

Successful treatment with intralesional meglumine antimoniate in recurrent cutaneous leishmaniasis: case report

Abstract

A case of a pediatric patient with a recurrent single lesion, four months after finishing treatment for seven lesions of cutaneous leishmaniasis with intramuscular meglumine antimoniate. Once the recurrence was confirmed by direct visualization of amastigotes, the decision taken was to repeat treatment with 1cc of intralesional meglumine antimoniate, with a uniform distribution inside the lesion and one week interval between each application. After four sessions of intralesional treatment, the patient meets curation criteria. The patient was discharged with follow-up appointment up to seven months after the treatment was finished, there was no evidence of recurrence.

Keywords: cutaneous leishmaniasis, recurrence, antimony sodium gluconate, intralesional infusion

Volume 1 Issue 2 - 2017

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Received: May 30, 2016 | **Published:** June 12, 2017

Abbreviations: CL, cutaneous leishmaniasis; WHO, world health organization; PAHO, pan american health organization; IM, intra muscular; IV, intra venous

Introduction

Leishmaniasis is a zoonosis caused by protozoans of the genus *Leishmania* and transmitted by the bite of females of the genus *Lutzomyia* (in the Americas) and *Phlebotomus* (in Asia and Europe). Its presentation is grouped into three clinical forms: cutaneous leishmaniasis (CL), mucocutaneous and visceral, being more frequent the cutaneous form. The most common form of presentation in our environment is a chronic ulcer with indurated and erythematous borders, associated with lymphadenopathies.¹

Annually 1.3 million new cases are reported, with 90% of cases occurring in Afghanistan, Algeria, Brazil, Colombia, Iran, Peru, Saudi Arabia and Syria.² In Colombia, during the 1990s, 6,500 new cases of CL were reported per year, a figure that increased progressively to 20,000 cases in 2006. The incidence, despite some variations, has remained within the ranks that classify it as an endemic disease in Colombia. In the year 2015, 7541 new cases of CL were reported in Colombia, representing a rate of 33.6 cases per 100,000 inhabitants. Regionally, it represents a public health problem for the municipality of Apartadó, registering rates of 321.2 cases per 100,000 inhabitants, a rate higher than that of the region of Urabá (104.8 cases per 100,000 inhabitants) and the department of Antioquia (126.9 cases per 100,000 inhabitants).³ Since 2013, PAHO includes the use of local treatments within the alternatives in cutaneous forms, with the use of systemic pentavalent antimonials as a first line for CL, with a high quality and strong recommendation; also, the use of intralesional pentavalent antimonials with very low quality and weak recommendation is proposed, indicating only when the systemic treatment is contraindicated.⁴

In Colombia, pentavalent antimonial salts such as meglumine antimoniate (Glucantime®) and/or sodium stibogluconate applied parenterally is the first-choice treatment for all forms of the disease. For the treatment of CL, a dose of 20mg/kg/day for 20 days IM or IV is recommended, guaranteeing 90 to 95% cure, however, its intralesional application is not protocolized in the Colombian guideline of the National Health Institute because of the high risk of recurrence.⁵ Pentamidine is indicated in cases where pentavalent antimonials are contraindicated or there is therapeutic failure, furthermore Miltefosine is recommended in confirmed cases of Leishmaniasis by *L. panamensis*, with cure rates above 91%.⁶

There are cases and series of cases in the literature of cutaneous leishmaniasis treated with intralesional antimonials showing divergent results, some with satisfactory results, with cure rates as high as 70-80%^{7,8} and others with poor cure rates.^{9,10} This case report describes a pediatric patient with recurrent cutaneous leishmaniasis who responded adequately to treatment with intralesional meglumine antimoniate.

Case presentation

Case of a minor infant, around five months of age, living in a rural area of the municipality of Apartadó, region of Urabá in Colombia, an endemic area for leishmaniasis, which consulted for presenting a six month-course of several ulcerated lesions, situated on the face, trunk and extremities. Upon physical examination, seven plaque like lesions were observed, partially ulcerated, erythematous, with a clean base, indurated and infiltrated borders, distributed as follows: two lesions on the face, three lesions on the trunk, one on the right arm and the other on the left. No perilesional lymphadenopathies were found or at nearby drainage sites. Direct microscopic examination for leishmania was performed resulting positive for amastigote forms of *Leishmania spp.*, therefore IM meglumine antimoniate was administered at a dose of 20mg/kg/day for 20 days as protocolized, the treatment was

well tolerated and no complications were documented. Finalizing the treatment, resolution of the lesions was verified, fulfilling all the criteria of cure (flattening of edges, disappearance of erythema, disappearance of base induration, scarring of ulcerated lesions) and discharging the infant with recommendations of vector isolation and sensitization to the family on signs of reactivation.

