

Atopy and Contact Sensitization in Psoriasis

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The allergen-specific IgE antibody was determined in 20 men and 120 women with psoriasis and the results were correlated with a history of current and previous allergic disease. Allergic disease was reported in 21% of the patients, but a positive RAST test was obtained in 44%. In chronic plaque-type psoriasis a positive RAST test was significantly more common (58%) than in active psoriasis (22%). Grass pollen and house dust mite were the most prevalent sensitizing allergens, with frequencies of 64% and 53%, respectively in the sensitized subjects. Sensitization increased with age and polysensitization was common. Contact dermatitis was verified with patch tests in 12 men and 20 woman, of whom 10 had chronic plaque-type psoriasis and 22 active psoriasis. Tar, nickel sulphate, corticosteroid mixture and thiomersal were the most common allergens. No irritant reactions were seen at the concentrations used. Atopic allergic diseases and contact sensitization were therefore common among our psoriatic patients. Key words: psoriasis; atopy; contact sensitization; IgE.

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INTRODUCTION

Psoriasis affects \approx 2% of the population (1), and can be induced and worsened by endogenous and exogenous factors (2). An understanding of the extent to which allergic diseases play a role in the natural history of psoriasis may therefore be of importance (3).

Italy has a rich vegetation, producing a considerable amount of pollen and giving rise to a high incidence of allergic reactions. In northern Italy in particular, industrial pollution and the increasing use of allergenic ornamental plants have contributed to an increase in morbidity. The prevalence of allergic diseases in the general population is unknown but a 34% incidence of sensitization among 17–24 year old national servicemen has been reported (4).

The aim of this study was to investigate the incidence of allergic sensitization in patients attending our psoriasis treatment and study centre.

MATERIALS AND METHODS

From a total population of 247 consecutive patients, 140 hospitalized patients and outpatients affected by psoriasis were selected. The remaining 107 patients were excluded from the analysis either because they had been treated with methotrexate, cyclosporin, UV irradiation or high doses of topical corticosteroids or because they refused to give their consent.

The selected patients (20 men, 120 women; mean age 38.4 years; range 18–63 years) were divided into 2 groups on the basis of their clinical diagnosis: 89 had stable plaque-type psoriasis; and 51 had

active psoriasis, defined as pinhead-sized papules devoid of scales in patients with psoriasis as proven by clinical and histological examinations (5). A family history of allergy was noted in 24% of patients and 19% did not know.

All patients underwent the CAP-Phadiatop Pharmacia test (6), which identifies the IgE antibodies specific for 8 inhalatory allergens, and for those who were positive to this test the specific allergens were identified by means of the CAP-RAST test (Table I). The presence of contact allergens was evaluated by means of the Italian GIRDCA series patch tests, as shown in Table II, together with some other allergens added on the basis of the anamnesis. The tests were conducted according to the ICDRG guidelines (7); only in the case of corticosteroids were the 7-day results also considered. Weak erythematous reactions were considered as negative.

RESULTS

A history of allergic rhinitis was noted in 19% and a history of asthma in 5% of the psoriatic patients. None had atopic dermatitis and the RAST test was positive in 44%. The RAST test was positive in 58% of patients with stable psoriasis, significantly higher ($p < 0.01$) than in active psoriasis (22%). House dust mites and grass pollen were the predominant allergens (Table I), with frequencies of 64% and 53%, respectively among the positive patients. Sensitization increased with age (for patients aged ≤ 40 years) and then decreased. Polysensitization was also very frequent: of the 62 CAP-Phadiatop and RAST-positive patients, 25 were allergic to only 1 allergen and 37 were allergic to > 1 , including 16 who were sensitized to ≥ 4 .

Although a history of contact eczema was obtained in only 4% of the patients, 23% had positive patch test reactions, of which 62% were women. The most frequent allergens were tar, nickel sulphate and corticosteroids (Table II). The number of positive tests was 1.8 per woman and 1.66 per man. Polysensitization was more frequent among women. There were more positive patch tests among the patients with active psoriasis (22/51; 43%) than among those with stable psoriasis (10/89; 11%).

