Original Article

Intralesional chloroquine in cutaneous leishmaniasis

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Abstract ***Background*** Cutaneous Leishmaniasis (CL) is endemic in certain areas of Pakistan .This study was carried out to determine the efficacy of intralesional chloroquine in CL.

Patients and methods CL patients with single lesion presenting to Leishmaniasis clinic of Tehsil Headquarter Hospital, Sadda from 1st December, 2003 to 30thMarch, 2004 and subsequently to outpatient department of Hayatabad Medical Complex, Peshawar, were included in the study. The patients were diagnosed clinically and by laboratory confirmation of parasites in a Giemsa – stained smear prepared from the lesion. All important clinical details were recorded on a specially designed pro forma and patients were registered for the purpose of treatment and a card was issued to them for subsequent visits and follow up. Twelve atients were treated with intralesional chloroquine thrice weekly for three weeks.

Results All patients were declared cured on the basis of clinical and pathological criteria at 7 weeks (4 weeks after the completion of therapy). No adverse effects were observed.

Conclusion Intralesional chloroquine was found to be safe and cost-effective therapy for single lesion of cutaneous leishmaniasis. Intralesional chloroquine was used for the first time in the treatment of CL.

Key words
Saal-dana, cutaneous leishmaniasis, intralesional chloroquine, single lesion.

Introduction

Cutaneous leishmaniasis (CL) is a caused by the protozoan parasite *Leishmania.* Although infection occurs in all continents, it is endemic in tropical and subtropical countries.[1] In Pakistan, the disease is endemic in Sindh and Balochistan provinces. It has also been reported from Multan, Dera Ghazi Khan and Chakwal districts in the province of Punjab.[2] In N.W.F.P the disease has been reported from District Dir and Afghan refugees' settlements.[3] In Afghanistan and Pakistan two Leishmania species; *L. tropica* causing dry type of lesions and *L. major* producing wet type of lesions are mainly seen.[4] Cutaneous leishmaniasis is called saal dana in Afghanistan and areas of NWFP where it is endemic (saal=year, dana=lesion).CL has been common in parts of Afghanistan for centuries.[5] The recent war-related population movements and environmental destruction has caused a large increase in the CL prevalence in tribal belt bordering Afghanistan. CL spread to refugee camps in

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tribal areas of Pakistan and is now transmitted locally in these areas.[6] Pentavalent antimonial compounds, sodium stibogluconate and meglumine antimonite are the linchpin of treatment of cutaneous leishmaniasis.[7] This form of therapy is costly and most of the patients in endemic areas depend upon the availability of antileishmanial drugs in the hospital.

In the search for cost-effective antileishmanial agent, intralesional chloroquine was selected for clinical trials in patients with single lesion of CL. Reasons for considering this particular drug included the following: First, chloroquine has proven antiprotozoal action, as against plasmodia in malaria. Secondly, intralesional route supplies high level of drug at the site of lesion. Thirdly, most of the patients in endemic areas have single lesion, intralesional treatment of CL can reduce the cost of treatment by manifold.

Patients and methods

This was an open, clinical, pilot study. Twelve patients with clinically suspected leishmaniasis presenting to the Leishmaniasis clinic of Tehsil headquarter hospital, Sadda, Kurram agency from 1st December 2003 to 31st March, 2004 and subsequently to outpatient department of Hayatabad Medical Complex , Peshawar till 30th November 2004 were included in the study. Clinical features including age, gender, nationality, site and number of the lesions were recorded. The lesion was examined clinically and diagnosis was confirmed by the presence of amastigotes of leishmania in a Giemsa-stained smear from the edge of the lesion. Smear examination is the earliest and sole method to confirm the clinical diagnosis in an endemic area. In our study only smear positive cases were included in the study. Those patients who had concomitant infection or lesion on the nose and ear were excluded from the study. Patients of less than 12 years of age were also excluded keeping in view the discomfort and pain associated with intralesional therapy.

