INDIAN J DERMATOL VENEREOL LEPROL 1989; 55 : 375-377

CUTANEOUS LEISHMANIASIS : THERAPEUTIC EFFICACY OF DAPSONE IN THE COMMONLY EXISTING SUB-TYPES

Jaideep Dogra, Bhupender Behari Lal and Shyam Nath Misra

In India, cutaneous leishmaniasis is confined to the western Thar desert. Epidemiologically, two different forms are seen, viz the rural and the urban forms. The vectors responsible for the transmission in this region are the *Phlebotomus papatasi* and the *Sergentomyia clydei*. The efficacy of oral dapsone was evaluated in the commonly existing sub-types of cutaneous leishmaniasis. Ten patients each of the nodular and ulcerative forms of cutaneous leishmaniasis were selected by strict clinical and pathological criteria and treated with oral dapsone in a dose of 2 mg per kg body weight daily, for 6 weeks. Seven patients of the nodular variety and all the ten patients in the ulcerative sub-group were cured. No major adverse effects were noted. Review after 6 months revealed no recurrence. In another ten patients taken as controls and not receiving the drug, the lesions showed no significant change.

Key words : Cutaneous leishmaniasis, Therapy, Dapsone.

In India, cutaneous leishmaniasis is confined to the western Thar desert, but the distribution is not uniform, it ranges from a few sporadic cases to an endemic focus. Bikaner situated 28° N and 73° 18' E, about 227 metres above sea level is endemic for cutaneous leishmaniasis. The surrounding terrain is mostly sandy with wild shrub grasses and the climate is usually dry with erratic and scanty rainfall. Both the epidemiologically classified forms of cutaneous leishmaniasis[1] are recognized in this region. An early ulcerative lesion, seen in patients residing in the villages on the edges of the desert is characteristic of the rural form, and a nodular lesion, with or without central ulceration, seen in patients residing in the city comprises the urban variety. The vectors responsible for transmission in this region are the *Sergentomyia clydei* and *Phlebotomus papatasi* respectively. Two subspecies of the Leishmania parasite have been postulated—the *Leishmania major*, causing the wet type cutaneous leishmaniasis and *Leishmania tropica* causing the dry type cutaneous leishmaniasis.[2] The reservoirs of infection are usually the *Meriones hurrianae*—the India desert gerbil and occasionally the dog.

Although, a spontaneous remission of the disease is often observed, this may take upto a year.[3] In this endemic zone, spontaneous healing occurs occasionally and takes about 8 months to a few years; the rural form heals relatively earlier as compared to the urban variety.

Of the numerous drugs claimed to be effective orally for cutaneous leishmaniasis, only a few are less controversial (rifampicin,[4] levamisole[5] and ketoconazole[6]). With the aim of saving the time and the cost of developing a completely new drug, drugs already in use for other diseases, are being screened world-wide. Dapsone has recently shown promise for the therapy of cutaneous leishmaniasis.[7,8] Since it is likely that the response to a given treatment may vary with different strains responsible for causing the disease,[9] the present study was undertaken.

Materials and Methods

Ten patients each, of the nodular and the ulcerative subtypes of cutaneous leishmaniasis, with a single lesion were selected. Simultane-

From the Department of Medicine and Dermatology, SP Medical College, Bikaner-334001 (Rajasthan), India.

Address correspondence to : Dr Jaideep Dogra, Shanti Kutir 1, Medical College Road, Bikaner-334001, India.

ously, similar subgroups of five patients each, were kept as control. Informed consent was taken from all the patients.

Study group A comprised of 10 urban patients with a nodular lesion each. Age ranged from 10 years to 40 years. Lesions were situated mainly on the hands or on the face. The duration of the disease ranged from 6 weeks to 10 weeks.

Study group B comprised of 10 rural patients with an ulcerative lesion. Age ranged from 7 years to 48 years. Lesions were situated on the arm, feet or the face. The duration of disease ranged from 5 weeks to 10 weeks.

Patients who had taken prior therapy for cutaneous leishmaniasis in any form were not included. The skin of the nodule or the indurated skin around the ulcerative lesion was slit with a scalpel blade (1-2 mm). The cut surface smeared onto a clean microscope slide, which was dried and stained with Leishman's stain and examined for the amastigotes. In this study only smear positive cases were taken.

