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Successful treatment of cutaneous leishmaniasis using systemic interferon-gamma

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Abstract

Background: Interferon-gamma (IFN-gamma) is one decisive cytokine of T-helper type 1 (Th1) cells in experimental leishmaniasis. It activates macrophages to kill intracellular parasites and leads to a decline of less mature macrophages in the infiltrate. Application of IFN-gamma heals the disease in susceptible mice and has recently been shown to be of benefit in human disease when given locally or in combination with antileishmanial drugs.

Objective: We investigated the clinical and histological effects of systemic application of IFN-gamma in a case of human cutaneous leishmaniasis in which an ulcerating lesion endangered the left upper eyelid of a 4-year-old boy.

Results: IFN-gamma (100 mu g/m2 of body surface per day) was given subcutaneously for a period of 28 days. The well-tolerated treatment resulted in rapid and complete healing of the lesion without functional impairment. Histological examination disclosed the formation of dermal granulomas. Immunohistochemical characterization of the myelomonocytic cells in the lesion before and after treatment revealed a marked decrease of less-mature macrophages in the infiltrate. This phenomenon equals observations in healing lesions during naturally occurring resistance in murine leishmaniasis.

Conclusion: Systemic monotherapy with IFN-gamma can be an effective treatment for complicated cases of human cutaneous leishmaniasis without the side effects sometimes observed with systemic pentavalent antimony. Its effects on the myelomonocytic infiltrate are similar to the ones observed during the physiological immune response in natural resistance.

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