Study

Allergic contact dermatitis in patients with atopic dermatitis: A clinical study

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ABSTRACT

Background: Atopic dermatitis (AD) is a chronically relapsing dermatitis with no known cure. Due to the chronic nature of the condition, frequent and long term topical therapy is used. This may lead to sensitization, resulting in allergic contact dermatitis (ACD). Aims: The aim of the study was to observe the frequency of ACD in atopic patients in this part of the country using Indian standard battery. Methods: A total number of 30 cases of AD were taken for the study. Diagnosis of AD cases was based on the criteria of Hannifin and Rajka (1980). All the selected cases of AD had mild to moderate grade of severity. All these cases were treated and patch tested during the remission period. The duration of the study was 12 months. Results: Out of the 30 AD cases, 7 cases showed positive ACD with patch test allergens. Conclusion: This study shows that ACD is not uncommon amongst atopic individuals.

KEY WORDS: Atopic dermatitis, Patch test, Allergic contact dermatitis

INTRODUCTION

It is generally believed that allergic contact dermatitis (ACD) is less common in persons with atopic dermatitis (AD) than in normal persons. This is thought to be due to decreased lymphocyte-mediated hypersensitivity response in atopics. It has also been observed that patients with AD are not readily sensitized by repeated application of dinitrochlorobenzene (DNCB). However, there is no total agreement in this respect. It has been documented that a poor response to DNCB occurs only in severe AD. Once the AD improves, DNCB challenges are positive. During the remission period most of the atopics respond to contact allergens like the normal population. In an American study, where 410 cases underwent allergic and irritant patch test reactions, it was observed that atopics were at least as likely to have contact allergy as were non-atopics. Similarly, several authors have noted different types of ACD occurring in atopic individuals in different studies— contact allergy to latex, topical steroid, clothing, etc. Even more, several cases of contact dermatitis complicating atopic dermatitis have been documented.

The study was designed to note the frequency of ACD in atopic patients in this part of the country, the western end of Assam, using Indian standard battery of Patch Test Allergens approved by the Contact and
Occupational Dermatoses Forum of India (CODFI). It was a hospital-based study. AD is not uncommon in this region. The estimated incidence rate of AD is 3.47 per 1000 patients according to a study conducted by this author[9] in the past.

METHODS

Thirty cases of AD were taken for this study during 2003-2004. Diagnosis of AD was based on the criteria of Hanifin and Rajka (1980).[1] All the selected cases of AD had mild to moderate grade of severity (Severity grading of AD: Rajka and Langeland).[1] There were 22 male patients and 8 female patients, in the age range of 7 to 50 years. The youngest patient was a boy, 7 years old; the oldest patient was a 50-year-old male. Almost all these cases were treated previously with different drugs with frequent remissions and relapses. All the cases were controlled by conventional therapy, and corticosteroids were used whenever necessary. On complete remission, the patients were tested with the Indian standard battery of allergens. The results were read after 48 and 72 hours. Patch test unit comprised 24 antigens in ointment form, 4 antigens in liquid form and 3 plant antigens as antigens-impregnated discs; aluminum patch test chambers prefixed on micropore tape and filter paper discs (Watman’s No. 5)

RESULTS

Out of the 30 AD cases, 7 patients (23%) showed positive reactions with the patch test allergens. Amongst them, 5 were male and 2 were female. The youngest patient was an 8-year-old girl and the oldest patient was a 38-year-old male who tested positive in this series. Out of the 7 patients, 6 cases were suffering from AD for more than 12 years; the last one had the disease for 7 years. All of them had a history of receiving drugs (both oral and topical) frequently for their ailment in the past. Four patients showed contact allergy to multiple allergens (i.e. 2 different antigens each) in this series. The remaining 3 cases showed contact allergy to a single antigen each.

A total of 31 allergens were used in this study of which 7 allergens were tested positive. While many of the allergens were antibacterial agents (neomycin sulfate, gentamicin and chinoform), the rest (nickel sulfate, chlorocresol and balsam of Peru) were used in a variety of consumer items. Neomycin was the most common allergen in this study; 3 out of 7 cases were tested positive with neomycin sulfate. The only plant allergen that tested positive was Chrysanthemum.

While recording the grade of patch test reaction, it was noted that one patient showed (++) ve reaction to neomycin sulfate; the rest of the cases showed (+) ve reaction to other allergens in this series.

DISCUSSION

This study shows that ACD is not uncommon in atopics; 7 cases (23%) out of 30 patients of AD showed positive patch test reactions with different antigens. The most common contact allergen was neomycin sulfate followed by gentamicin. Neomycin is a potent sensitizer all over the world and the reported incidence varies between 2.5%-6%.[10-12] In India, the incidence is said to be much higher.[13,14] The incidence of contact allergy due to gentamicin was found to be 8.3%[15] in India. But in UK the incidence is much higher and was found to be 31% in one study.[16] This is probably because gentamicin is used more than neomycin in the UK. Cross-reactivity between gentamicin and neomycin has been observed to be 40% in different studies.[17] The incidence of contact allergy to chinoform was found to be 10.9%[18] in the UK. In India, however, the prevalence of contact allergy to chinoform is less because of its infrequent use. Similarly, chlorocresol, which is used as a preservative, has a low sensitizing potential and is an infrequent sensitizer.[19] It cross-reacts with chloroxylene.

<table>
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<tr>
<th>Allergen profile and outcome of patch test</th>
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<tr>
<td>Name of the allergens</td>
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<td>------------------------------------------</td>
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<tr>
<td>1+ Positive</td>
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<tr>
<td>Gentamycin</td>
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<td>Chrysanthemum</td>
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<td>Nickel</td>
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<td>Chlorocresol</td>
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<td>Balsam of Peru</td>
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<td>Chinoform</td>
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<td>Fragrance mix</td>
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It is to be noted that many of these antigens, which tested positive in the present study, are generally used in local ointments applied for atopic conditions. Almost all these cases were treated previously with different topical drugs. This study indicates that the haphazard use of common antibiotic / common antibiotic-steroid (topical) preparations may cause sensitization in AD patients. It is a fact that the skin of the AD patient is frequently colonized with Staph. aureus, but this colonization is secondary rather than primary and it regresses when treated with corticosteroid alone. Specific anti-staphylococcal drugs (topical) should only be used when there is evidence of infection. Routine use of common antibiotic/antiseptic is not only ineffective, but may cause sensitization. It has also been observed that all those atopic patients who had ACD in this series had a longer duration of disease period (more than 12 years in 6 cases and 7 years in one case). This may be related to the fact that due to the chronic and relapsing nature of the disease, the patients used more topical medicines in an attempt to cure or control the disease; this made them more vulnerable to developing ACD.

REFERENCES