Oral dapsone was prescribed to the subjects in the study groups A and B, as a single daily dose of 2 mg per kg body weight, for a total period of 6 weeks. No treatment was instituted in the control groups. The criteria used for declaring the patient as cured were complete disappearance of induration or redness in the nodular form and complete healing in the ulcerative form, accompanied by conversion to smear-negativity. Patients were re-evaluated for relapses after 6 months.

Results

Seven (70%) out of ten cases in group A, and all the ten (100%) cases in study group B were cured, after the prescribed 6 weeks of therapy. The parasitological cure was also observed after 6 weeks of therapy. No relapses were observed in these patients at 6 months follow up examination. The only side effect in 4(20%) cases was nausea.

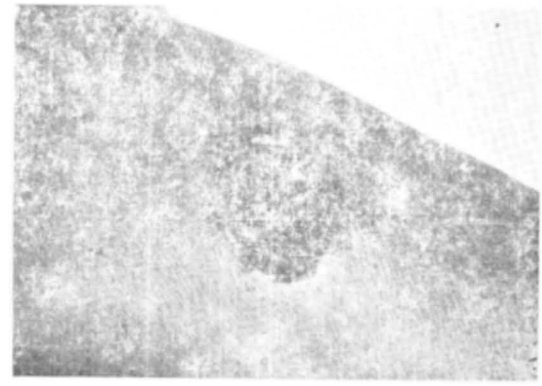

Fig. 1a. Cutaneous leishmaniasis lesion of 8 weeks duration on the forearm of a 28-year-old villager.

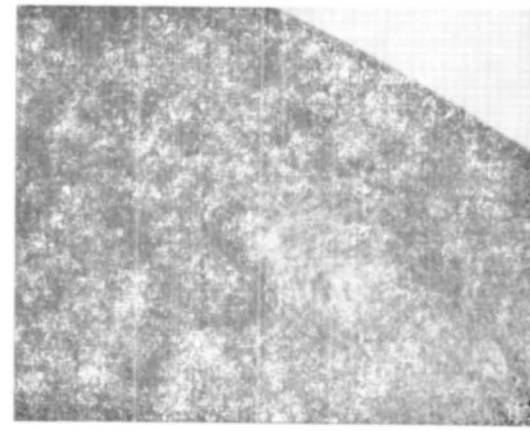

Fig. 1b. The same patient demonstrating cure after 6 weeks of oral dapsone.

In the control groups no significant change was noticed in any of the lesions.

Comments

Dapsone was effective for the treatment of localised active form of cutaneous leishmaniasis in a previous controlled trial.[7] The clinical and parasitological cure was more uniform and complete in the ulcerative variety as compared with the nodular sub-type. Hence, we recommend

Fig. 2a. Cutaneous leishmaniasis lesion of 10 weeks duration on the nose of a 38-year-old urbanite.

Fig. 2b. The same patient demonstrating cure after 6 weeks of oral dapsone.

larger controlled trials with this widely available drug.

References

1. Manson-Bahr PEC and Apted FIC : Leishmaniasis, in : Manson's Tropical Diseases, Eighedteenth Editors, Manson-Bahr PEC and Apted FIC : The English Language Book Society, Bailliere Tindall, 1982; p 93-115.
2. Griffiths WAD and Croft SL : Cutaneous leishmaniasis, Postgrad Doc, 1980; 3 : 388-394.
3. Harman RRM : Leishmaniasis, in : Text Book of Dermatology, Third ed, Editors, Rook A, Wilkinson DS and Edling FJG : Blackwell Scientific Publications, Oxford, 1979; p 901-904.
4. Iskander IO : Rifamicin in cutaneous leishmaniasis, J Int Med Res, 1978; 6 : 280.
5. Butler PG : Levamisole therapy of chronic leishmania tropica, J Trop Med Hyg, 1978; 81 : 221.
6. Symoens J, Moens M, Dom J et al : An evaluation of two years of clinical experience with ketoconazole, Rev Infect Dis, 1980; 2 : 674.
7. Dogra J, Lal BB and Misra SN : Dapsone in the treatment of cutaneous leishmaniasis, Internat J Dermatol, 1986; 25 : 398-400.
8. Unnithan ML, Pillai SMS, Vijayadharan M et al : Two cases of cutaneous leishmaniasis seen in Trivandrum, Ind J Dermatol Venereol Leprol, 1988; 54 : 161-162.
9. Bryceson A : Therapy of tropical skin diseases, Clin Exp Dermatol, 1981; 6 : 521-525.
10. Bryceson A : Cutaneous leishmaniasis—Review, Brit J Dermatol, 1976; 94 : 223-226.