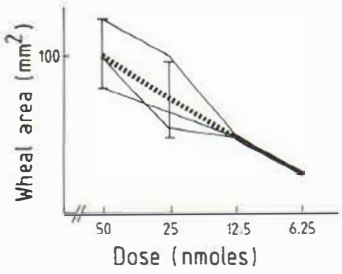

Fig. 1. Dose–response relationship after intracutaneous injection of peptide 6A. The abscissa represents the amount of peptide 6A, and the ordinate the wheal area expressed as the product of two perpendicular diameters. The individual curves for the three volunteers participating in this part of the study are all presented, as well as the mean ± S.D.

that local fibrinolysis is intimately linked to the development and perpetuation of the inflammatory process (9). Local fibrinolysis, i.e. the activity of locally formed plasmin, is very pronounced in the early phases of local tissue injury (7, 10). Plasmin increases microvascular permeability by several mechanisms, one of which might involve the formation of vasoactive fibrin-derived peptides (4, 9).

Since the surrounding flare seen after injection of histamine does not occur in response to either bradykinin or the peptides, it is less likely that their effect is due to any appreciable release of histamine. Furthermore, the lack of a delayed appearance of wheals as seen after injection of kallikrein (5) indicates that the kallikrein and peptide effects on microvascular permeability are different. The peptide effect is also different from the reaction with erythematous streaks and hyperalgesia seen after injection of prostaglandins (6).

Thus the mode of action of the two fibrin-derived peptides remains unknown. Further investigations on their mechanism of action and possible pathogenetic role in clinical cases seem warranted.

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Subcorneal Pustular Dermatosis and IgA Gammopathy

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Abstract. An elderly male patient, who developed subcorneal pustular dermatosis 4 years after he first developed IgA gammopathy is described.

Key words: Subcorneal pustular dermatosis; IgA gammopathy

The pathogenesis of subcorneal pustular dermatosis remains unknown. The condition, first described in

1956 and subsequently reviewed by Sneddon & Wilkinson (9) may be complicated rarely by the development of IgA paraproteinaemia or myeloma (1, 2, 7, 8). Subcorneal pustular dermatosis developing in a patient with a 4-year history of IgA gammopathy is the subject of this case report.

CASE REPORT

A 78-year-old man presented in 1975 with scattered aches and pains. Investigations showed an elevated ESR of 56 mm/h, and electrophoresis showed a monoclonal IgA paraprotein band. Urine immunoelectrophoresis and serum urea, Ca^{2+} and skeletal survey were normal. A 5-day course of Melphalan (5 mg/day) and Prednisolone (30 mg t.d.s.) was given because of abnormal marrow findings which were thought to be consistent with myeloma. The patient later defaulted from out-patient follow-up. However, in 1979 he was seen with an eruption over limbs, trunk, groins and axillae consisting mainly of flaccid pustules with a tendency to coalesce and form circinate and serpiginous patterns. Immunohistology of both normal and involved skin showed no abnormal findings but routine histology demonstrated changes typical of subcorneal pustular dermatosis. The serum IgA level was elevated, at 390 IU/ml (NR 97–181 IU/ml). Serum electrophoresis showed an IgA paraprotein band and a repeat marrow examination showed no abnormality. The eruption responded well and quickly to Dapsone 100 mg daily.

DISCUSSION

The aetiology and pathogenesis of subcorneal pustular dermatosis is unknown but an increased presence of polymorphs in the epidermis can result not only from increased chemotactic activity, but also from alterations within the neutrophil leukocytes themselves. For instance, in psoriasis, complement cleavage products, particularly C3a, presumably produced by a complement activation in the subcorneal region of the epidermis are thought to be largely responsible. (10) Moreover, Michaëlsson (6) has recently demonstrated that both random and active migration of neutrophil leukocytes are increased in psoriasis, compared with controls. In addition, polymorph function is increased when measured by NBT reduction in psoriasis.

The role of IgA antibody in the pathogenesis of subcorneal pustular dermatosis is unclear. Other dermatoses, including urticarial vasculitis (3) and relapsing annular erythema (5) have been described in patients with elevated circulating IgA levels due to IgA meylomatosis.

