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Original Research Article

Place of Cryotherapy in the Treatement of Cutaneous Leishmaniasis in Morocco (About 51 Cases)

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Abstract

Cutaneous leishmaniasis is known in Morocco since the XX century. It is a real public health problem.The treatment of cutaneous leishmaniasis has been dominated since the beginning of the century by stibine derivatives (in intralesional or systemic injection) represented essentially by Meglumine antimoniate (Glucantime). Physical treatments have been proposed such as cryotherapy with liquid nitrogen (AL). We tried to compare cryotherapy with intralesional injections of Glucantime (GL), and with the combination of both modalities. 51 cases were recruited to the Dermatology Department of Military Hospital of Meknes, between January 2008 and December 2016, and they were the subject of an epidemiological, clinical, therapeutic and evolutionary analysis. Healing was obtained after 6 weeks (mean) and involved 83.3% of patients receiving (AL) alone, 90% for those who received (GL) alone, and all patients treated by the combination of the two modalities. The efficacy of liquid nitrogen has been well demonstrated in our study, and is equal to that of intralesional Glucantime, it is thus an excellent therapeutic alternative especially in terms of tolerance.

Keywords: Cutaneous Leishmaniasis – Cryotherapy.

INTRODUCTION

Cutaneous Leishmaniasis is a serious health problem in Morocco. It can be caused by different species of Leishmania (L): L. Major, L.Tropica and L.Infantum. Clinical features depend on the species of the parasite involved and the immune response of the host [1].

Since the start of the century, the first line of treatment is dominated by antimonial drugs such as meglumine antimoniate, using it as a local or parenteral therapy [1].

Due to the rise of side effects, other therapeutic treatments may be required [2].

However, the drug studies made are biased and their scientific assessment remains poor [3].

In this work, the aim was to evaluate the efficiency and the tolerance of cryotherapy that utilizes liquid nitrogen (LN) and to determine its involvement in lines of therapy for cutaneous leishmaniasis in Morocco.

MATERIALS AND METHODS

Our work is a retrospective study that analysed different cases of cutaneous leishmaniasis presented by patients of the dermatology department of Moulay Ismael Military Hospital between 2008 and 2016, 8 years in sum.

The study concerned 51 cases; the diagnosis was based on the laboratory confirmation and identification of the species of Leishmania found while scraping the lesions or on a biopsy.

An operation sheet has been established, collecting sociodemographic data, anamnestic data and clinical data chiefly the number of lesions, their size and their topography.

A serie of patients has been treated by cryotherapy alone (LN), another by the use of intralesional injection of Glucantime (GL), the remaining was treated by the association of the two (LN + GL).

The protocole we employed consisted of a therapeutic cure with a rate of two to three sessions, a 3

to 5 days interval in between; each session was made of three cycles (freeze/thaw) from 10 to 30 seconds.

Patients were monitored at 6 weeks post treatment and controlled 6 months later.

Clinical recovery was defined by a complete fading of the infiltrated lesion.

RESULTS

Fifty one patients were included in the study, the average number of lesions was 5,2 , in 13 cases the patient had one lesion and 38 patients presented with multiple lesions .

The size of the lesions varied from 2 to 15 cm, they sat in isolation in 53% of the patients on the lower limbs, the upper limbs and the face, while 47% of patients had these lesions in multiple locations (Table-1).

Table-1:

Number of patients	51
Sex ratio (M / F)	9.4
Middle age	33.5
Average duration of evolution before the consultation	4 months
Number of lesions per patient (average)	5,2 Unique = 13 cases Multiple (<07 lesions) = 38 cases
Size (cm)	[2 – 15 cm]
Seat	Lower limbs> Upper limbs> face (47% multiple locations)
Clinical appareance	polymorphous

Clinical polymorphism was noted; we noticed an ulcero-necrotic lesion predominance with 56%, followed by crusted erythematous lesions with 21 %, nodular lesions with 11% and atypical clinical manifestations concerning 12%.

Recovery was obtained after 6 weeks on average , 25 patient out of 30 who were part of the first group under cryotherapy alone, were healed, making it 83.3% ; 9 out of 10 (90%) of the patients of the second group who received infiltration using Gl were pronounced cured and all the patients treated by the association obtained full recovery .

No side effects occurred in the first group meanwhile local superinfections were perceived in the two remaining groups.

In Spite of treatment, 87% of the patients were left with dischromic and unpleasant scars, 13 % didn't suffer of any aesthetic problem and they all were treated using cryotherapy (Table-2).

Table-2:

Therapeutic way	**LN**	**GL**	**LN + GL**
Number of patients	30	10	11
Clinical healing: after 6 weeks (average)	27	09	11
Side effect	No	Superinfection local	Superinfection local

DISCUSSION

In literature, many therapeutic lines of treatment for the Old World cutaneous leishmaniasis have been suggested , whether it was of local usage (Intralesional injections of antimonial derived substances, cryotherapy, applying paromomycin) for localized forms and small size lesions, or systemic usage (pentavalent antimony, fluconazole, pentamidine, amphotericin B) for more extended lesions [4, 5].

For some authors, observation alone may be sufficient if the agent responsible for Leishmaniasis is none other than L.Major, due to the spontaneous healing in more than half of the cases in less than 3 months [3].

In essence, different guidelines are followed depending on the characteristics of the lesions, the specie of leishmania and the immune response of the patient [4].

Pentavalent antimony are considered to be first line therapy in cutaneous leishmaniasis , they are the cause of many side effects and are responsible for a multitude of resistances noted in a set of countries , thus cryotherapy was recommended , especially in cases with a less number of lesions and superficial ones.

Various studies showed the well defined role of cryotherapy as a treatment in cutaneous leishmaniasis of the Old World, with an efficiency close

to 84% after four sessions in some clinical trials that were published.

A study set in Tunisia, with 93 cases of CL compared the efficiency of cryotherapy versus intralesional GL, showcased that the two methods have equal efficacy and on the plus, cryotherapy doesn't expose to the pigmented sequelae that we can notice when using intralesional GL [2].

In other studies, the comparison demonstrated that the association of both cryotherapy and intralesional injection of GL was of high significance as to using each treatment alone [6, 7].

The efficiency of liquid nitrogen was well displayed in our study and equal when correlated to the intralesional GL method.

The two therapeutic modalities proposed seem to improve the healing process in a 6 week notice; the cryotherapy is better tolerated set side to side by intralesional GL and its dischromic sequelae.

LN's mechanism of action consists of rapid freezing which leads to cellular destruction. Some studies unveiled that a small number of parasites could persist in the lesions that received cryotherapy, and this small amount may later ne the origin of a recurrence [1].

However the short interval used in our study (03-05 days) between the LN sessions favored less proliferation of the parasite.

A variety of studies endorses the appliance of LN on the center and the edges of the lesions until complete blanching lasting 10 seconds, followed immediately by injecting GL in the lesion until this one is completely infiltrated. The process is repeated 2 to 10 times every 2 to 15 days [6].

CONCLUSION

Cryotherapy alone or associated to Glucantime (intralesional administration) was beneficial in the treatment of cutaneous leishmaniasis.

The good level of tolerance noticed, marked it as an excellent therapeutic alternative.

Competing Interests

The authors declare that they have no competing interests

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