Dapsone in the Treatment of Kaposi's Sarcoma

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Previously we observed clinical and histological regression of Kaposi's sarcoma in the skin in a 38-year-old man with AIDS following treatment with Dapsone. This observation initiated the present study where 6 patients with Kaposi's sarcoma in the skin without clinical signs of systemic spreading were treated with Dapsone 100 mg daily for four months. During this treatment clinical and histological regression of Kaposi's sarcoma was found in three patients. In a further patient only clinical regression was found, while no regression was found in the remaining two patients with Kaposi's sarcoma. *Key words: Kaposi's sarcoma; Dapsone; Regression.* (Received April 16, 1984.)

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Radiation therapy and chemotherapy are considered the treatments of choice in Kaposi's sarcoma (KS). Radiation therapy is preferred for the benign skin associated variant whereas cytostatic agents usually are reserved for the malignant, generalized KS (1).

Recently, we have observed clinical and microscopic regression of KS lesions in the skin after treatment with Dapsone in a 38-year-old man with acquired immune deficiency syndrome and KS (2). This observation gave rise to the establishment of this study which aims at verifying clinically and histologically, if Dapsone might be a potential drug in the treatment of KS.

MATERIAL AND METHODS

Characteristics of patients

Six patients, four males and two females, mean age 79 years (range 68–83 years) with biopsy proven plaque and/or nodular KS in the skin for 3–10 years without clinical signs of systemic spreading, were studied. The KS lesions were found mainly on the lower extremities and the subjective symptoms were tenderness, especially if the tumours were situated in an area exposed to pressure as in the soles. Four of the patients had only raised violet palques; in each of these at least two plaques exceeded 15 cm^2. In one patient both plaques and dark blue haemorrhagic KS nodules were registered, whereas in one exclusively numerous nodules sized 5–15 mm in diameter were presented. All patients had earlier received repeated X-ray treatment with temporary regression of KS, but at the start of the study the neoplasm again had progressed.

Histological examination of biopsies from nodules and plaques showed in all patients typical KS-changes: In the plaque type numerous irregular vascular clefts were found, lined by factor VIII positive, protruding endothelial cells surrounded by various amounts of proliferating spindle cells. Extravasated erythrocytes and haemosiderin deposits were seen as well as a perivascular inflammatory infiltrate composed of plasma cells and lymphocytes. The nodular lesions consisted mainly of interwining bundles of spindle cells lining vascular slits containing a few erythrocytes. The spindle cells showed little pleomorphism and varying reactions following staining for factor VIII specific antigen. Some cells contained hyalin bodies. Siderophages and infiltration of plasma cells and lymphocytes were present. In both lesions, mitosis were sparse or absent.

Treatment

Dapsone 100 mg a day in a single oral dose was given for a period of four months.

Control parameters. Once a month thickness, size, and colour of the tumours were assessed. The same area which had been biopsied before treatment was again biopsied when the study was finished. Hemiglobin, hemoglobin, leucocytes, differential count, and se-creatinin were estimated at intervals of one month.

RESULTS

The treatment resulted in clinical improvement in four of the six patients. These four patients solely presented plaques of KS and during the treatment all the plaques gradually regressed into brownish pigmented atrophic scars in three, while the plaques became less infiltrated in one of the patients. The violet colour became less intensive and was substituted by a brownish pigmentation. No clinical improvement was found in the remaining two patients with KS, of whom one had nodules only, the other both nodules and plaques. Biopsy following treatment with Dapsone in three patients with plaques revealed no longer any sign of KS, but on the contrary marked fibrosis and hemosiderosis were seen. No proliferation of vessels and no specific inflammation were demonstrated. Sporadic unspecific proliferation of vessels lined by normal endothelial cells was found in the remaining patients with clinical improvement, but there was no histologic signs of KS. In the two patients without clinical improvement there were no histologic signs of regression of KS. Hemoglobin concentrations became slightly increased in all patients during treatment. No change was noted in the other laboratory parameters tested.

DISCUSSION

KS complicating immunosuppressed renal transplant recipients may regress, if the immune suppressive therapy is withdrawn (3, 4), but spontaneous regression of KS is seldom (5).

The bacteriostatic effect of Dapsone is utilized in the treatment of infectious diseases such as leprosy (6), but Dapsone is also applied in several inflammatory, non-infectious dermatoses as dermatitis herpetiformis, pustular psoriasis, vasculitis and pemphigus (7, 8). The mechanism of action of Dapsone in these conditions is not clearly elucidated, but apparently the drug is primarily of benefit in dermatoses in which neutrophils predominate the inflammatory infiltrate (9). In KS, however, the inflammatory cellular infiltrate is composed of lymphocytoid cells, plasma cells, and histiocytes. The same inflammatory cellular components are seen in processes in which delayed hypersensitivity is involved—as in leprosy—and the histologic picture may in early KS imitate a granulomatous reaction. The etiology of KS is speculative, but Cantwell found pleomorphic, acid-fast bacteria in KS lesions from the skin and internal organs and suggested that these bacteria might be implicated in the patogenesis (10, 11, 12). The regression of KS in our patients might therefore be explained by an inhibition of such microorganisms caused by Dapsone.

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