In the few reports on subcorneal pustular dermatosis where serum immunoglobulin and electrophoretic findings are reported, these have mostly been normal. However, Peterson et al. (7) noted an elevated IgA level in 2 patients with subcorneal pustular dermatosis, whereas Krogh & Tönder (4) failed to demonstrate this change in their 2 patients. However, blister fluid from both these patients showed IgG and IgM antibodies to rabbit red cells but lacked IgA and antibodies to stratum corneum. These findings could be interpreted as being due to consumption of IgA and antibodies to statum corneum in the very early phase of blister formation and the findings of antigen/antibody/complement complexes deposited in the roofs of blisters in vivo and the falling titre of stratum corneum antibody in serum during exacerbations with a rapid increase towards normality during remission, would tend to favour this hypothesis. The presence of IgA inside the pustular lesion attached to polymorphonuclear leukocytes in a patient with subcorneal pustular dermatosis and IgG cryoglobulinaemia was described for the first time recently by Sneddon & Wilkinson (9).

The relationship between elevated circulating IgA levels and subcorneal pustular dermatosis merits further study. In all other reported cases of subcorneal pustular dermatosis associated with IgA gammopathy the latter developed after the dermatosis. The patient described here was unusual in that the dermatosis made its debut 4 years after the development of the IgA gammopathy.

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Blood Polyamine Levels in Psoriasis Patients Undergoing PUVA Treatment

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Abstract. Blood spermidine and spermine concentrations were determined in 6 men with psoriasis, before, during, and after treatment with PUVA. Blood samples from 13 healthy men of similar age were used as controls. Psoriasis patients showed a significant increase in spermine concentration, which persisted throughout 4–8 weeks of therapy, during which the psoriasis lesions cleared. High spermine concentrations were also noted 1 month after stopping treatment, whilst the patients were still in remission. No significant change in spermidine concentration was seen.

Key words: Polyamines; Spermine; Spermidine; PUVA; 8-Methoxypsoralen; UVA-light

An association of polyamine biosynthesis and accumulation with rapid mammalian cell growth and proliferation has recently been shown. A potential connection between polyamines and the epidermal-cell hyperproliferation of psoriasis was first reported by Proctor et al. (6), who noticed elevated concentrations of spermidine and spermine in the blood of patients with psoriasis. Raised extracellular concentrations of polyamines have since been reported in blood (2) and urine (9) in this disorder, and increased concentrations of polyamines and increased activity of their biosynthetic enzymes have been reported in psoriatic skin (8). A few studies on polyamine metabolism in psoriasis patients undergoing treatment have been reported. Therapy including topical administration of anthralin, salicylic acid, tar baths, ultraviolet light, and corticosteroids (7, 8) has resulted in reduced cutaneous concentrations of putrescine, spermidine, and spermine, and in reduced urinary excretion of spermidine and spermine. No sequential analysis of polyamine metabolism in patients receiving treatment with 8-methoxypsoralen and UVA light (PUVA) has yet been published. We now present findings on the concentrations of blood polyamines in patients undergoing PUVA treatment.

MATERIAL AND METHODS

6 men with psoriasis but otherwise healthy were chosen for the study. All had generalized symmetrical psoriasis. They were receiving no drug other than 8-methoxypsoralen. There had been no exposure to strong sunlight during the 2–3 months preceding the investigation. The patients were given 8-methoxypsoralen, 30–60 mg related to body weight, followed by irradiation 2 hours later. This procedure was carried out four times weekly (11). The light source was a high-intensity UVA system (PUVA 4000, Sylvania) with an emission spectrum between 320 and 390 nm and a peak emission of 365 nm. All patients were phototested, and the initial dose was kept below the minimum phototoxic dose (MPD). As a rule the dose was increased weekly by 0.5 J/cm^2. Treatment was stopped when the psoriasis lesions had cleared. No maintenance treatment was given.

Blood samples were collected just before treatment, and once each week during the treatment period until the lesions had cleared. Further blood samples were collected 1 month after treatment was stopped. As controls, blood samples from 13 healthy men aged 22–60 years were used. 3.5 ml of whole blood was mixed with 0.5 ml of sulphosalicylic acid solution (800 mg sulphosalicylic acid plus 0.32 mg ethylene diamine tetra-acetic acid disodium salt per ml). The mixture was frozen and thawed three times. After centrifugation the extract was adjusted to a pH of 2.0–.25 and passed through a filter with a pore size of 0.22 μm (Millipore Corp., Bedford, Mass. 01730). Chromatographic separation of the amines in the extract was carried out on a column of Durrum DC 6 A (7.0×0.6 cm) using an automatic amino acid analyser (LKB-BIOCAL 3201). By step-wise elution with sodium citrate buffers the amines emerged distinctly separated. The method used in our laboratory is described elsewhere (5).

RESULTS

The psoriasis lesions cleared up in all patients after 4–8 weeks of treatment (Table I) and the patients were still in remission 1 month after stopping treatment. The polyamine contents of blood from patients and controls are shown in Table II and Fig. 1.