DISCUSSION

It was found that atopic sensitization and contact dermatitis are common among psoriatic patients. There have been only a few anecdotal reports of contact dermatitis in patients with psoriasis vulgaris (8–10). In palmar plantar psoriasis, however, 15 of 21 patients were found to have positive patch tests (11).

In this study the RAST test was more often positive during stable plaque-type psoriasis whereas contact dermatitis was seen most frequently in the active phase. The reason for this is not clear but at least 2 hypotheses can be put forward. Genetic predisposition may play an important role: genes such as those coding for HLA-DR2 and the T-cell receptor (TcRa) are associated with atopy, but there are no studies indicating a link between atopy and psoriasis (12). Secondly,

Table I. Types of allergens and the number of positive reactions with atopic allergy

| | |
|------------------|----|
| Grass | 33 |
| Weeds | 15 |
| Birch | 17 |
| Olive | 12 |
| Cypress | 6 |
| Horse chestnut | 4 |
| Acer | 2 |
| Ragweed | 11 |
| Aspergillus | 1 |
| Monilia | 1 |
| House dust mites | 40 |
| Cats | 1 |

Table II. Contact allergens in 32 patch test-positive psoriatic patients

| Allergen | Number of positive patch tests | |
|------------------------|--------------------------------|---------|
| | Males | Females |
| Coal tar | 8 | 4 |
| Nickel sulphate | 1 | 7 |
| Corticosteroid mixture | 2 | 6 |
| Thiomersal | 3 | 4 |
| Methanol | — | 6 |
| Colophony | 1 | 4 |
| Fragrance mixture | 1 | 3 |
| PTPA resin | 2 | — |
| Propolis | 1 | 1 |
| Potassium bichromate | 1 | — |
| Balsam of Peru | — | 1 |
| Thiuram mixture | — | — |
| Neomicin | — | — |
| Epoxy resin | — | — |
| Formaldehyde | — | — |
| Parabens mixture | — | — |
| Ethylenediamine | — | — |
| Kathon CG | — | — |
| Preservatives mixture | — | — |
| MBT mixture | — | — |
| Total | 20 | 36 |

we need to take into account the results of a study which showed that the mononuclear blood cells of patients with stable psoriasis are less stimulated by phytohemagglutinin and alloantigens than those of patients with active psoriasis (13). These latter data suggest a possible interaction between the clinical evolution of psoriasis and the production of the cytokines that intervene in immunoreactions affecting the Th1 lymphocytes involved in cell-mediated responses and the Th2 lymphocytes active in atopy. The first type of cytokines seem to act during the active phase of psoriasis, whereas the second are active during the non-active plaque-type phase and, for this reason, are more associated with IgE-mediated allergies. In clinical practice, patients with chronic psoriasis are more likely to develop IgE-mediated diseases, whereas in the active phase they will be more affected by contact dermatitis: the greater application of topical treatments during this phase increases the risk of contact dermatitis.

It is important to stress that 33% of the sensitized

subjects had not experienced allergic disturbances, which means that there is a large pool of sensitized but totally asymptomatic patients (14); the 107 patients excluded should also be taken into account.

Analysis of the influence of age on the frequency of sensitization revealed the interesting fact that there is an age-related increase in sensitization up to the age of 45 years, after which it subsequently declines. Younger psoriatic patients tend to become allergic earlier than those who are older, suggesting the existence of an underlying immunological factor (15). There is a linear relationship between the increase in the frequency of dermatitis and the time since the clinical onset of psoriasis, and the frequency of sensitization also increases with the number of topical agents applied.

Finally, in the majority of our patients, there was a positive correlation between the patch-test results and the drug used for topical treatment of the disease. It is therefore possible that avoiding exposure to some of the most frequently encountered allergens may lead to an improvement in some recalcitrant forms of psoriasis.

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