After confirmation of diagnosis, lesions were injected with chloroquine through a 27 gauge needle of insulin syringe, into the dermis three times a week. The drug was infiltrated into the lesion from all sides until the whole lesion had blanched. The amount required was 4-5 ml depending upon the size of lesion. After 21 days of treatment, total of nine sessions of intralesional injections of chloroquine, the essential criteria for declaring the patient cured were complete disappearance of induration or redness in the nodular/ plaque form (dry type) and complete healing of ulceration (wet type) accompanied by the absence of parasites in the smear prepared from the lesion. Patients were re-evaluated for relapse after one month.

Results

A total of twelve patients were treated, 8 were males and 4 were females. Their age ranged from 10 to 40 years. Dry type of leishmaniasis was seen in 8 patients while wet type was noted in 4 patients **Table 1**. Cutaneous examination revealed erythematous nodular lesions, ulceration and crusting. The duration of lesion ranged from 4 weeks to 3 months. The lesions were situated on the exposed parts of the body

Table 1 Age and gender of patients

Serial No:	*Age*	*Gender*	*Duration (weeks)*	*Clinical type*	*Smear for L.D bodies*
1	24	M	4	Dry	Positive
2	40	M	6	Dry	Positive
3	25	F	12	Wet	Positive
4	18	M	10	Dry	Positive
5	12	M	8	Dry	Positive
6	40	M	8	Dry	Positive
7	38	M	12	Dry	Positive
8	21	F	12	Dry	Positive
9	18	M	8	Wet	Positive
10	20	M	8	Dry	Positive
11	13	F	6	Wet	Positive
12	34	F	7	Wet	Positive

LD bodies – Leishman-Donovan bodies

face, hands and feet .Family history of leishmaniasis was positive in 8 patients. None of the patients reported traveling to Afghanistan , thus proving that the disease is locally endemic. The earliest response was seen within 6 days of initiating treatment after three intralesional injections, in a case of nodular lesion with central ulceration resulting in healing of the lesion. In all the cases there was marked clinical improvement with flattening of lesions decrease in erythema and healing of ulceration. There were no side-effects following the treatment apart from the mild pain initially at the injection site. After healing, scarring was minimal or absent, but hyperpigmentation was present in all the cases. As both chloroquine and meglumine antimonite (Glucantime) are available in 5 ml vial the cost of chloroquine is Rs. 5 per vial, whereas the cost of Glucantime is Rs. 60 per 5 ml vial. Moreover, chloroquine is freely available even in the remotest areas of tribal belt, whereas availability of Glucantime is always a problem in endemic areas, the cost of glucantime varies from Rs. 60 to 100.

Discussion

Although cutaneous leishmaniasis is a self – limiting disease, it is disfiguring. It may persist for several months, leaving ugly scars. The aim of therapy is to shorten duration of the lesions and to prevent scarring. The ideal treatment should be as simple as possible and should have no side-effects.[7]

Glucantime is the main drug available in the hospitals to treat CL, it is administered on the basis of WHO recommendations, 20 mg/kg body weight per day to a maximum of 850 mg intramuscular for 10-14 days.[8] This mode of therapy cannot meet the demands of the patients in endemic areas, particularly in a country like ours where health resources are scarce.

Pentavalent antimony compounds can be used intralesionally in CL once or twice every 8 days. It is more economical than intramuscular treatment, since a much lower amount of drug is required, and less likely to cause the side-effects associated with high doses of systemically administered

antimony.[9,10] In endemic areas particularly in tribal belt patients are poor, and usually more than one member of the family has CL. Patients cannot afford even the cost of intralesional glucantime and are dependent upon hospital for the supply of drugs. Our results showed 100% cure rate in twelve cases of CL. The clinical parameters noted were improved and smear for LD bodies became negative with no recurrence after one month of follow up. In our opinion, chloroquine is the cheapest and safe mode of treatment of CL. This simple, therapeutic trial with intralesional chloroquine in CL has led to encouraging results and may prove a major breakthrough in the management of CL. Further studies on a large number of patients are necessitated to prove the efficacy of chloroquine in CL.

Conclusion

Intralesional chloroquine is safe and cost-effective treatment in single lesions of CL.

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