

Parasitology: Clinical and epidemiological characteristics of visceral leishmaniasis infection in an emerging area of Sao Paulos western region, Brazil - Luiz Euribel Prestes Carneiro - Universidade do Oeste Paulista, Brazil

Luiz Euribel Prestes Carneiro

Universidade do Oeste Paulista, Brazil

Leishmaniasis is a vector-borne disease that is caused by obligate intra-macrophage protozoa of the *Leishmania* species. The parasite lives inside the female sand fly, and multiplies. This insect is most active during the warmer months and at night, from dusk to dawn, in humid environments. Domestic animals, such as dogs, may serve as parasite reservoirs. Transmission from animal to sand fly to human may occur. The parasite may also be transmitted between humans through a blood transfusion or shared needles. Transmission can also occur in some parts of the world, from human to sand flying to human. Leishmaniasis is a condition that is caused by *Leishmania* type parasites. It is spread through the bite of certain forms of sandflies. The condition can occur in three main ways: cutaneous, mucocutaneous or visceral. More than 20 species of *Leishmania* cause human infections. Risk factors include poverty, malnutrition, deforestation and urbanization. All three types can be diagnosed by microscopic viewing of the parasites. Additionally, blood tests can diagnose visceral disease. Leishmaniasis can be avoided in part by sleeping under insecticide-treated beds. Certain steps include applying insecticides to kill sandflies, and early treatment to avoid further spread of the disease to humans. Always treat visceral, mucocutaneous, and severe forms of cutaneous leishmaniasis given the associated morbidity. Patients will seek treatment as per the current recommendations at facilities familiar with treating the disease. Because of its potential for progression into mucocutaneous leishmaniasis, New World skin leishmaniasis caused by members of the subgenus *Leishmania Viannia* is definitively treated. Cases triggered by *L. tropica* (Old World) and some *L. major* in some regions of Afghanistan may have a more violent or chronic path (up to years); *L. tropica* has been involved in occasional recurrence or viscerotrititis cases. The treatment required depends on where the disease is acquired, the *Leishmania* species and the type of infection. Some possible visceral disease medications include liposomal

amphotericin B, a combination of pentavalent antimonials and paromomycin, and miltefosine. Paromomycin, fluconazole, or pentamidine may be useful for cutaneous disease. In some 98 countries around 4 to 12 million people are currently infected. About 2 million new cases occur every year, and between 20 and 50 thousand deaths. About 200 million people live in areas where the disease is common in Asia, Africa, South and Central America and Southern Europe. The World Health Organization has obtained discounts on some medicines to treat the disease. It is classified as a neglected tropical disease. The disease may occur in a number of other animals, including dogs and rodents.

The diagnosis is determined by where the illness, the *Leishmania* species and the type of infection is acquired. Liposomal amphotericin B is the approved treatment for visceral leishmaniasis in Asia, South America and the Mediterranean, and is sometimes used as a single dose. Cure rates were reported as 95 percent with a single dose of amphotericin. In India, nearly all infections are resistant to pentavalent antimonials. In Africa it is recommended to have a combination of pentavalent antimonials and paromomycin. But these can have substantial side effects. Oral medication Miltefosine is effective against both visceral and cutaneous leishmaniasis. Side effects are usually mild, but if taken within 3 months of getting pregnant, it may cause birth defects. It doesn't seem to work out for *L. Grand* or *L. Braziliansis* of this. The evidence surrounding skin leishmaniasis care is low. For cutaneous leishmaniasis a variety of topical therapies can be used. What treatments are successful depends on the pressure, with *L.* being affected with topical paromomycin. *Dur*, *L. Truffle*, *L. Mexico*, *L. Panamensis*, *L. Braziliansis* of this. Pentamidine is effective in treating for *L. guyanensis*. Oral fluconazole or itraconazole is shown to be effective in *L. major* and *L. Tropica*: *Tropica*. As of 2015, there is insufficient evidence supporting the use of heat therapy in

cutaneous leishmaniasis. There are no studies conducted to study the effect on visceral leishmaniasis of oral nutritional supplements that are being treated with anti-leishmanial drug therapy.

Leishmaniasis can cause different clinical syndromes, including Cutaneous Leishmaniasis (CL) in which the patient generally presents with one or several ulcer(s) or nodule(s) on the skin, resulting from the infection of phagocytic cells located in the dermis. It often results into severe scar tissue in the skin. Most of the twelve million people infected with *Leishmania* worldwide are CL cases, a 1.5 million new cases occur annually. WHO has a program to develop new treatments for cutaneous leishmaniasis This study establishes a proof-of-concept that a tattoo device can target intra-dermal drug delivery against Cutaneous Leishmaniasis (CL). The selected drug is Oleylphosphocholine (OIPC) formulated as liposomes, particles known to be prone to macrophage ingestion.

Brazil harbors about 90% of visceral leishmaniasis (VL) in Latin America and in addition, the disease is nationwide spreading. Located in the western of São Paulo state, the region is considered an emerging area of VL. The first case was described in 2005 and by 2014, from the 45 municipalities, 33 (73.3%) have reported the sandfly, 23 (51.1%) canine leishmaniasis and 17 (37.7%) human VL-392 human reported cases and 22 deaths. The Regional Hospital of Presidente Prudente is a public reference center for VL diagnosis and treatment. From 2006 to 2014, 352 patients with the average age of 28.5 ± 25.5 years were diagnosed. Splenomegaly 98%, fever 95% and hepatomegaly 92%, were some general factors strongly associated with VL diagnosis. Children ≤ 18 years old represented 44.9% of the population. Individuals ≤ 4 years old (26.7%) and ≥ 65 years old (9.9%) formed the susceptible population. Twenty-one individuals died of the underlying or VL-associated causes. With a tropical climate, dry winters and wet summers, the region is one of the poorest of the state, consisting of dozens of small towns and villages. Local environmental factors including extensive sugarcane plantations, huge amount of watersheds flowing into three big rivers and nine big lakes may be involved as well as the overlapping possibility of VL and cutaneous leishmaniasis. Increase measures need to be addressed to complement curative practices.

Otherwise in preventive, this region will be depicted to the framework of sustained endemic foci of VL in Brazil.