa value was 0.743 for L. braziliensis, 0.957 for L. mexicana and 0.915 for L. infantum.

Conclusion & Significance: A prevalence of 22.1% was reported for L. mexicana, 9.9% for L. braziliensis and 14.5% for L. infantum in urban areas of Mexico. In addition, this study highlights the importance of the use of the enzyme Fe-SODe as a useful diagnostic tool, practical and economical for the diagnosis *Leishmania spp*.

Biography

Catalina A López-González is pursuing her Master's in Biomedicine. She has experience working with the diagnosis and treatment of vector-borne diseases. This new method mentioned above of diagnosis has been evaluated in conjunction with the University of Granada (Spain), to develop a test that has high precision and specificity in the detection of *Leishmania spp*.

catalina-74114@hotmail.com

Notes:

J Infect Dis Ther, an open access journal
ISSN:2332-0877

Infectious Diseases 2017
August 21-23, 2017

Volume 5, Issue 3 (Suppl)

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