Four months later, at 9 months of age, the patient was brought back to the clinic due to a reactivation of one of the lesions in the right arm about one month ago and grew gradually. On physical examination, the infant appears in good general condition, normal vital signs, weighing 9kg, without evident positive finding on the cardiopulmonary, abdominal and sensory organ examination, with integrity of the nasal mucosa. In the skin examination, three small adjacent ulcerated lesions were seen, each of 4mm in diameter and 5mm of induration, situated on the upper third of the right upper arm, which were clinically suggestive of leishmaniasis (Figure 1); No perilesional, epitrochlear or axillary lymphadenopathies were found. Direct microscopic examination once again exposed amastigote forms of *Leishmania spp.*, the diagnosis of cutaneous leishmaniasis is again confirmed and the decision was to treat with intralesional Glucantime, since it was a single, small, non-articular lesion. Four sessions were performed with subcutaneous intralesional Glucantime (Figure 2 & Figure 3), using 1cc for each application, with one-week interval between each procedure. The infiltrations were made from the periphery to the center of the lesion so that it covered the entire extent of the ulcer and the edges, creating an induration under the entire lesion. After the treatment with intralesional Glucantime was completed, the criteria for healing were reached and the patient was discharged, indicating a new control after 6 months (Figure 4).

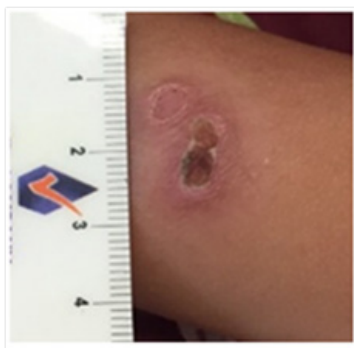


Figure 1 Entry date: 13-12-2014 (Session 1).

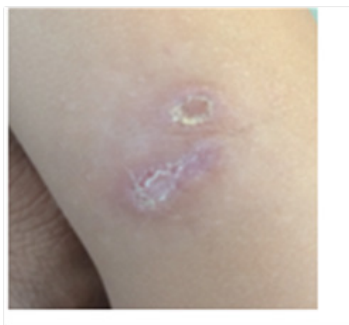


Figure 2 Control date 13:26-12-2014 (Session 2).



Figure 3 Control date 23:05-01-2015 (Session 3).



Figure 4 Control 7 months after treatment: 21-08-15.

Discussion

This report describes a case of recurrent cutaneous leishmaniasis in a young infant, successfully treated with intralesional Glucantime. Since 2010, the WHO Expert Committee has recommended local therapies for cutaneous leishmaniasis in the Old World, with the following alternatives: 15% Paromomycin and 12% Methylbenzetonium chloride twice a day for 20 days, thermotherapy: 1-3 sessions with local heat (50°C for 30 seconds, intralesional antimonials 1-5ml per session every 3-7 days between 1-5 infiltrations and cryotherapy with liquid nitrogen, one to two times per lesion, weekly up to 6 weeks, but did not recommend intralesional Glucantime for the treatment of cutaneous leishmaniasis in the new world.¹¹

However, many treatment modalities have been used in patients with CL, which can be administered either parenterally or intralesional,^{4,12} emphasizing that now days there is a clear tendency to use therapeutic options less invasive than systemic Glucantime, especially in cases of uncomplicated cutaneous leishmaniasis, given the adverse events described and documented in the literature;^{4,11,13-19} The most common adverse effects with the use of systemic Glucantime are myalgias, arthralgias, headache, anorexia, gastrointestinal symptoms, toxic skin

eruption, herpes, liver, kidney and cardiac alterations, therefore a strict medical supervision is required during the treatment. The WHO, for example, recommend the use of local treatments for cutaneous now that no treatment eradicates the infection, and rather shows less toxicity and greater acceptance by the patients.⁴

Several studies in the literature compare the efficacy of intralesional Glucantime with other topical and systemic drugs, showing an efficacy that exceeds 70%, similar rates if compared to systemic Glucantime. Although some studies report a lower cure rate, such as the intralesional application of meglumine antimoniate in Iran for *L. major*, with a low cure rate of 56%,²⁰ other studies, particularly in Latin America, report cure rates that exceed 70% with similar efficacy to the systemic Glucantime, without showing statistically significant differences.⁷ In Brazil, Vasconcellos et al.⁸ reported a healing rate close to 80% in patients who received intralesional therapy, considerably reducing adverse effects and therapeutic expenditure.⁸ Soto and collaborators in Bolivia (2012) conducted an open-label trial comparing intralesional meglumine antimoniate with cryotherapy and placebo and found a cure rate of 70%, 20% and 17% respectively, with a difference that was statistically significant ($p < 0.001$). Adverse events were minimal, presented only in 1/30 patients and consisted of local pain with the application. This study did not include children under 12 years of age.²¹

In travelers returning from endemic areas, the combination of intralesional antimony with cryotherapy is recommended for the treatment of uncomplicated cutaneous leishmaniasis, except for *L. guyanensis* and *L. braziliensis* infections in which parenteral therapy is preferred.²²

The adverse effects of systemic therapy and the elimination of subclinical parasites by immune processes once most of the parasites in the cutaneous lesion have been eliminated favor local therapy; Likewise, with local treatment, treatment days are reduced, which implies lower transport costs, supplies and the number of injections. Immunocompetent patients, those with a single cutaneous lesion of less than 3cm, not located on a joint or facial area and that are not superinfected, are the best candidates for local therapy.^{4,23}

This case of relapsed cutaneous leishmaniasis treated successfully with intralesional meglumine antimony could represent a therapeutic alternative for patients with single small lesions, particularly in patients who present limitations to systemic and supervised treatment, with relapsing lesions and with the advantage of generating less intolerance.

Acknowledgements

To the staff of the Colombian Institute of Tropical Medicine (ICMT-CES).

Conflict of interest

The author declares no conflict of interest.

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